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Edward L. Keenan
Denis Paperno *Editors*

Handbook of Quantifiers in Natural Language

 Springer

HANDBOOK OF QUANTIFIERS IN NATURAL LANGUAGE

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HANDBOOK OF QUANTIFIERS IN NATURAL LANGUAGE

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Introduction

Edward L. Keenan and Denis Paperno

How to Read This Book

[Chapter 1](#) below is a Quantifier Questionnaire which contains a variety of queries concerning properties of quantifiers in natural language. It effectively provides answers to those queries for English. Each of the next 16 chapters is a case study of a particular language, responding to the queries in [Chapter 1](#), and the last chapter 18, is a list of generalizations supported by these case studies (plus one independent work on Finnish). Thus [Chapters 2](#) through [18](#) assume concepts and notation from [Chapter 1](#) not redefined in any later chapter. In consequence [Chapter 1](#) should be read before any other chapter.

Some (Un)Familiar Notation

We adopt, and adapt, Partee's (1995) *A*- and *D*- notation for quantificational expressions. In our usage *A*-type quantificational expressions are ones which typically combine with predicates to form complex predicates. So they may be affixed on a verb stem, an incorporated nominal, a pre-verb, an auxiliary verb, even a main verb, or, most often, an adverbial phrase or Prepositional Phrase. [Chapter 1](#) illustrates several of these. *D*-type quantificational expressions are nominal expressions or ones which typically combine with others to form nominal expressions. Nominal expressions, noted variously *NP* or *DP* by our authors, are ones that bind arguments of predicates (regardless of whether they occur 'in argument position' or not). So we use *D-quantifiers* for items that may fail to be Determiners, in contrast with Bach et al.'s original usage. In a language in which *every child* is presented as [*the [child every]*] we consider *every* a *D*-quantifier. So our use of *D-quantifier* and *A-quantifier* is determined by ways of morpho-syntactically grouping quantificational expressions. We do not give or assume any particular compositional semantics associated with *A*- and *D*-quantification, let alone a particular syntactic analysis.

Second, we use, sparingly, and again just for classificatory purposes, a notation for the semantic types of quantifiers that is standard in generalized quantifier theory. We just ad hocly note the major cases that occur as our limited use of

this notation doesn't merit a principled presentation (for which, see Peters and Westerståhl 2006 Ch 3). Expressions of *type (1)* bind, arguments of predicates. In more familiar *e,t* notation *type (1)* = $((e,t),t)$. There are many different ways of forming type (1) expressions in English: *Mary, every student, the big one that got away, not every student, at least two and not more than ten students, every student's doctor, two of John's students*, and even (see below) *more students than teachers*. Type (1) expressions combine with one place predicates (property denoting expressions) to form a zero place predicate (Sentence). More generally (Keenan and Westerståhl 1997) they combine with $n + 1$ place predicates to form n -place ones (e.g. *the thief* combines with the P2 *describe* to form the P1 *describe the thief*). *Every, most, more than ten* and semantically equivalent expressions in other languages are of *type (1,1)*. They combine with a property denoting expression to form an expression of type (1). In the sentence *More students than teachers signed the petition* we treat *more...than...* as of type $((1,1),1)$ as it combines with two property denoting expressions, *student* and *teacher*, to form the type (1) *more students than teachers*. Lastly, an expression of *type (2)* combines directly with a two place predicate to form a sentence. We might consider (**different people, different things**) as expressing a quantifier of type (2), combining directly with *like* to form *Different people like different things*.

We emphasize once again that the type notation we use is purely descriptive, not to be taken as an indication of a particular theory of semantic or syntactic composition. In particular, we do not assume a one-to-one mapping between semantic types and syntactic categories. Nor do we assume that a quantificational expression of a given type is necessarily a semantic unit and a syntactic constituent. For example, most linguists will not treat *different people, different things* in the example above as a syntactic constituent. Yet the semantic contribution of *different people, different things* is equivalent to a type (2) quantifier that provably can not be rendered through a combination of two (first order, type (1)) quantifiers. This justifies *type (2)* as a descriptive label, regardless of the proper compositional treatment of type (2) expressions.

Cross Chapter Diversity

We encouraged authors to follow their own ideas about how to organize their chapter rather than rigorously follow [Chapter 1](#) as an outline. (All authors are linguists or students of linguistics). This was for two reasons. First, article after article rigidly given in the same format is monotonous. And secondly, we did not want to force all the descriptions to be in the same (English based) format on pain of presenting languages as more similar than they are. Bach et al. (1995) and Matthewson (2008) support convincing diversity in the presentation of quantificational expressions in different languages.

So to avoid a uniformity bias we adopted two strategies. First, our basis for selecting expressions as quantificational was explicitly semantic. ‘Can you say X in your language, and if so, how?’ Our semantic classification has led us to consider more thoroughly than in previous work the means for building syntactically complex quantificational expressions. We did however cross-classify our semantic classes with an adaptation of Partee’s (1995) distinction between D- and A-quantifiers, as noted above. But we did not impose any further syntactic classification, let alone a syntactic framework. This leaves many interesting syntactic questions, such as precise characterization of internal DP structure, at the discretion of individual chapters’ authors. Indeed, given the structural diversity we observe, seeking a uniform syntactic treatment would be counterproductive at this point.

Second, and most obvious, we sought a diversity of languages to study. This goal, as always, is limited by the languages and linguists we had access to. For most of the 16 languages studied at least one author was a native speaker. Only in the case of Adyghe (Caucasian), Garifuna (Arawakan) and Pima (Uto-Aztec) did we rely on non-native speakers with extensive fieldwork experience in the language.

In terms of genetic diversity, five of the 16 languages we studied are Indo-European, from different branches: Western Armenian, German, Greek, Italian and Russian. The other 11 come from different phyla from Europe (Basque, Hungarian), the Caucasus (Adyghe), the Middle East (Hebrew), Africa (Malagasy, Wolof), Asia (Japanese, Mandarin), India (Telugu), and the Americas (Garifuna, Pima). In terms of surface syntax our languages include some that might be considered non-configurational (Adyghe, Pima), two that are verb initial (Garifuna, Malagasy), some that are SVO (Hebrew, Italian, Wolof), some that are SOV (Basque, Japanese, Telugu) and some in which basic word order patterns are not so neatly sketched (e.g. German, Greek, Mandarin).

Acknowledgements We wish first to thank our many authors for having put up with our sometimes wayward editing. As drafts came in we modified somewhat (but not massively) the Quantifier Questionnaire with the result that the first responders’ drafts differed most from the final questionnaire.

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Chapter 1

The Quantifier Questionnaire

Edward L. Keenan

Below we classify examples of quantificational expressions. To the extent possible provide semantically comparable expressions in the language (L) you're presenting. If L has many translations of a given expression, identify these differences (both syntactic and semantic) if you can.

We take the basic *semantic* type of quantifiers to be a relation between two properties – extensionally, two sets, and we say they have type (1,1). *No barber shaves himself* relates the set of barbers and the set of people who shave themselves. NO says their intersection is empty. *Ann always takes the bus to work* expresses the ALWAYS relation between the set of events in which Ann goes to work and the set in which she is riding a bus – the former is a subset of the latter. Our classification is *semantic* – logically equivalent expressions are typically not syntactically isomorphic: *some students* in Malagasy translates as *ny mpianatra sasantsasany* (lit: *the student some-some*). (See Baker (1995), Lee (2008), Matthewson (2001) for extensive discussion.)

We distinguish (Partee 1995) *D-quantifiers* and *A-quantifiers*. The former build expressions which are (or bind) arguments of predicates. *A-quantifiers* directly build predicates – verbal affixes, pre-verbs, auxiliary verbs, or predicate modifiers (adverbs, PPs). They are mathematically less well understood and morpho-syntactically and semantically more variable than D-quantifiers.

I Core Quantifiers: Three Basic Semantic Classes

Exhibit from your L D- and A-Quantifiers in each class below if possible (Jelinek 1995 and Vieira 1995 claim that Straits Salish and Asurini Do Trocara (Tupi-Guarani) lack D-quantifiers. No one claims that any languages lack A-quantifiers). We begin with **count** quantifiers.

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1.1 Generalized Existential (Intersective) Quantifiers

Here, for Q a quantifier and A,B sets, $Q(A)(B)$ is determined by $A \cap B$, the set of As that are Bs. So NO is existential as $NO(A)(B) = \text{true}$ iff (if and only if) $A \cap B$ is empty regardless of which As are not Bs and which Bs are not As.

1.1.1 D-Quantifiers

D-Quantifiers in English include: *a/an, some, several, no, zero, one, two, ... , many, few, a few, a couple, a dozen, which?, how many?, finitely many*. **Cardinal** quantifiers are the most productive subclass. Here QAB just depends on $|A \cap B|$, the number of As that are Bs.

- (1) a. I saw *a / one* picture of Churchill above the fireplace
b. *Some / Two* sailors are singing in the street

Interrogative *How many?* is cardinal, but *Which?* is merely intersective. *Which As are Bs?* requires identifying the members of $A \cap B$, not just their number.

- (2) a. How many students passed the exam?
b. Which students passed the exam?

Semantically more difficult are **value judgment** Qs: *many, few* and *enough*. Sometimes they refer to a cardinality (not a proportion) comparing it to an expected value (Moltmann 1996).

- (3) a. *Many* students attended the lecture, *few* understood it
b. *Enough* members attended to constitute a quorum

1.1.2 A-Quantifiers

A-Quantifiers include: *once, twice, sometimes, three times, occasionally, often, frequently, rarely, seldom, never, a lot*. (4c) from Passamaquoddy (Algonkian) illustrates a cardinality preverb. (4d) shows an A-quantifier within verbal morphology (Kalaallisut; Eskimo-Aleut).

- (4) a. John failed the exam *twice* before passing it the third time
b. He *often / occasionally / never* visits museums on weekends
c. Kehsi=koti+pson-uk sikiliyem-ok Passamaquoddy
X.many-Fut-catch-1Conj cricket-3proximate plural
I'm going to catch a lot of crickets (Bruening 2008:97)
d. ...Skakki+r+llattaar+tar+pu+gut (Skakkirlattaartarugut) Kalaallisut
...chess+do+sometimes+habit+IND.IV+1pl
...Sometimes we play chess. (Bittner and Trondhjem 2008:42)

1.2 Generalized Universal (Co-intersective) Quantifiers

Here QAB depends on the property A – B, the set of As that are not Bs.

1.2.1 D-Quantifiers

D-Quantifiers in English include *all*, *every*, and *each*. Note: *All As are Bs* is true iff A is a subset of B, which is equivalent to A – B is empty. In addition *any* sometimes has a universal interpretation, as do the *-ever* pronominals:

- (5) a. *Every / Each* child won a prize
 b. *Any* linguist can answer that question
 (≈ Every linguist can answer that question)
 c. *Whoever* finishes the exam gets a prize
 (≈ Each person who finishes . . .)

1.2.2 A-Quantifiers

A-Quantifiers Simplex ones are *always* and, perhaps, *whenever*. Here are a few cases from languages where A-quantification is a prominent or the only type (6c,d,e).

- (6) a. John always takes the bus to school
 b. John sings whenever he is in the shower
 c. yas = sən 'əw' čey Straits Salish
 always = 1.s.nom link work (Jelinek 1995:515)
 I always work
 d. mək^{mw} = Ø 'əw' p'əq tsə sp'eqəŋ Straits Salish
 all = 3abs link white Det sprout (Jelinek 1995:514)
 They are all/completely white, the flowers
 e. aoseoho sekwehe i-tow-i ŋoa Asurini do Trocara
 all evidential 3agt-lay.down-obl men (Tupi-Guarani)
 All men lay down (Vieira 1995:706)
 f. Pesq skitap nokka=psehl-n kiwhosu Passamaquoddy
 one man (3)-all=skin-3Subj.ObvP muskrat.ObvP (Bruening
 One man skinned all the muskrats 2008:99)
 g. barri-djarrk-dulubom gunj Mayali (Australian)
 3plPast-all-shoot.past.perf kangaroo (Evans 1995:209)
 They all shot the kangaroo
 h. Gunj barri-bebbe-yame-ng Mayali
 kangaroo 3aP-dist-spear-Past.Perf (Evans 1995:221)
 They each speared a kangaroo

1.3 Proportional Quantification

QAB depends on the *proportion* of As that are Bs: $|A \cap B|/|A|$.

1.3.1 D-Quantifiers

Simplex ones include *most*, *half*, and some uses of *many* / *few*. Often *most* translates as *a / the majority of*, which is syntactically complex.

- (7) a. *Most* students read the Times
 b. *Half the* students got an A in the course
 c. *Many* Nobel Prize winners have been Scandinavian (Westerståhl)

1.3.2 A-Quantifiers

A-Quantifiers *usually*, *mostly*, *often*, *always*, *frequently*, *rarely*. It is often not easy to decide when these adverbs pick out a number or a proportion.

- (8) a. Sue *usually* / *occasionally* takes the bus to work (de Swart 1996)
 b. John *often* fills out his own income tax forms

1.4 Morpho-Syntactically Complex Quantifiers

Work in generative grammar often treats quantifier as a functional category, implying that its members are not productively formed. But work on English (Keenan 1996), Malagasy (Keenan 2008) and Finnish (Suihkonen 2007) suggests that this is not the case. Many of the articles in Matthewson (2008) exhibit richer quantifier inventories than in earlier work in generative grammar. Primary means of forming complex quantifiers are (1) *Modification* (*more than ten*, *almost all*) and (2) *Boolean Compounding* (*and*, *or*, *neither...nor...and not*) (3) *Exception Phrases* (*all but ten students*) and (4) *Bounding Phrases* (*He exercised twice a day, six days a week for one year*). Proportional Qs and partitive constructions (*some / all / most of the students*) are typically complex.

1.4.1 Complex D-Quantifiers

1.4.1.1 Cardinal Quantifiers

Most productive here are modified **cardinal** Qs, (9). In (9c) *many* functions as a +count carrier of adverbs building complex quantifiers:

- (9) a. (*More than*) *five* / *Just five* / *About ten* women are in the class
 b. *Quite a few* / *Hardly any* / *Almost all* linguists are musicians
 c. There are *uncountably many* / *surprisingly many* blue dwarfs

more than two, exactly/only/just ten, less/fewer than a hundred, at least/at most five, about/approximately ten, nearly/almost two hundred, between five and ten, just finitely many, infinitely many, hardly any, practically/almost no, fifty give or take a few

1.4.1.2 Value Judgment Cardinals

Value judgment cardinals also allow some novel modification. *many* and, less freely, *few* function to host adverbial modifiers productively forming intensional quantifiers.

- (10) a. *Too many* / *Not enough* students came to the lecture
 b. *Surprisingly many* / *few* administrators came to the party

1.4.1.3 Exception Modifiers

Exception modifiers (Moltmann 1995, 1996, von Stechow 1993) seem most natural with *no* (intersective) and *every* (co-intersective), but (11c) from Garcia-Alvarez 2003, cited in Peters and Westerståhl 2006, finds some cases with *most* (proportional) using the more permissive *except*.

- (11) a. *No student but John* / *Every student but John* came to the lecture
 b. *All but two* students passed the course
 c. *Almost/Nearly every* student signed the petition
 d. *Most* dishwashers *except very low-end models* have a water-saving feature

1.4.1.4 Proportional Quantifiers

Proportional quantifiers are usually syntactically complex in English:

- (12) *More than* / *Exactly* / *Nearly* / *About* / *Less than* half the students passed

There are several dedicated structures in proportionality quantifiers:

- (13) a. (*More than*) *seven out of ten* sailors smoke Players
 b. *Only* / *Just* / *Not one* student *in ten* can answer that question

- (14) a. *Sixty percent of* American teenagers are overweight
 b. *Less than a third of* Americans are bilingual
 c. (*Only*) *Every second* car off the production line was inspected

ten percent of, two thirds of, a (large) majority of, a (small) minority of, more than twenty percent of, less than a quarter of, between twenty and thirty percent of, all but a tenth of, (just) a small percentage of, What percentage / fraction of?, more/less than / exactly half (of), all of

1.4.1.5 Boolean Compounds

- (15) a. *Not all* poets daydream
 b. *At least two but not more than ten* students got scholarships last year
 c. *Most but not all* students are liberal
 d. *Either very few or else very many* students will pass that exam
 e. *Neither every teacher nor every student* came to the party
 f. *Not more than one* teacher in *ten* knows the answer to that question

1.4.1.6 Partitives

Partitives in English = [(Q N) of NP_{def}], Q any of the quantifiers presented so far and NP_{def} a definite plural NP determining a non-empty domain.

- (16) a. (*All / None / Both / Neither / Just two / Each*) of those thieves fled
 b. *Some/Most but not all of* John's dogs were inoculated
 c. *Not more than a third of* the prisoners escaped
 d. John didn't see *any of* those films

1.4.2 Complex A-Quantifiers

1.4.2.1 A-Quantifiers

A-quantifiers are modifiable as above, often with **bounding phrases**, as in (17f,g):

- (17) a. Sean has been to Dublin {*exactly twice / more than five times*}
 b. He jogs to work on most *if not all* weekends / *almost every* Friday
 c. Ann {*almost never / only occasionally*} takes the bus to school
 d. Ann jogs to school *twice as often as* you do (Comparative +count)
 e. Ann smokes *twice as much as* you do (Comparative -count)
 f. Ed worked 50 weeks a year for 30 years (Bounding)
 g. John does twenty push-ups *twice a day, five days a week.*
 (Pratt and Francez 2001)

1.4.2.2 Boolean Compounds

- (18) a. In local elections Ann has *usually but not always* voted Democrat
 b. Ed has taken the exam *at least twice but not more than five times*
 c. Ann sleeps late *on weekends and on holidays except for Easter*

II Selected Topics

Consider the expression of the phenomena in **1.5–1.17** in your L

1.5 Comparative Quantifiers

In (19a,b,c) the italicized expressions denote quantifiers mapping two properties to a quantified NP (QNP) denotation. See Keenan and Moss (1984), Keenan (1987) and Beghelli (1994).

- (19) a. *More* students *than* teachers are vegans
 b. The reporter interviewed *twice as many* students *as* teachers
 c. We talked to *the same number of* students *as* teachers
 d. *How many more* students *than* teachers signed the petition?
 e. *Just as many* students *as* teachers' bicycles were stolen
 f. *Proportionately more* students *than* teachers signed the petition

That *more students than teachers* is an argument expression is supported by the diversity of ordinary NP positions in which it occurs in (19a–e). The quantifiers in (20a–e) are cardinal, but now depend on two numbers – in (19a) the number of students who are vegans and the number of teachers who are. *Proportionately more...than...* in (19f) is Proportional.

1.6 Type (2) Quantifiers

Type (2) Quantifiers (Keenan 1992, 1996, Szabolcsi 1997, Peters and Westerståhl 2006) express a property of binary relations. We seek ones provably not reducible to the iterated application of two ordinary QNPs. Useful here are adjectives implying 'different', e.g. *rival*, *mutually antagonistic*, *opposing*, etc., but also 'same', e.g. *similar*, *same color*, etc.

- (20) a. *Different people* like *different things*
 b. *Each student* answered *a different* / *the same question* on the exam
 c. *Which pupils* answered *which questions* (on the exam)?
 (= Identify the pairs (x,y), x a pupil, y a question and x answered y).

- d. *Sy and Jim* live in *neighboring towns* / *support rival political parties*
 e. *John* danced with *Mary* but *no one else* danced with *anyone else*
 (Moltmann 1996)
- f. *Ann* *often/never* sees *the same movie* *more than once*
 g. *The paintings* should be hung in *separate rooms* or *on opposite walls of the same room*
 h. *Different jurors* drew *different conclusions* from *the same arguments*
 (Tyhurst 1989)

- (21) Men are *usually* taller than women (Proportional).
 (Compares man-woman pairs <x,y> with x taller than y) to man-woman pairs in general)

1.7 Distributive Numerals and Binominal Each

Binominal *each* in (22a), like *apiece*, forces a distributive reading of the subject NP *the assistants*. See Safir and Stowell (1988) and Zimmermann (2002). By contrast *between them* in (22b) forces a collective reading on the subject.

- (22) a. The assistants graded sixty exams *each* / *apiece*
 b. The assistants graded sixty exams *between them*

Binominal *each* shares readings with distributive numerals found in Latin, Tagalog, Japanese, Georgian, Rumanian and Basque among others. See Gil (1982, 1988, 2005).

- (23) a. *Bina hastilia ferunt* Latin. Betts (1986)
 Two-each spears carry+3pl
 They carry two spears each
- b. *Legiones singulas posuit Brundisi, Tarenti, Siponti*
 Legions one-each station+at Brundisium, Tarentum, Sipontum
 He stationed one legion each at Brundisium, Tarentum, and Sipontum
- c. *Doi oameni au cãrat cîte trei valise* Romanian
 two men have carry.pastpart dist. three suitcases
 Two men carried three suitcases each (Gil 1993)
 *Three suitcases are such that each of two men carried them
- d. *Ikasle-ek irakasle-a-ri azapi-na lan aurkeztu zizkioten*
 student-pl.erg teacher-sg-dat seven-each work present aux.pl
 The students presented seven works each to the teacher
 (Basque, Etxeberria 2008)

Sometimes distributive numerals are more naturally translated as ‘in threes’:

- (24) a. Romanma da Zurabma sam-sami čanta caiyo
 Roman.erg and Zurab.erg 3-each.abs suitcase.abs carry.pst.3sg
 Roman and Zurab carried three suitcases each, or (Georgian)
 Roman and Zurab carried the suitcases three by three (Gil 2005)
- b. Nilahatra tsiroaroa ny mpianatra Malagasy
 lined+up tsi-2-2 the student
 The students lined up two by two / in twos

1.8 Mass Quantifiers and Noun Classifiers

Count Nouns denote properties of individuated objects. They combine directly with quantifiers: *two books*, *most cats*, etc. *Mass* nouns like *sand* and *hydrogen* do not: **most hydrogens*, **two sands*. To quantify over mass N denotations we pair them with **numeral classifiers** (Gil 2005:226–230), themselves often count Ns, usually illustrated with cardinal quantifiers, (25a), but other Qs occasionally license them, (25b).

- (25) a. Five ears of corn, two sticks of gum, several sheets of paper, a loaf of bread, ten pieces of candy, no bars of soap, a hundred head of cattle, a head of lettuce
 b. every piece of gum, most grains of sand

In English such classifiers are of limited utility as typically object denoting nouns are quantifiable without them. But in some Ls *two books* would gloss as *two volume book*, *two cats* as *two tail cat*, etc. Indicate the prominence of classifiers in your L. Mass Ns may also be quantified using **container** nouns, (26a) and **measure phrases**, (26b), (Higginbotham 1994).

- (26) a. two *bottles* of wine, a *carton* of milk, many *boxes* of candy, every *keg* of beer
 b. a *kilogram* of salt, two *pounds* of cheese, a *ton* of fertilizer

Some D-quantifiers, including some comparatives, combine just with +count nouns:

ten houses / **ten* hydrogens, *How many* houses? / **How many* hydrogens? *few* students / **few* butter, *ten per cent* of U.S. teenagers / **ten per cent* of gold, *Fewer* students *than* teachers / **fewer* rice *than* corn

Occasionally such quantifiers combine with a mass N yielding a ‘kind’ interpretation: *two fine wines, an excellent cheese*.

Some D-quantifiers combine with both mass and count nouns: *All (the) houses / all (the) beer, a lot of cats / a lot of wine, (some/no) car(s) / (some/no) rubber, not enough students / not enough water, hardly any students / hardly any wine, more boys than girls / more rice than corn*

Some D-quantifiers (fewer, we think) combine just with mass nouns:

much oatmeal / **much* hamburgers, *How much* soup? / **How much* soups?,
 very little wine / *very little houses, as much rice as corn / *as much boys as
 girls, *less* flour than buttermilk / **less* cats than dogs, *the whole/entire* day /
 **the whole/entire* days

Lastly the Qs in (27a,b) form partitives in English with a grammatically singular head noun.

- (27) a. *all/some/most/a lot/hardly any* of the house was damaged in the flood
 b. *much/(very) little/How much* of the house was damaged in the flood
 c. **no/both/much/many/every/each/one* of the house was damaged in the flood

1.9 Existential Constructions

Existential Constructions (ECs) assert, deny, or query the existence of objects or stuff with a certain property. A language may lack a distinctive EC (Passamaquoddy; Bruening 2008:85). If a language has one they accept as pivots cardinal NPs, including comparatives (28d), and value judgement NPs, both count, (28a), and mass (28e).

- (28) a. There are *too many students* in the class now
 b. Are there *any women / more than two women* in the class?
 c. There aren’t *any students* on the committee
 d. There aren’t *more cats than dogs / as many cats as dogs* in the pen
 e. There is *too much / not enough salt* in the soup

Query 1 Definiteness effect

Which quantifiers are acceptable as pivots in your L?

- (29) a. *Aren’t there most men in the army?
 (Intended: Aren’t most men in the army?)
 b. *Aren’t there all men in the army?
 (Intended: Aren’t all men in the army?)

Query 2

Is negation in Existentials, (28c), the same or different than negation in non-existential Ss? They are the same in English and Malagasy but different in Hebrew and Tagalog.

Query 3

Is the EC construction used for inalienable possession, as in (30) from Malagasy?

- (30) a. Misy zazakely ao an-trano b. Misy rihana roa io trano io
 Exist children there in-house Exist storey two that house that
 There are children in the house That house has two storeys

1.10 ‘Floating’ Quantifiers

‘Floating’ quantifiers are ones that occur both within the predicate and as D-quantifiers yielding rough paraphrases. In English only *all* and *both* float, anteceded by the subject:

- (31) a. All (of) the girls came to the party The girls *all* came to the party
 b. Both Jack and Jill fell down the hill Jack and Jill *both* fell down ...
 c. The two students laughed out loud *The students *two* laughed ...

But in Hebrew and Japanese (Gil 1993) numerals may float. And in Pima (Munro 1984) Qs that float include *vees* ‘all’, *ha’i* ‘some’, *mu’i* ‘many’, *al ha’as* ‘a little’, and *al ha’akia* ‘a few’. They may be anteceded by Subjects, Direct Objects, Indirect Objects/PPs, and Possessors:

- (32) a. Vees hegam ceceoj 'o ñeid heg Alice
 all those men 3.aux see art Alice
 All those men saw Alice
 b. Hegam ceceoj 'o vees ñeid heg Alice
 those men 3.aux all see art Alice
 Those men all saw Alice
 c. Gook ceceoj 'o voopo d. Ceceoj 'o gook voopo
 two men 3.aux run:pl men 3.aux two run:pl
 Two boys are running Two boys are running
 e. Vaik ceceoj 'añ ha-ñeid f. M'añ vaik ha-ñeid heg ceceoj
 three men 1 s.aux them-see ls.aux three them-see art men
 I see three boys I see three boys

- g. Nei 'ant heg vees heñ-navpuj ha-maakaika
 see 1s.aux art all my-friends their-doctor
 I saw the doctor of all my friends
- h. Vees nei 'ant heg heñ-navpuj ha-maakaika
 all see 1s.aux art my-friends their-doctor
 I saw the doctor of all my friends

Curiously non-subjects trump subjects for antecedence when both are possible:

- (33) Heñ-navpuj 'at ha'i ha-maa hegam ceceoj heg 'e-o"ohan
 my-friends 3.aux some them-give those men art 3refl-books
 My friends gave some of their books to the men
 *Some of my friends gave their books to the men
 *My friends gave their books to some of the men

Moreover two quantifiers may float simultaneously, in which case antecedence is determined by linear order (even if it leads to crossing dependencies, as below):

- (34) a. Rina 'at gook ha'i ha-maa heg 'e-o"ohgan hegam mamakai
 Rina 3.aux two some them-give art 3refl-books those doctors
 Rina gave two of her books to some of the doctors
- b. Rina 'at gook ha'i ha-maa hegam mamakai heg 'e-o"ohgan
 Rina 3.aux two some them-give those doctors art 3refl-books
 Rina gave some of her books to two of the doctors

1.11 Distribution of Quantifiers

1.11.1 Bare Qs as Predicates

In English a limited usage, (35), but well attested elsewhere, (36):

- (35) The students in the course were ?few / *twelve / *all
- (36) a. Maro / Vitsy / Folo ny mpianatra afa-panadinana Malagasy
 Many Few Ten the student free-exam
 The students who passed the exam were many / few / ten
- b. *Rehetra / *Sasany ny mpianatra nanatrika ny lanonana
 All / Some the student attended the celebration
 The students who attended the celebration were all / some

- c. Sami pilce ktanaqsu-pon-ik motewolonu-wok
 because long.ago be.many-Pret-3 motewolon-3
 Because there used to be many motewolonu Passamaquoddy
 (Bruening 2008:72)
- d. $\eta\text{ən}' = \emptyset$ cə sčeenəx
 Big/many = 3abs Det fish Straits Salish
 They are many, the fish (Jelinek 1995:519)
- e. $*\text{mək}'\text{w} = \emptyset$ cə sčeenəc “
 All = 3abs Det fish
 They are all, the fish

Are Predicate Quantifiers limited to cardinal numerals and value judgment cardinals?

1.11.2 Can Bare Qs Function as Arguments?

If so, which ones?

- (37) a. The ties were cheap so I bought *three, several, a few, many, *most, *all, *each*
 b. Here are the cars I have available. *Most | All | Only a few* are in good condition.

1.12 Relations Between Lexical Universal, Existential and Interrogative Pronouns

Can your L form quantifiers from interrogative or indefinite pronouns?

- English: *whoever, whatever, whenever, wherever, however, *whyever*
 Malagasy: *iza = who?, na iza na iza* ‘or who or who’ = *whoever, na inona na inona* ‘whatever’, *na aiza na aiza* ‘wherever, etc.
- Are (negative) existential and interrogative pronouns morphologically related?
 Russian *kto?* ‘Who?’, *nikto* ‘no one’, *kogda?* ‘when’, *nikogda* ‘never’.
 Passamaquaddy (Bruening 2008:75) *keq* ‘What[inan]’?, *wen* ‘[what[animate]]?’ and *tama* ‘where?’ are also used as indefinites: *something, someone, and somewhere* respectively.

1.13 Decreasing D-Quantifiers

Q is decreasing (on its second argument) iff QAB implies QAB' whenever B' is a subset of B (Dually Q is increasing if QAB implies QAB' if $B \subseteq B'$). *No* is decreasing since *No boys are laughing* implies *No boys are laughing loudly*.

1.13.1 Does Your L Have Quantifiers Which Build Decreasing NPs?

- | | | |
|------|--|-------------------|
| (38) | <i>No</i> students came to the lecture | (Intersective) |
| | <i>Fewer than five</i> students attended | “ |
| | <i>Not all</i> children cry a lot | (Co-intersective) |
| | <i>Less than a quarter</i> of the students passed the exam | (Proportional) |
| | <i>Not more than seven out of ten</i> sailors smoke | “ |

1.13.2 If Your L Has Decreasing NPs Do They License Negative Polarity Items?

- (39) Neither John nor Bill have *ever* been to Moscow
 Not more than two students saw *any* birds on the walk
 Less than half the students here have *ever* been to Pinsk

1.14 Distribution

1.14.1 Grammatical Roles

Do QNPs occur in all major grammatical roles – subject, object, object of adposition, possessor? Does your L have possessive quantifiers, (40d)?

- (40) a. John answered *just two* / *all but two* questions on the exam
 b. Ruth answered *most* / *three quarters of* the questions
 c. The library sent a notice to *several* students / *all the* students / *about half the* students
 d. *Two students'* doctors were arrested

1.14.2 Special Positions

Do QNPs occupy special positions not allowed or unusual for definite NPs? For example in English overtly negated NPs occur better in subject than object position:

- (41) a. Not every student answered every question
 b. *Every student answered not every question

In San Lucas Quiavini Zapotec, normally VSO, quantified subjects appear preverbally, while quantified objects occur in situ (Lee 2008):

- (42) a. B-da'uh Carlos chòonn gueht
 perf-eat Carlos three tortilla
 Carlos ate three tortillas
- b. Yra'ta' gylla' nàa neyets
 Every/all flower neut.be white
 All the flowers are white

Chamorro (mostly VSO; Chung 2008) forbids quantified *external* arguments to the right of the predicate. But such QNPs can be topicalized to the left of the predicate, and quantified NPs can occur as subjects of passive and unaccusative predicates, (43f):

- (43) a. Ha-na'säagi' i semnak i atadok-ku
 Agr-make.painful.prog the sun the eye-agr
 The sun hurts my eyes
- b. *Man-aitai káda patgun lepblu. c. *Man-aitai lepblu káda patgun.
 agr.AP-read each child book agr.AP-read book each child
 Each child read a book Each child read a book
- d. Káda patgun man-aitai lepblu.
 each child agr.AP-read book
 Each child read a book
- e. káda saina guäha diretcho-nña... pära u-fam-a'tinas areklu
 each parent agr.exist right-agr... Fut agr-AP-make rule
 Every parent has the right to make rules (Chung 1998:263)
- f. Ma-na'sinmagagu káda patgun
 agr.Pass-make.be.without.clothes each child
 Each child was made to undress

Finally, we do find Ss with more than one QNP binding arguments of the same predicate:

- (44) Todu i taotao gi ha:lum kuattu mang-ue.kuentus dos na linguahi.
 All the person Loc inside room agr-speak.Prog two Lnk language
 Every person in the room speaks two languages. ('every' wide scope)

1.15 Scope Ambiguities

Can two or more arguments of a given predicate be bound simultaneously by QNPs? If so do you get scope ambiguities?

- (45) a. Some editor read every manuscript (Scope ambiguous in English)

Subject Wide Scope (SWS): There is one editor x who read all the ms

Object Wide Scope (OWS): Each manuscript is such that at least one editor read it (possibly different editors read different manuscripts)

- b. Three teachers graded 100 exams

?? SWS: There are 3 teachers each of whom graded 100 exams

?? OWS: There are 100 exams such that each teacher graded them

Group: There is a group of 3 teachers and a group of 100 exams and the group of teachers graded the group of exams (Natural)

In (22) we saw that *apiece* and binominal *each* force a distributive (SWS) reading, whereas the adverbial *between them* forces group (collective) readings,

In English, modified numerals in object position tend to force narrow scope, but an appropriate existential S will force object wide-scope:

- c. Each student read one Shakespeare play over the vacation (Scope ambiguous)

- d. Each student read at least one Shakespeare play (Just SWS)

- e. There was one Shakespeare play that each student read (Just OWS).

- f. In English, NPs which are not increasing tend to be interpreted in situ

No politician kissed every baby at the fair (Just SWS)

Every politician kissed no baby at the fair (Just SWS)

Just one pupil answered every question on the exam (Just SWS)

All but one pupil answered at least one question (Just SWS)

In English different lexical choices of quantifier may trigger different judgments of scope (non-)ambiguity even when the Qs are near synonyms.

- g. Some editor read all the manuscripts (Just SWS)

Some editor read every/each manuscript (Scope Ambiguous)

A picture of all the students [Maybe one picture, many students]

A picture of each student [As many pictures as students]

some friend of every senator (Scope ambiguous)

some x such that x is a friend of every senator (*Some wide scope*)

for every senator y , some friend of y (*Every senator wide scope*)

h. Scope ambiguity asymmetries in wh-questions.

1. Which student answered the most / all the questions? (Just SWS)
2. a. Which question did each student answer? (Scope Ambiguous)
 - SWS: For each student x, identify the question x answered
 - OWS: Identify a unique question y such that each student answered y.
- b. Which question did all the students answer? (Just OWS)

(46) Ambiguity between nominal and verbal quantifiers (Gil 1993)

Two boys sang three times

SWS: There are two boys who sang three times each

OWS: On three occasions there were two boys who sang

(47) Quantifier-Negation scope. In preference in English quantified subjects scope semantically over negation, as in (48a,b). (48a',b') forces negation to scope over the subject:

- (48) a. Every student in my class doesn't smoke (Every > not)
 a'. Not every student in my class smokes (Not > every)
- b. More than four teachers didn't sign the petition (Four > not)
 b'. Not more than four teachers signed the petition (Not > four)

(Short universal subjects are ambiguous. *Everyone doesn't know that* might be used to mean that no one knows that or simply that not everyone knows that.) In contrast, objects in English naturally scope under negation: *Ed hasn't read more than 30 Shakespeare plays* may be true and is not used to mean that there are 30 such plays he hasn't read, which may be false.

1.16 One to One Dependency

- (49) a. For every drop of rain a flower grows (Boolos 1981)
 b. Every acorn we planted grew into a big oak tree
 (Lee et al. 1999, see Jackendoff 1983, Gruber 1965)

1.17 Rate Phrases

- (50) a. John washes his face *three times a day*
 b. I run *twenty kilometers a day*

1.18 Some Concluding Spot Checks

- (51) Does your L
- have at least one monomorphemic *all*?
 - have at least one monomorphemic *one*?
 - have at least one monomorphemic value judgment *many*?
 - have a monomorphemic Det translating *no*?
 - make a lexical or phrasal distinction between a distributive and a collective universal quantifier? E.g. English distinguishes *all (the)* from *each / every*. Mohawk (Baker 1995) distinguishes *akwéku* ‘all’ and *skátshu* ‘each’; Malagasy (Keenan 2008) has 7 or 8 universal type quantifiers.
- (52) In your L are A-quantifiers morphosyntactically more complex than D-ones (Gil 1993)?
frequently, occasionally are built from *frequent, occasional*. *Three times, many times* even have the internal structure of an NP. But *often* and *seldom* are not more complex than *many* and *few*. And we appear to have some semantic back-formation, with the adjective interpreted as a function of the adverb:
- (53) a. He is a frequent visitor at the zoo = He visits the zoo frequently
 b. An occasional sailor walked by = Occasionally a sailor walked by
 (Stump 1981)
- Note that in (53b) the right hand S is scope ambiguous, the left one only has *occasionally* with wide scope – so the sailors may vary with the occasions.
- (54) Does your L have a simple translation of *only*? If so does it apply in the same form in the following three contexts?
- Only John came to the party
 - Only five students came to the lecture
 - John only sang, he didn’t also dance

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Chapter 2

Quantifiers in Adyghe

Liudmila Nikolaeva

2.1 Introduction

Adyghe, also known as West Circassian, together with Kabardian forms the Circassian branch of The Northwest Caucasian (also called Abkhazo-Adyghean) language family. It is spoken in the Adyghe Republic and the Krasnodar region of Russia, as well as in Turkey and other countries of the Middle East. Worldwide, there are about 425,000 speakers of Adyghe, approximately 128,000 of whom live in Russia.

Attempts to create a writing system for Adyghe date back to the middle of the nineteenth century. However, until the twentieth century, they have been largely unsuccessful. An Arabic-based script was used from 1917. In 1927, it was replaced with a Latin-based script, and since 1938 Adyghe has used the Cyrillic-based alphabet developed by N.F. Yakovlev.

Adyghe is one of the two state languages of the Adyghe Republic. It is taught in schools and used in mass media (both television and printed materials). The substantial body of original and translated Adyghe-language writings includes literary, political, scientific and religious texts.

The present work is based on data collected during fieldwork trips to Khakurinokhabl' (2009) and Khatazhukay (2010). These villages are located in the Adyghe Republic, within 5 km of each other.

2.2 Adyghe Grammar: Some Background

This section is devoted to a very brief overview of Adyghe grammar. For further details see (Testelets et al. 2009, 17–120).

Adyghe is an Ergative language in the sense that the subjects of intransitive verbs and the themes of transitive verbs are marked with the same case (which

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we'll call Absolutive). However, the case which marks agents of transitive verbs is also used to mark indirect objects and various adjuncts, which is why we'll gloss it as Oblique.

Beside Absolutive and Oblique, Adyghe has Instrumental and Adverbial cases which have a wide range of uses. Unlike Absolutive and Oblique, Instrumental and Adverbial phrases never trigger agreement in the predicate and therefore can be analyzed as adjuncts.

In Adyghe, indefinite DPs are marked with the null case marker for Absolutive and Ergative, and definite DPs are overtly inflected for these cases. The contrast in definiteness is illustrated below, in (1)–(2):

- (1) se sadə-m č'etəw-∅-∅¹ ∅-š'ə-s-λeɸ^wə-ɸ
 I garden-OBL cat-SG-ABS.IND 3SG.ABS-LOC-1SG.A-see-PST
 I saw a/*the cat in the garden.
- (2) se sadə-m č'etəwə-∅-ɾ ∅-š'ə-s-λeɸ^wə-ɸ
 I garden-OBL cat-SG-ABS.DEF 3SG.ABS-LOC-1SG.A-see-PST
 I saw the/*a cat in the garden.

The morphological distinction of definiteness is not found in some types of nouns, e.g., proper names. Furthermore, the distinction is neutralized in the plural. Plural markers are optional, however, when they are present, they require overt case inflection:

- (3) mə wəne-m pšeše daxə-xe-*(ɾ) jə-sə-x
 this house-OBL girl pretty-PL-ABS LOC-sit-PL
 There are pretty girls in this house./The pretty girls are in this house.

Possessive pronouns and case markers are generally mutually exclusive:

- (4) se aslan jə-kart-(*er) s-λeɸ^wə-ɸ
 I Aslan his-photo-(*ABS) 1SG.A-see-PST
 I saw Aslan's photo (a/the photo of Aslan).

¹ To simplify the glosses, I will gloss overt case markers as ABS and OBL without specifying their definiteness. Null morphemes, such as SG and case markers of indefinite DPs, won't be glossed at all. The same will be accepted for various null affixes in the verbal paradigm, such as the null Absolutive agreement prefix (1–2), the present tense suffix, etc. Moreover, I will employ abbreviated glosses for words that are not in the focus of attention for a particular section (e.g., š'ə-s'-ew LOC-get.out.of-ADV 'of' may be glossed as of-ADV in examples demonstrating unrelated issues).

Case markers can only overtly inflect possessive phrases in two cases: when the possessive phrase is inflected with the plural (5), or when it is a complement of the copula *-rə* (6):

- (5) $tə\kappa^wase$ *aslan* $jə-nəb\check{z}\epsilon\kappa^we-xe-r$ $qe-\check{k}^w\epsilon-\kappa a-\kappa e-x$
 yesterday Aslan his-friend-PL-ABS DIR-GO-PST-PST-PL
 Yesterday, Aslan's friends came.
- (6) *aslan* $jə-neb\check{z}\epsilon\kappa^wə-r$ *se-rə*.
 Aslan his-friend-ABS 1SG-COP
 I am Aslan's friend.

Case and number inflections mark the entire DP and are aligned to its right edge²:

- (7) [pšeše daxe dede]-xe-r
 [girl pretty very]-PL-ABS
 very pretty girls

Adjectives are generally linearized to the right of the head-noun (exceptions to this rule are loan adjectives and derived adjectives, like *pčedəž'* 'morning' – *pčedəž're* 'morning.ADJ'). Numbers, except for *zə* 'one', are found to the right of the noun, and so are most of the quantifiers.

Aside from that, Adyghe has fairly free word order with strong tendencies to verb-finality and left-branching.

Adyghe is a polysynthetic language with extremely rich verbal morphology. The predicate has obligatory prefixal agreement with Oblique and Absolutive arguments (3rd person Absolutive agreement markers are null, though). Additionally, there is an optional suffixal marker that marks that the verb's third person Absolutive argument as [+plural].

There are two negation markers whose distribution depends on the tense/mood/modality of the verb. The most relevant distinction for the present work is that suffixal negation *-ep* is only allowed with a finite predicate, while the prefixal *mə-* attaches to all non-finite forms and certain finite forms (for details see Sumbatova and Lander (2007)). Suffixal negation can be used to detect the main predicate of the sentence.

² In Adyghe, there is no good phonetic or phonological reason to divide phrases into words. Inflectional morphology clearly indicates that a phrase is at least a separate word – however, if such morphology attaches to an entire phrase, as for example is the case with case and number inflections on a DP, there are no independent reasons to suggest that a subconstituent (an adjective, in case of DP) is a separate word. Therefore, one should keep in mind that a notion of *word* is largely irrelevant and meaningless. Separating NP subconstituents into words, I will follow the conventions of Adyghe standard orthography: a one-syllable constituent forms a single word with the head, a more than one syllable word is written separately.

The distinction between different parts of speech is extremely weak (see Lander and Testelefs (2006) for more details). Virtually any word can function both as a noun and as a predicate:

- (8) mə č̣'ale-m jə-nebžɛɸ^w qe-ḱ^wa-ɸ
 this boy-OBL his-friend DIR-go-PST
 This boy's friend came.

- (9) qe-ḱ^wa-ɸe-r mə č̣'ale-m jə-nebžɛɸ^wa-ɸ
 DIR-go-PST-ABS this boy-OBL his-friend-PST
 The one who came was this boy's friend.

In fact, it has been suggested in a number of works (Rogava and Keraševa (1966), Testelefs et al. (2009), among others) that for Adyghe the distinction between stative and dynamic predicates (see Arkadjev (2009)) is a much more prominent and meaningful one than the one between verbs and nouns. Therefore, the issue of compatibility of A-quantifiers and stative verbs is very important for Adyghe (it will be addressed in the sections devoted to A-quantifiers).

Relativization of an Absolutive participant isn't marked on the verb except for the 3SG Absolutive agreement prefix, which is null (*qeḱ^waɸer* 'the one who came' in (9)); relativization of an Oblique participant is marked by the agreement prefix *zə-* occupying the position of the relativized argument:

- (10) wəne zə-ʃə-ɸe-r ba-ɸ
 house REL.A-do-PST-ABS many-PST
 Those who built houses were numerous.

In internally headed relative clauses, the head noun is marked with Adverbial case:

- (11) č̣'al-ew wəne zə-ʃə-ɸe-r ba-ɸ
 boy-ADV house REL.A-do-PST-ABS many-PST
 The guys who built houses were numerous.

Relativization is a means of nominalization. Relative clauses can function as DPs and occupy nominal positions:

- (12) č̣'al-ew sjə-klas jə-sə-ɸe-m a-š'əš'-ew
 boy-ADV my-class LOC-sit-PST-OBL 3PL-of-ADV
 wəne zə-ʃə-ɸe-r ba-ɸ
 house REL.A-do-PST-ABS many-PST
 Many guys from my class built houses (lit.: Of the guys who were in my class those who built houses were many).

Relativization is also used with cleft-like syntactic derivations when one of the constituents in the sentence becomes a finite predicate. This happens when a constituent is focused (in a declarative sentence (13) or is a focus of the question (14) – see Sumbatova (2009) for an extensive discussion) or when morphology in a constituent is incompatible with an argument position – e.g., because it contains a suffixal ‘finite’ negation (15).

(13) mə č̣ʼale-r arə zjə-č̣ʼaške zə-q^wəta-βe-r.
 this boy-ABS COP selfʼs-cup REL.A-break-PST-ABS
 Itʼs this boy who broke his cup

(14) sədjəβ^w-a wə-qə-zə-k^we-šʼtə-r?
 when-Q 2SG.ABS-DIR-REL.TEMP-go-FUT-ABS
 When will you come?

(15) ar zə-šə-re-r mačʼ-ep
 this.ABS REL-KNOW-DYN-ABS few-NEG
 lit.: Those who know it arenʼt few.

An extensive description of Adyghe morphophonology is far beyond the scope of this work. For a detailed account of such phenomena see Smeets (1984) and Testelefs et al. (2009). The discussion in this paper will be limited to the *a~e* alternation – the one process which has a direct bearing on identifying the morphosyntactic properties of quantifiers.

2.2.1 *The a~e Alternation: A Test for Syntactic Category*

This section is a brief overview of the phenomena addressed in detail in Smeets (1984) and Arkadiev and Testelefs (2009).

Adyghe has a process which realizes an underlying /e/ as [a] and can be captured with the following rule: /e(R)Ce#/ → [a(R)Ce#], where R is a sonorant, C is a consonant and # is a certain edge to which the process is aligned. This process occurs in verbs and NPs, but I will only discuss the NPs here.

In the NPs, the relevant edge is a boundary between lexical projections inside the NP on the one hand, and inflectional morphemes and lexical projections outside of the NP on the other. Here are some examples:

(16) /pšeše#/ → [pšaše]
 girl
 /pšeše dexe#/ → [pšeše daxe]
 girl pretty

Inflections neither participate in nor block the alternation:

- (17) /p̂šeše#-xe-r/ → [p̂šašexer]/*[p̂šešaxer]; *[p̂šešexer]
 girl#-PL-ABS
 /p̂šeše#-me/ → [p̂šašeme]/*[p̂šešame]³
 girl-OBL+PL

Some elements allow certain variability. For example, *dede* ‘very’ exhibits one of the two behaviors depending on the speaker’s grammar:

- for some speakers, *dede* behaves as an inflectional morpheme: *dede* doesn’t block the alternation and defines the NP-boundary as located to its immediate left (18a), i.e., in this case, *dede* behaves just like *-xer* ‘PL.ABS’ and *-me* ‘PL+OBL’ (17);
- for other speakers, *dede* behaves as a lexical projection which belongs to the NP, but is not able to participate in the alternation – (18b):

- (18) a. /p̂šeše dexe# dede/ → [p̂šeše daxe dede]
 girl pretty very
 b. /p̂šeše dexe dede#/ → [p̂šeše dexe dede] (!NOT dade)
 girl pretty very

Smeets (1984) suggests that the penultimate /e/ in *dede* is different from underlying /e/ in other words (such as *p̂šeše* ‘girl’ and *dexe* ‘pretty’) that are capable of undergoing the alternation.

Summarizing briefly, the a~e alternation allows us to detect the rightmost boundary of the NP and determine which elements merge inside the NP and which ones – outside. This test will be used to detect at which level each of the quantifiers enters the structure with respect to its complement.

Three Basic Classes of Quantifiers

2.3 Generalized Existential (Intersective) Quantifiers

2.3.1 D-Quantifiers

The examples below demonstrate Adyghe existential quantifiers. *zə* ‘one’, unlike other cardinals, can only appear to the left of the head noun:

- (19) se sadə-m zə č’etəw (*zə) š’ə-s-λeɸ^wə-ɸ
 I garden-OBL one cat (*one) LOC-1SG.A-see-PST
 I saw one cat in the garden.

³ *-me* is a fused marker for ‘OBL+PL’, which alternates freely with regular inflection set *-xe-m* ‘-PL-OBL’.

This cardinal incorporates into the NP and attaches closer to the root than possessive prefixes:

- (20) se aslan jə-zə-kart s-λeɸ^wə-ɸe
 I Aslan his-one-photo 1SG.A-see-PST
 I saw one picture of Aslan.

Another existential quantifier is *g^were* ‘some’, which can combine with *zə*.⁴ In singular, *g^were* can be inflected with Oblique (21), but not Absolutive (22).

- (21) ʔ^wefšəɸ^we g^were-m wəramə-m wered qe-š'-a-ʔ^we
 worker some-OBL street-OBL song DIR-LOC-3PL.A-say
 Some worker is singing in the street.
- (22) se sadə-m (zə) č'etəw g^were-(*r) š'ə-s-λeɸ^wə-ɸe
 I garden-OBL (one) cat some-(ABS) LOC-1SG.A-see-PST
 I saw one cat in the garden.

Plural marking requires case inflections in all cases, thus, ‘some-PL-ABS’ is translated as *g^were-xe-r*, and ‘some-PL-OBL’ as *g^were-xe-m*.

Adyghe has a number of quantifiers that mean ‘several’. They are undoubtedly existential: they are actually approximate cardinals derived from the simplex cardinals ‘one’ and ‘two’.

- (23) a. zərəz-xe-r b. z-e-je-ʔ^w-e-je
 one.by.one-PL-ABS one-TMP⁵-OR-TWO-TMP-OR
 several several
- (24) č'eleježek^we zərəz-xe-r j-e-žə-ɸe-x mə txələ-m
 pupil some-PL-ABS 3SG.IO-OBL-read-PST-PL this book-OBL
 Some pupils read this book.

However, *zawəle*, *lawəze*, *qawəme* (25) and especially *pčəɸe* (26) may mean something closer to ‘a number of’ without further specification of whether this

⁴ *zə* ‘one’ is the only numeral which can combine with *g^were* as an existential quantifier (for other uses, see Section 2.3.1.4 ‘Almost/Approximately’).

⁵ This is probably the same suffix *-e-* which is used for forming complex numerals in Adyghe, such as *s'-e-č'ə* three-TMP-ten ‘thirty’ (Rogava and Keraševa (1966) suggest that *č'ə* in *s'eč'ə* is a form of *pšə* ‘ten’)

number is closer to ‘some’ or to ‘many’ – *pčəvə* is especially prone to being translated as ‘many’. Below I demonstrate how native speakers arrange the existential quantifiers on a scale:

	←		→	
zə	zərəzχer, zejeɬʷəje	lawəze, zawəle, qawəme	pčəvə	be
1	several(1-2)	several/a number of	a number of/many	many

- (25) bzəɬfəvə zawəle-me/lawəze-me/qawəme-me
 woman several-OBL+PL
 mə žane-ɾ a-gʷə ɾ-jə-hə-ɸ
 this dress-ABS their-heart LOC-3SG.A-carry-PST
 Several women liked this dress.

- (26) bzəɬfəvə pčəvə-me mə žane-ɾ a-gʷə ɾ-jə-hə-ɸ
 woman several-OBL+PL this dress-ABS their-heart LOC-3SG.A-carry-PST
 A number of/Many women liked this dress.

2.3.1.1 Form of Existential Sentences

Existential and locative sentences employ essentially the same components: an existential verb, an Oblique DP, which denotes location, and an Absolutive DP, which functions as a subject or pivot. The question of word order and distinguishability of the two constructions is addressed in Section 2.3.1.3.

Adyghe has several existential predicates, as shown in Table 2.1 below.

The predicate in existential/locative constructions is selected depending on the semantic class of the subject. For example, the verb ‘to sit’ is usually used

Table 2.1 Adyghe existential predicates

(LOC)-tə-	‘to stand’
(LOC)-sə-	‘to sit’
(LOC)-λə-	‘to lie’
(LOC/POSS)-ʔə-	‘to exist’/‘to have’
χʷə ⁶	‘to happen’ (used as existential with cardinal QNPs in subject position)

⁶ The verb χʷə- does not belong to the class of core existential/locative predicates and has an extremely wide array of other meanings and uses, however. I list it here because in certain subclass of cases, it patterns on a par with the core existential predicates. Addressing the semantics of this verb and the constraints associated with it is far beyond the scope of this study.

with animate subjects, the verb $\chi^w\text{-}$ is used with cardinal QNPs; the verbs ‘to stand’ and ‘to lie’ have lexically determined distribution:

- (27) $\text{was}^w\text{-m}$ $\text{z}^w\text{e}\text{b}^w\text{a-be}$ $\text{j}\text{\textcircled{a}}\text{-t}$
 sky-OBL star-many LOC-stand
 There are many stars in the sky.
- (28) $\text{p}\text{\textcircled{s}}\text{'er}\text{h}\text{\textcircled{a}}\text{p}\text{\textcircled{e}}\text{-m}$ $\text{z}\text{\textcircled{a}}\text{d}\text{\textcircled{e}}\text{d}\text{\textcircled{e}}\text{m}$ $\text{\textcircled{s}}\text{x}\text{\textcircled{a}}\text{n}$ $\text{j}\text{\textcircled{a}}\text{-}\lambda\text{-ep}$
 kitchen-OBL now food LOC-lie-NEG
 There is no food in the kitchen now.

The choice of locative prefix on the existential predicates depends on the location of the subject:

- (29) $\text{m}\text{\textcircled{a}}$ $\text{\textcircled{c}}\text{\textcircled{a}}\text{g}\text{\textcircled{a}}\text{-m}$ $\text{h}\text{\textcircled{e}}$ $\text{\textcircled{c}}\text{'e-t}\text{\textcircled{a}}$
 this tree-OBL dog LOC-stand
 There is a dog under this tree.
- (30) $\text{m}\text{\textcircled{e}}\text{z}\text{\textcircled{a}}\text{-m}$ $\text{t}\text{\textcircled{a}}\text{b}^w\text{\textcircled{a}}\text{z}\text{\textcircled{a}}$ $\text{x}\text{\textcircled{e}}\text{-s}$.
 forest-OBL wolf LOC-sit
 There are wolves in the forest.

Existential verbs are inflected for tense and negation as all other verbs are:

- (31) $\text{z}\text{\textcircled{a}}\text{d}\text{\textcircled{e}}\text{d}\text{\textcircled{e}}\text{m}$ $\text{k}\text{\textcircled{l}}\text{\textcircled{a}}\text{s}\text{\textcircled{a}}\text{-m}$ $\text{p}\text{\textcircled{s}}\text{\textcircled{e}}\text{\textcircled{s}}\text{-j}\text{\textcircled{a}}\text{-t}\text{\textcircled{f}}$ $\text{j}\text{\textcircled{a}}\text{-s}$,
 now class-OBL girl-LNK-5 LOC-sit
 $\text{\textcircled{v}}\text{\textcircled{e}}\text{\textcircled{r}}\text{\textcircled{j}}\text{\textcircled{e}}\text{\textcircled{k}}^w\text{\textcircled{e}}$ $\text{p}\text{\textcircled{s}}\text{\textcircled{a}}$ $\chi^w\text{\textcircled{a}}\text{-}\text{\textcircled{s}}\text{'t}\text{\textcircled{a}}\text{b}\text{-ex}$ $/\text{j}\text{\textcircled{a}}\text{-s}\text{\textcircled{a}}\text{-}\text{\textcircled{b}}^7$
 last.year 10 happen-IMF-PL /LOC-sit-PST
 There are 5 girls in the class now, but last year there were 10.
- (32) $\text{z}\text{\textcircled{a}}\text{d}\text{\textcircled{e}}\text{d}\text{\textcircled{e}}\text{m}$ $\text{k}\text{\textcircled{l}}\text{\textcircled{a}}\text{s}\text{\textcircled{a}}\text{-m}$ $\text{p}\text{\textcircled{s}}\text{\textcircled{a}}\text{\textcircled{s}}\text{\textcircled{e}}$ $\text{j}\text{\textcircled{a}}\text{-s-ep}$,
 now class-OBL girl OBL-sit-NEG
 $\text{\textcircled{v}}\text{\textcircled{e}}\text{\textcircled{r}}\text{\textcircled{j}}\text{\textcircled{e}}\text{\textcircled{k}}^w\text{\textcircled{e}}$ $\text{b}\text{\textcircled{e}}$ $\chi^w\text{\textcircled{a}}\text{-}\text{\textcircled{s}}\text{'t}\text{\textcircled{a}}\text{b}\text{-ex}$ $/\text{j}\text{\textcircled{a}}\text{-s}\text{\textcircled{a}}\text{-}\text{\textcircled{b}}$
 last.year many happen-IMF-PL /LOC-sit-PST
 There are no girls in the class now, but last year there were many.

⁷ Absolutive agreement with cardinal QNPs on the core existential verbs is somewhat degraded for the majority of speakers I consulted with. The exact reasons for that would be subject for further investigation.

2.3.1.2 Affirmative/Negative Existentials

zəg^were ‘some’ is used as an existential in positive declaratives and polar interrogatives (33–34):

- (33) wəne-m zəg^were jə-s
 house-OBL some LOC-sit
 There is someone in the house.
- (34) wəne-m zəg^were jə-s-a?
 house-OBL some LOC-sit-Q
 Is there anyone in the house?

It is morphologically and lexically distinct from interrogative pronouns:

- (35) xet-a wəne-m jə-sə-r?
 who-Q house-OBL LOC-sit-ABS
 Who is in the house?
- (36) səd-a qe-p-hə-ɣe-r?
 what-Q DIR-2SG.A-bring-PST-ABS
 What did you bring?

Negative existentials are built from existential quantifiers (such as *zə* ‘one’) or existential QNPs (e.g., *zə cəB^we* ‘one mouse’) by adding the scalar particle *-jə* ‘even’/‘COORD’, which I gloss as ‘&’ here. Without negation, derivations with *-jə* function as free-choice items/universal quantifiers.

The words *parjə* and *zəparjə*, both meaning ‘no-one’, are not used without the particle *-jə*. Negative existentials built from *zəg^were* ‘some’ and *xet* ‘who’ are generally not accepted by middle-aged native speakers, but are acceptable for younger speakers:

- (37) wəne-m z-jə /parjə /zəparjə /zəc-jə /%zəg^wer-jə /%xet-jə jə-s-ep
 house-OBL one-& /nobody/nobody /only-& / some-& / who-& LOC-sit-NEG
 There isn’t anyone in the house.

Negative existential constructions (38) use the same negation as simple declaratives (39). The Pivot of the existential construction can be filled either by an NPI (*zə cəB^wjə* ‘even one mouse’) or by an indefinite DP (note that the number inflection in Adyghe DPs is optional: e.g., the noun ‘mouse’ in (38) can be inflected for case and number – *cəB^we-xe-r* – or left unmarked – *cəB^we-Ø-Ø*,

without any consequences for the interpretation). The same is true for the existential QNP in declaratives.

(38) wəne-m cəḅ^we /cəḅ^we-xe-r /zə cəḅ^w-jə jə-s-ep
 house-OBL mouse /mouse-PL-ABS /I mouse-& LOC-sit-NEG
 There are no mice in the house (no mice/not a single mouse).

(39) wene-m cəḅ^we-(xe-r) /zə cəḅ^w-jə jə-s-λeḅ^wə-ḅ-ep
 house-OBL mouse-(PL-ABS) /I mouse-& OBL-1SG.A-see-PST-NEG
 I didn't see any mice in the house.

Possessive constructions (41–42) have the same structure as existential ones (40), but can only use the predicate (*POSS*)-ʔə-. The possessor is marked with Oblique and the possessee is inflected with Absolutive (which can only be seen in (42) because the Absolutive case marker is null with singular indefinite nouns):

(40) pš'erəḥəpe-m ʒədedem šxən jə-ʔ-ep
 kitchen-OBL now food LOC-exist-NEG
 There is no food in the kitchen now.

(41) mə pšeše-ʒ'əje-m ʒene wəcəš^w-jə-pλ jə-ʔ
 this girl-small-OBL dress green-LNK-4 3SG.POSS-exist
 This girl has 4 green dresses.

(42) mə č'ale-m šəpχ^wə-xe-r jə-ʔe-x
 this boy-OBL sister-PL-ABS 3SG.POSS-exist-PL
 This boy has sisters.

2.3.1.3 Pivot Position and Weak Determiners

The default word order for the existential construction is 'LocP Pivot Verb'. In some dialects, as an anonymous reviewer points out, Pivot cannot be scrambled to the left over the LocP. However, I have not found a constraint of this sort in the dialect I studied, where the only reliable way to distinguish between the two constructions, existential and locative, is definiteness. When the subject is unambiguously marked as indefinite, the sentence gets an existential interpretation (43), and when the subject is definite, the sentence is interpreted as locative (44):

(43) mə čəγə-m č'etəw tje-s-ep.
 this tree-OBL cat LOC-sit-NEG
 There is no cat on this tree./*The cat is not on this tree.

(44) mə čəγə-m č'etəwə-r tje-s-ep.
 this tree-OBL cat-ABS LOC-sit-NEG
 The cat is not on this tree./*There is no cat on this tree.

Whenever definiteness cannot be distinguished by the presence/absence of case markers (which is the case with plural DPs and with QNPs), the sentence allows both interpretations:

(45) ʔə-xe-r mə $\text{ʃ}^w\text{efə-m}$ $\text{ʃ}^w\text{ə-ʔe-x-ep}$
 ram-PL-ABS this field-OBL LOC-EXIST-PL-NEG
 There are no rams in this field./The rams aren't in this field.

(46) $\text{mə ʃ}^w\text{efəm ʔəxer ʃ}^w\text{əʔexep}$
 There are no rams in this field./The rams aren't in this field.

When one seeks to address the question ‘which quantifiers are prohibited in the Pivot of the existential construction’, a difficulty arises. There is no such word order which is unambiguously interpreted as existential. The same is true of the more prohibitive dialect as well: while that dialect does have a word order that is exclusively locative (‘Pivot LocP Verb’), it doesn’t have an exclusively existential word order.

Suppose, now, that we’re looking to prove that the sentence ‘There are most sheep in the field’ is ungrammatical in Adyghe. This would be translated into Adyghe as *mə ʃ^wefəm melme anahəber jət* ‘In the field, most sheep are’. This sentence itself is NOT ungrammatical: it at least has a locative interpretation. However, it is extremely hard to detect whether it has an existential one.

Eliciting this would require asking the informant whether the sentence ‘There are most sheep in the field’ in the contact-language (meta-language⁸) is an adequate translation of the Adyghe stimulus. It seems that asking an informant to provide judgments on the ungrammatical sentences in meta-language is a very questionable method of elicitation. In my experience, such attempts have resulted in a variety of responses graded from ‘Yeah, it’s fine’ to an indignant ‘Can you say so in Russian?!’ (Russian was the meta-language for this study).

Therefore, even if some QNPs are in fact prohibited in the Pivot of the existential construction, it will be virtually undetectable through standard elicitation procedure.

The only quantifier which was judged ungrammatical in the sentence below is quantifier *pepč* ‘every’, which is disallowed in these constructions for other reasons – namely, its use with stative verbs is generally restricted and existential verbs are stative in Adyghe.

⁸ ‘Metalanguage’ in the sense of (Matthewson 2004), i.e., the language different from the object-language, that is used for elicitation.

- (47) **mə š^wefə-m** mel g^were /mel zərəzxe/ /mel lawəze
this field-OBL sheep some /sheep several /sheep a.number.of
 /mel-jə-tf /melə-be /zeç^ˈe mel /melme anahəber
 /sheep-LNK-5 /sheep-many /all sheep /sheep majority
 /melxe zeç^ˈerjə zə meləm neməç^ˈew
 /sheep-PL-ABS all 1 sheep-OBL except
 /mel-jə-pşə-m a-š^ˈəš^ˈ-ew blə-r /*mel pepč **jə-t**.
 /sheep-LNK-10-OBL their-part-ADV 7-ABS /sheep every **LOC-exist**
 There are some sheep/several sheep/a number of sheep/5 sheep/many
 sheep/all sheep/most sheep/all sheep except one/7 out of 10 sheep/*every
 sheep in the field.

2.3.1.4 Numerals and Modified Numerals

Exactly

Adyghe lacks the word ‘exactly’. Native speakers consider ‘*n Xs*’ the closest possible translation for ‘*exactly n Xs*’:

- (48) som-jə-b^w qə-s-jə-tə-**ɸ**
 ruble-LNK-9 DIR-1SG.IO-3SG.A-give-PST
 He gave me (exactly) 9 rubles.

Bilingual Adyghe children are reported to use the Russian word *rovno* for ‘exactly’ in their speech in Adyghe:

- (49) som-jə-b^w rovn-ew qə-s-jə-tə-**ɸ**
 ruble-LNK-9 exactly-ADV DIR-1SG.IO-3SG.A-give-PST
 He gave me exactly 9 rubles.

Just/Only

Adyghe has 3 counterparts of ‘only’: *nəʔep*, *zaq^we*, *q^wedəj*. Below there are several examples of their use. A detailed description is given in Section 2.6.6.

- (50) č^ˈeleježak^w-jə-š^ˈ nəʔep a wəpč^ˈe-m žewap
 pupil-LNK-3 only that question-OBL answer
 q-je-zə-tə-**ɸe-r** /*q-a-tə-**ɸ**
 DIR-OBL-REL.A-give-PST-ABS /*DIR-3PL.A-give-PST
 Only 3 students answered this question.
- (51) č^ˈeleje^wž-jə-š^ˈ nəʔep tʃə-škol ʔ^wef š^ˈə-zə-**še-re-r** /*š^ˈ-a-**še**
 teacher-LNK-3 only our-school work LOC-REL.A-do-DYN-ABS /*LOC-3PL.A-do
 Only 3 teachers work in our school
 (lit.: those who work in our school are only 3 teachers).

- (52) mə bol'nice-m vrač'-jə-ʔ^w nəʔep se-še-re-r
 this hospital-OBL doctor-LNK-2 only 1SG.A-know-DYN-ABS
 I know only 2 doctors in this hospital.
- (53) some zaq^we sjə-ʔ
 rubl only 1SG.POSS-have
 I have only one ruble.
- (54) sabəjə-m ə-nəbž'ə-r jələs-jə-ʔ^w q^wedəj (from Vodozhdokov (1960))
 child-OBL his-age-ABS year-LNK-2 only
 The child is only 2 years old.

A similar meaning 'just, in total' can be expressed by the adverb *zeč'emč'jə*:

- (55) tjə-ježape zeč'e-m-č'-jə č'elejekež-jə-š' ʔ^wef š'ə-zə-še-re-r
 our-school all-OBL-INST-& teacher-LNK-3 work LOC-REL.A-do-DYN-ABS
 Just 3 teachers work in our school.

Almost/Approximately

Adyghe doesn't have a D-quantifier for 'almost'. The closest alternative to 'almost' in Adyghe is *fedjəz* 'about/approximately', which can be analyzed as *fed-jə-z* 'to.be.like-LNK-1':

- (56) aslan mef-jə-x fedjəz wəne-m jə-sə-ʔ-ep
 Aslan day-LNK-6 about house-OBL OBL-sit-PST-NEG
 Aslan hasn't been at home for about 6 days.
- (57) txəl-jə-tf fedjəz sə-ze-žə-ʔ-ep
 book-LNK-5 about 1SG.ABS-REL.IO-read-PST-ABS
 I read approximately 5 books.

While the complement of *fedjəz* is not usually marked for case, there are cases when an overt case marker is found, and such cases show that *fedjəz* selects Oblique DPs:

- (58) səhat-jə-pše-m fedjəz ʔ^wef s-ša-ʔ-ep
 hour-LNK-10-OBL about work 1SG.A-do-PST
 I have worked for about 10 hours.
- (59) tfə>(*r) fedjəz qe-ḵ^wa-ʔ
 5>(*ABS) about DIR-go-PST
 About 5 (people) came.

fedjəz is incompatible with non-numeric quantifiers, such as 'no one' or 'all':

- (60) *zəparemjə/zəcemjə fedjəz jə-še-ʔ-ep mə zadač'e-r.
 noone approximately 3SG.A-do-PST-NEG this problem-ABS
 expected: Almost noone did this problem.

- (61) a. *zeč'erjə fedjəz qe-ķ^wa-ϕ-(ex).
 all approximately DIR-go-PST-(PL)
- b. nahəber qe-ķ^wa-ϕ.
 majority DIR-go-PST
 Almost everyone came.

Adyghe also has approximate cardinals, mentioned in Section 2.3.1. For numerals from one to ten, the template for forming an approximate numeral is: CARDINAL₁-TMP-je-CARDINAL₂-TMP, where *je* is 'or' (62a). When the source cardinals for the approximate are bigger than ten, the derivation involves coordination of the cardinals – either asyndetic, or using the conjunction *je* 'or' (62b). In colloquial speech, the latter strategy is also used for number below ten.

- (62) a. z-e-je-t^w-a-je b. pšəķ^wəze (je) pšəķ^wət^we
 1-TMP-or-2-TMP-or 11 or 12
 approximately, one to two approximately, eleven to twelve

The existential quantifier *g^were* 'some' can mean 'approximately' when it modifies a cardinal QNP:

- (63) sjə-aχš'alə som-jə-še g^were de-λə-š't
 my-wallet rubl-LNK-100 some LOC-lie-AUX
 There is about 100 rubles in my wallet.

Between 5 and 10

The QNP 'from ... to ...' consists of two postpositional phrases, and the noun quantified over can appear within either the first (64) or the second (65) postpositional phrase:

- (64) aš' ə-wəč'ə-ϕe-r asλan-jə-pλə-m š'jeϕež'aϕew xə-m nes
 he.OBL 3SG.A-kill-PST-ABL lion-LNK-4-OBL from 6-OBL to
 He killed 4-6 lions (lit.: He killed from 4 lions to 6).
- (65) š'ə-m š'jeϕež'aϕew šə⁹ blə-m nes psə j-e-š^wə
 3-OBL from horse 7-OBL to water 3SG.A-DYN-drink
 From 3 to 7 horses drink water (lit.: From 3 to 7 horses drink water).

⁹ šə 'horse' does not take the LNK morpheme that is usually used when merging a noun with a number.

Alternatively, the quantified noun can be an adjunct – as in (66), where the quantifier part, a coordinated PP, does not contain the restrictor, and the restrictor *č'elejeваž-ew* ‘teacher-ADV’ is marked with Adverbial case and adjoined to the sentence:

- (66) *zeɽʷəč'e-m tfə-m š'ekež'əwew pšə-m nes č'elejeваž-ew qe-kʷe-š't*
 meeting-OBL 5-OBL from 10-OBL to teacher-ADV DIR-GO-FUT
 From 5 to 10 teachers will come to the meeting (lit.: They will come to the meeting, being from 5 to 10, being teachers).

The coordinated PP ‘from n to m’ controls plural agreement:

- (67) *χʷəlfəw-jə-pɽə-m a-š'jekež'əwew jə-m nes qarɽan-xe-r a-λeβʷə-βe-x*
 man-LNK-4-OBL 3PL-from 8-OBL to tiger-PL-ABS 3PL.A-see-PST-PL
 From 4 to 8 men saw tigers.

More/Less: At most/At least

‘More/less’ is expressed with the comparative particle *nah* ‘COMP’ and a corresponding adjective (*be* ‘many’ or *mač'e* ‘few’). The complement of this phrase is a cardinal QNP marked Oblique:

- (68) *zare [ʒen-jə-tfə-m nah-mač'e]ABS ə-də-β*
 Zara dress-LNK-5-OBL COMP-few 3SG.A-sew-PST
 Zara sewed less than 5 dresses.
- (69) *[pšes-jə-ββʷə-m nahə-be]ABS zeɽʷəč'e-m qe-kʷa-βe-x*
 girl-LNK-9-OBL COMP-many meeting-OBL DIR-GO-PST-PL
 More than 9 girls came to the meeting.

The quantifiers *nahəbe* ‘more’ and *nahəbe-CM*¹⁰ ‘most/majority’ are derived from the same morphemes and have a similar form. The most crucial difference between them is that QNPs containing ‘more’ or ‘less’ aren’t marked with case (note lack of case marker on *nahəbe* in (70)) while those containing ‘most/majority’ are (note overt case marker on *nahəbe* in (71)). The same generalization applies to *nah-mač'e* COMP-few ‘less’ and *nah-mač'e-CM* COMP-few-CM ‘minority’.

- (70) *č'el-jə-blə-m nahə-be mə wəne-r a-šə-β*
 guy-LNK-7-OBL COMP-many this house-ABS 3PL.A-do-PST
 More than 7 guys were building this house.
- (71) *č'el-jə-blə-m nahə-be-m mə wəne-r a-šə-β*
 guy-LNK-7-OBL COMP-many-OBL this house-ABS 3PL.A-do-PST
 Most of the 7 guys were building this house.

¹⁰ CM – case marker.

Besides argument position, QNPs with modified numerals can appear in predicate position (see (72)), in which case the rest of the sentence becomes a relative clause (compare (72) with (73), where the same QNP occupies an argument position: notice final vowel reduction on the quantifier, which marks its predicative form in (72), and the difference in verbal prefixes – the Agent agreement slot in the predicate ‘make’ is inflected with relative pronoun *zə-* in (72), showing that it’s a relative clause, vs. agent marker *-a-* in (73)):

- (72) č’el-jə-bl-əm nah mač’ wəne-xe-r
 boy-LNK-7-OBL COMP few.PRED house-PL-ABS
 zə-fe-zə-šə-ž’ə-ɬe-r **QNP=Pred**
 RFL.IO-BEN-REL.A-make-REF-PST-ABS
- (73) č’el-jə-bl-əm nah mač’e wəne-xe-r
 boy-LNK-7-OBL COMP few house-PL-ABS
 zə-f-a-šə-ž’ə-ɬe-x **QNP=ARG**
 RFL.IO-BEN-3PL.A-make-REF-PST-PL
 Less than 7 boys built themselves a house.

In fact, decreasing QNPs are generally preferred in predicate positions and in some dialects it is the only position available for them.

When a QNP contains suffixal negation, it can only occupy predicate position:

- (74) a. č’el-jə-blə-m nahə-b-ep
 boy-LNK-7-OBL COMP-many-NEG
 wəne-xe-r zə-fe-zə-šə-ž’ə-ɬe-r
 house-PL-ABS RFL.IO-BEN-REL.A-make-REF-PST-ABS
- b. *č’el-jə-blə-m nahə-b-ep
 boy-LNK-7-OBL COMP-many-NEG
 wəne-xe-r zə-f-a-šə-ž’ə-ɬe-x
 house-PL-ABS RFL-BEN-3PL.A-make-REF-PST-PL
 Not more than 7 boys built themselves a house.

When a QNP is inflected with prefixal negation, this constraint is not found (see (75)–(76)).

In examples below the QNP is marked Adverbial, which means that it is adjoined to the clause. The restrictor noun is inside the QNP (otherwise the DP *šə-tfə-m* ‘horse-5-OBL’ would have been marked with Absolutive). Notice that plural agreement on the verb is still found, even though adverbial phrases in other contexts can’t control verb agreement:

- (75) šə-tfə-m nah mə-mač’-ew psə j-e-š^we-(x)
 horse-5-OBL COMP NEG-few-ADV water 3PL.A-OBL+DYN-drink-(PL)
 At least 5 horses are drinking water.

- (76) č'al-jə-tfə-m nah mə-b-ew a-r a-še
 boy-LNK-5-OBL COMP NEG-many-ADV that-ABS 3PL.A-know
 Not more than 5 children know that.

2.3.1.5 Value-Judgment Cardinals

The existential quantifier *pčabe* which can be interpreted as value-judgment cardinal, was discussed in detail in Section 2.3.1. Besides it, the value-judgment category includes the more commonly used *be* ‘many/much’ and *mač'e* ‘few/little’, and the less common *χ'əš'* ‘many’ and *teķ'w'e* ‘little’ (which is only compatible with non-count nouns – see (80a–b)).

- (77) waš^we-m ž^weβ^wa-be jə-t.
 sky-LOC star-many OBL-stand
 There are many stars in the sky.
- (78) q^waže-m pšeše χ'əš'e de-s.
 village-OBL girl many LOC-sit
 Many girls live in the village.
- (79) mə č'ale-r txəλ mač'e j-e-žə-β
 this boy-ABS book few 3SG.IO-OBL-read-PST
 This boy read few books.
- (80) a. k^wec teķ^w qə-se-t
 wheat little DIR-1SG.IO-give.IMV
 Give me a little wheat.
- b. *txəλ teķ^w qə-se-t
 book little DIR-1SG.IO-give.IMV
 Expected meaning: Give me a little of books.

There is a strong tendency among native speakers to favor decreasing QNPs in predicate position, which requires a considerable change to the structure of the sentence during translation. To avoid this, decreasing QNPs are sometimes translated with an antonymous QNP accompanied by negation on the main predicate:

- (81) pšeša-be-me žane a-də-β-ep
 girl-many-OBL+PL dress 3PL.A-sew-PST-NEG
 Few girls sewed dresses (lit.: It's not the case that many girls sewed dresses).

With respect to the a~e alternation, value-judgment cardinals behave like NP-internal lexical projections, i.e. they do not block it, but participate in it, leaving the NP boundary to their right. In (82), I demonstrate this using the noun /žene/ ‘dress’. When it forms the entire DP without any extra constituents, it undergoes the alternation. I also show this word with each of the value-

judgment cardinals and, for comparison, the same word with an adjective of a phonological structure similar to the cardinal:

- (82) *žane* *žena-čže* – *žena-be*
 dress dress-new dress-many
žene-čžəhe – *žene-χžəšže*
 dress-long dress-many
žene-daxe – *žene-mačže*
 dress-pretty dress-few

Value-judgment cardinals are incompatible with the plural marker *-xe-*, and for most speakers overt inflection with Absolutive is also considerably degraded. However, value-judgment cardinals, similarly to other existential quantifiers, can be inflected with *-me*, the fused marker for OBL+PL.

Value-judgment cardinals can be modified by simplex words, such as *s'e* 'too' and *dede* 'very'. *s'e* participates in the *a~e* alternation, just like an adjective, and undergoes this alternation itself when it is a penultimate syllable from the NP boundary, as in (85). *s'e* is a rare case: it clearly has properties of an adverb – it selects and modifies gradable adjectives and cardinals. This suggests that *a~e* alternation detects the NP-internal constituents (and not a particular syntactic category, such as Adjective).

- (83) *beže* *ba-š'e-me* *tjə-č'et-xe-r* *a-təɸ^wə*
 fox many-too-OBL+PL 1PL-chicken-PL-ABS 3PL.A-steal
 Too many foxes steal our chickens.
- (84) *pšeše* *meč'a-š'e-me* *č'em-xe-r* *a-š'ə-ɸ*
 girl few-too-OBL+PL COW-PL-ABS 3PL.A-milk-PST
 Too few girls milked the cows.
- (85) *stud'ent* *be-š'a-š'e* *ja-wəne-xe-m* *ɸ^we-žə-ɸe-x*
 student many-too-too 3PL-house-PL-OBL GO-REF-PST-PL
 Too many students went home.

As was discussed above (see Section 2.2.1), *dede* 'very' behaves as a lexical item unable to participate in the alternation:

- (86) *cəze-be-dede-me* *zeeparke-m* *š'e-č'e?a-ž'ə-ɸ*
 squirrel-many-very-OBL+PL ZOO-OBL LOC-run.away-REF-PST
 Very many squirrels ran away from the zoo.

'Not enough' is expressed by a predicative form with finite negation, so sentences with this quantifier have a cleft structure:

- (87) *k^wecə* *qe-χ^wə-ɸe-r* *je-q^wə-r-ep*
 wheat DIR-happen-PST-ABS OBL-lack-DYN-NEG
 Not enough wheat grew.

In Adyghe there are adverbs that can be linearized to the right (such as *š'e* ‘too’ and *dede* ‘very’). Those which have to be linearized to the left can be separated from the adjective they modify by the head noun. ‘Surprisingly’ is supposedly one example of such adverbs.¹¹ Another example would be *nah* (see Section 2.5.1).

- (88) *βεξεβ^wenew* *č'e-lejeβεža-be* *pčehazexahe-m* *qe-κ^wa-β*
 surprisingly teachers-many party-OBL DIR-go-PST
 Surprisingly many teachers came to the party

2.3.1.6 Interrogatives

As was mentioned before, the most commonly used strategy for questions in Adyghe is the cleft. ‘How many’ is expressed with the word *thapše*:

- (89) [aslan thapš]-a [mə čəγ čεβəm š'e-čəje-re-r]_{SUBJ}?
 lion how.many-Q this tree under LOC-sleep-DYN-ABS?
 How many lions are sleeping under this tree? (lit.: Those who are sleeping under this tree are how many lions?)
- (90) student thapš-a ekzamenə-r zə-tə-βε-r?
 student how.many-Q exam-ABS REL.A-give-PST-ABS
 How many students passed the exam?

‘Which’ can be expressed with either the adjectival interrogative *səd fede* ‘which’ (lit.: what like), which, unlike most other adjectives, is linearized to the left of the head noun (91), or a nominal interrogative *xet* ‘who’ or *səd* ‘what’, in which case the head noun is adjoined to the interrogative (92–93).

- (91) *səd* *fede* student ekzamen zə-tə-βε-xe-r?
 what like student exam REL.A-PASS-PST-PL-ABS
 Which students/Who of the students passed the exam?
- (92) student-ew het-a ekzamen zə-tə-βε-xe-r?
 student-ADV who-Q exam REL.A-PASS-PST-PL-ABS
 Which students passed the exam?
- (93) *šxənəβ^w-ew* *səd-a* *b-βehazərə-βε-r?*
 dish-ADV what-Q 2SG.A-cook-PST-ABS
 Which dishes did you cook?

A much less common strategy for forming wh-questions in Adyghe is leaving the wh-word in-situ and inflecting the main predicate with the

¹¹ I share an anonymous reviewer’s concern that it would be desirable to have a way to ensure *βεξεβ^wenew* is not a high-level adverb adjoining to a bigger constituent.

question marker *-a* ‘Q’ (compare (94) with (93), where the ‘Q’ marker inflects the wh-word and the predicate ‘cook’ is a relative clause; for more details on the two question strategies in Adyghe, see Sumbatova (2009)):

- (94) səd b-ʁəhazərə-ʁ-a
 what 2SG.A-COOK-PST-Q
 What did you cook?

2.3.1.7 Boolean Compounds

The most wide-spread way to make Boolean compounds is by adding conjunctions to the right edge of the phrases that are being coordinated. There are two particles that can serve this purpose: *-jə* and *-re*.

- (95) a. čʰel-jə-šʰ-re pšəš-jə-tʰ-re šxənə-r a-ʁəhazərə
 boy-LNK-3-& girl-LNK-2-& food-ABS 3PL.A-COOK
 b. čʰel-jə-šʰ-jə pšəš-jə-tʰ-jə šxənə-r a-ʁəhazərə
 boy-LNK-3-& girl-LNK-2-& food-ABS 3PL.A-COOK
 Three boys and two girls are cooking.

Matrix verbs can be coordinated without an overt conjunction:

- (96) tʰə-m nah-mačʰ-ep pšə-m nahə-b-ep student-ew
 2-ERG COMP-few-NEG 10-ERG COMP-many-NEG student-ADV
 qešəkʰwe qe-ķʰa-ʁe-r
 party DIR-go-PST-ABS
 No less than two and not more than ten students came to the party.
 (lit.: Students who came to the party weren’t fewer than two and weren’t more than ten.

2.3.1.8 Numeral Classifiers

The use of numeral classifiers in Adyghe is fairly minor. One reason for this may be that in Adyghe, non-count nouns always can be combined with a cardinal quantifier and interpreted in this case as *n units, traditionally associated with the substance*:

- (97) a. ps-jə-tf b. lə lawəze c. məl pepč
 water-LNK-5 meat several ice every
 5 bottles of water several pieces of meat every ice cube

The examples below demonstrate several Adyghe classifiers. The classified substance is expressed by a non-inflected noun, and the classifier appears to the right of it. Any additional quantifiers merge with the entire structure as a whole (i.e., a quantifier that has to be linearized to the left of its complement

is found to the left of the substance noun, not to the immediate left of the classifier – (99)):

- (98) a. sabən bzəϕ b. meq^wə hanž^w c. txələpə thap
 soap piece hay stack paper sheet
 a bar of soap a stack of hay a sheet of paper
- (99) zə q^weje hal
 1 cheese wedge
 a head of cheese

The classifier ‘head’ is used quite widely – it counts animals (100a), various vegetables (especially round ones, such as cabbage and onions, but not only them – e.g. (100b)).

- (100) a. hajwan šh-jə-š b. natrəf šh-jə-tf
 animal head-LNK-100 corn head-LNK-5
 100 head of cattle 5 ears of corn

The classifier *ce* ‘tooth’ is used with mass nouns to mean small particles of various substances:

- (101) a. weš^wxə-ce b. k^wecə-ce c. wesə-ce
 rain-tooth wheat-tooth snow-tooth
 a drop of rain a kernel of wheat a snowflake

Classifiers can be used with count nouns too – see (100) and (102):

- (102) student nebgər-jə-pš
 student person-LNK-10
 ten students

2.3.1.9 Container Expressions

The syntax of container phrases is similar to that of classifiers: the substance noun is uninflected and precedes the container:

- (103) sane bešereb-jə-ʈ^w
 wine bottle-LNK-2
 2 bottles of wine

Semantically, however, containers seem to function just a unit of measure, not necessarily including the container itself. The following sentences are judged as natural (notice that (105) doesn’t necessarily mean that there are bottles

in the jug, most probable reading is that there is wine of the stated quantity in the jug):

- (104) mə χedenə-m psə stekan jə-fe-š't
 this sponge-OBL water glass LOC-fit-AUX
 This sponge holds a glass of water.
- (105) mə g^weg^wenə-m sane bešereb-jə-tf jə-t.
 this jug-OBL wine bottle-LNK-5 LOC-stand
 There are 5 bottles of water in this jug.

2.3.1.10 Measure Phrases

Traditionally Adyghe people used native measure units, such as steps and fingers. However, in contemporary speech, the words used for measurements are exclusively Russian loanwords:

- (106) a. š'e litr b. šəβ^w kilogram
 milk litre salt kilogram
 a liter of milk a kilo of salt

2.3.1.11 Units of Time and Distance

Units of time and distance have the same structure as other QNPs. They can occupy various positions in the sentence: arguments (107–108), Instrumental adjuncts (109–110), temporal adjuncts (111–112). The latter are derived from QNPs denoting periods of time with the morpheme *-(r)e*.

- (107) se kilom'etr-jə-j Ø-s-k^wə-βe.
 I kilometer-LNK-8 3PL.ABS-1SG.A-go(TR)-PST
 I walked 8 km.
- (108) thamafe-m mef-jə-bl jə-t
 week-OBL day-LNK-7 OBL-stand
 There are 7 days in a week.
- (109) aš' mef-jə-blə-č'e qə-βezež'ə-š't.
 he day-LNK-7-INST DIR-return-FUT
 He will return in 7 days.
- (110) m'etr-jə-še-č'e t^wəč'an š'ə-t.
 meter-LNK-100-after store LOC-stand
 There is a store in 100 m.
- (111) se səhat-jə-pš-e sə-čəja-β
 I hour-LNK-10-TMP 1SG.ABS-sleep-PST
 I slept 10 hours.

- (112) azamat thamaf-jə-š'-e mə ʔ^wef š'-jə-ʃa-ɸ
 Azamat week-LNK-3-TMP this work LOC-3SG.A-do-PST
 Azamat has been working here for 3 weeks.
- (113) hatəɸ^wəž'əḵ^waje qəš'jekež'aɸew hak^wəɾənehable nes
 Hatazhukay from Hakurinokhabl to
 kilom'etr-jə-tf me-χ^wə
 kilometer-LNK-5 DYN-happen
 Hatažukay is 5 km from Hakurinohabl.
- (114) mə č'aler santim'etr-jə-x-č'e se nahjə nah jən.
 this boy centimeters-LNK-6-INST I then COMP tall
 This boy is 6 cm taller than me.

2.3.2 A-Quantifiers

Most existential A-quantifiers are derived from D-quantifiers with the morpheme *-(r)e*. It has the form *-e* with cardinals from 1 to 10 (115) and the form *-re* in all other cases (i.e., cardinals above 10 and non-cardinal quantifiers (116)).

- (115) se adəgeje-m ʔ^w-e sə-š'ə-ʔa-ɸ
 I Adygheja-OBL 2-TMP 1SG.ABS-LOC-exist-PST
 I've been to the Adyghe Republic twice.
- (116) se be-(dede)-re /ʔ^weč'ə-re xə-m sə-ḵ^wa-ɸ
 I many-(very)-TMP /20-TMP sea-OBL 1SG.ABS-go-PST
 I've been to the seaside (very) many times/twenty times.

'Not very many times' can be expressed with a quantifier derived from the D-quantifier *mač'e* 'few':

- (117) maše mač'e-re /mač'-ew me-səmaže
 Masha few-TMP /few-ADV DYN-sick
 Masha is rarely sick.

However, the preferred way of expressing this idea is with a quantifier 'often' and negation on the main predicate:

- (118) maše be-re səmaže-r-ep
 Masha many-TMP sick-DYN-NEG
 Masha is rarely sick.

- (119) sjə-pč'en-xe-m sjə-^wəne^wə-m jə-qebasqe
 my-goat-PL-OBL my-neighbour-OBL his-cabbage
 aš' fed-ew be-re a-šxə-^w-ep.
 that resemble-ADV many-TMP 3PL.A-eat-PST-NEG
 My goats eat my neighbour's cabbage not so often.

Adyghe also has an existential A-quantifier *zeg^werem* 'once', which is derived from quantifiers *zə* 'one' and *g^were* 'several':

- (120) z-e-g^were-m aš' wəramə-m s-ə-šə-ʔ^wəč' a-^w
 one-TMP-SOME-OBL he.OBL street-OBL 1SG.ABS-3SG.OBL-LOC-meet-PST
 Once I met him on the street.

This hypothesis is supported by examples like (121): when an A-quantifier is derived from a D-quantifier which contains *zə* and a modifier (in this case, *zaq^we* 'only.ADJ'), the TMP morpheme attaches directly to *zə*, leaving the modifier to its right:

- (121) se parašutə-m-č'e z-e zaq^we nəʔep
 I parachute-OBL-INST 1-TMP only only
 sə-qə-ze-rje-pč'e-xə-^w-e-r
 1SG.ABS-DIR-REL.TEMP-OBL-jump-DOWN-PST-ABS
 I parachuted only once.

g^were 'some' syntactically behaves like an adjective, therefore, it is expected that it will abide the same word order as *zaq^we* 'only.ADJ'.

Another existential A-quantifier in Adyghe is *za^were* 'sometimes'. Synchronically, it is monomorphemic.

- (122) se za^were š'ežə^we-m əwəž s-e-čəje
 I sometimes noon-OBL after 1SG.ABS-DYN-sleep
 I sometimes sleep after lunch.

Even though in examples above *-(r)e* almost always corresponds to the word 'times' in translation, it would be inadequate to interpret it this way: the functions of this morpheme are more varied, deriving temporal adjuncts from a wide range of nouns:

- (123) sjə-^wəne^wə-m be-re pč'edəž'ə-re wəcə-r j-e-wəpč'e.
 my-neighbour-OBL many-TMP morning-TMP grass-ABS 3SG.A-DYN-scythe
 My neighbour frequently scythes the grass in the morning.

- (124) žə-re nes ar məš' šə-ʔ (from Vodozhdokov (1960))
 now-TMP until he here LOC-exist
 He's still here.
- (125) mez-jə-bɛ^wə-re ə-ʔəɛə-ɛ (from Panesh (2007))
 month-LNK-9-TMP 3SG.A-keep-PST
 (She) kept it for 9 months.

It is possible that this *-(r)e* is related to *-re* which derives adjectives from certain nouns: *njepe* 'today' – *njepe-re* 'today's (ADJ)', however, this question needs further investigation.

All existential A-Quantifiers are compatible with stative predicates:

- (126) zare zaɛ^were tjə-hač'e
 Zara sometimes 1SG.POSS-guest
 Zara sometimes/often comes over as a guest.
- (127) aslan pɭ-e tamada-ɛ
 Aslan 4-TMP toastmaster-PST
 Aslan has been a toastmaster 4 times.
- (128) se be-re sə-č'efənč
 you many-TMP 2SG.ABS-sad
 I'm often sad.

All words for 'never' are NPIs derived with the particle *-jə*. The sources for this derivation do not form a natural class: 'never' may be derived from existential quantifier *zəce* 'the only one', question word *sədjəɛ^we* 'when', universal A-quantifier *jeɛaše* 'all one's life'.

- (129) se ar zəce-č'-jə qə-z-d-jə-ʔa-re-p
 I he only-INST-& DIR-1SG.IO-COM-3SG.A-help-DYN-NEG
 He never helps me.
- (130) sjə-thamate baɣsəme š'ežəɛ^we-r qeməsew
 my-boss alcohol noon-ABS before
 sədjəɛ^we-č'-jə /jeɛaše-m-jə j-e-š^we-re-p
 when-INST-& /all.life-OBL-& 3SG.IO-OBL-drink-DYN-NEG
 My boss never drinks before noon.

2.4 Generalized Universal (Co-intersective) Quantifiers

2.4.1 D-Quantifiers

Adyghe has a large array of universal D-quantifiers:

- *zeč'e* 'all' – collective universal quantifier, it appears to the left of its complement and is compatible with inflections for case and number; it also has a floating counterpart – *zeč'erjə* 'all-ABS-&'/ *zeč'emjə* 'all-OBL-&';
- *pstew(rjə)* – collective universal quantifier, which for many speakers is a generic quantifier;
- *zere...-ew* – circumfixal universal quantifier that selects singular objects (e.g., 'a strawberry') or finite sets (e.g., '3 strawberries');
- *psaw/psew* 'whole';
- *pepč* 'every', universal distributive quantifier;
- *qes* 'every', universal distributive quantifier which can only appear in temporal adjuncts;
- *šhaž* 'every' – technically, it isn't a D-quantifier, it is a key-distributive adverb which is most common with null plural subjects, but most speakers also allow the subject position in this case to be filled with an overt DP.

Below are some examples:

- (131) č'etəw-xe-r zeč'e-r-jə jež'aš^we-x-ep
 cat-PL-ABS all-ABS-& gray-PL-NEG
 Not all cats are gray.
- (132) zeč'e student-xe-m nebyər-jə-ɬ^w neməč'ew ekzamenə-r a-tə-ɸ
 all student-PL-OBL person-LNK-2 except exam-ABS 3PL.A-pass-PST
 All students except two passed the exam.
- (133) wəsaḵ^we-xe-r zeč'e-r-jə weš^weg^wə-m š'ə-bəbə-x
 poet-PL-ABS all-ABS-& sky-OBL LOC-fly-PL
 All poets daydream.
- (134) bzəlfəḵe pstew-m-jə š'əḅən daxe-xe-r ja-č'as
 woman all-OBL-& thing beautiful-PL-ABS 3PL.POSS -like
 All women (in the world) like beautiful things.
- (135) zere-txəλ-pšəḵ^wəš'-ew qa-šte
 all-book-13-all DIR-take.IMV
 Take all 13 books.
- (136) txəλ psewə-r sə-žə-ḵe
 book whole-ABS 1SG.A-read-PST
 I read the entire book.

- (137) student pepč wəse q-ə-txə-ɤ
 student every poem DIR-3SG.A-write-PST
 Every student wrote a poem.
- (138) zeč'e cəfre-xe-r še-m nahə-b zə-qawəme-m neməč'ew
 all number-PL-ABS 100-OBL COMP-many 1-several-OBL except
 All except several numbers are bigger than 100.
- (139) thamafe qes məjek^wape s-e-ḱ^we.
 week every Maykop 1SG.ABS-DYN-go
 Every week I go to Maykop.

Coordination of the restrictor NPs within a QNP is extremely rare because most quantifiers select for a constituent smaller than one to which a conjunction can attach. Therefore, the only case of conjoined restrictors is found with floating quantifiers *zeč'emjə/zeč'erjə* 'all':

- (140) a. bzəlfəke-xe-m-jə sabəj-xe-m-jə zeč'e-m-jə qale-r
 woman-PL-OBL-& child-PL-OBL-& all-OBL-& city-ABS
 q-a-byəna-ɤ
 DIR-3PL.A-leave-PST
- b. bzəlfəke-xe-m-re sabəj-xe-m-re zeč'e-m-jə qale-r
 woman-PL-OBL-& child-PL-OBL-& all-OBL-& city-ABS
 q-a-byəna-ɤ
 DIR-3PL.A-leave-PST
 All women and children left the city/
 *Everyone who was both a woman and a child left the city.

With other quantifiers, the smallest constituent that can be coordinated is the entire QNP:

- (141) bzəlfəke pepč-re sabəj pepč-re qale-r q-a-byəna-ɤ
 woman every-& child every-& city-ABS DIR-3PL.A-leave-PST
 Every woman and every child left the city.
- (142) sabəj de^wə-xe-m pč'əhe qes-jə, pč'edəž' qes-jə
 child good-PL-OBL evening every-& morning every-&
 a ce-xe-r a-ləč'ə
 their tooth-PL-ABS 3PL.A-clean
 Good children brush their teeth every morning and every evening.

2.4.2 A-Quantifiers

Some QNPs with D-quantifiers can occupy adjunct position and thus function as A-quantifiers:

- (143) se mafe qes /mafe pepč škole-m avtobus-č'e se-ḱ^we
 I day every /day every school-OBL bus-INST 1SG.ABS-go
 I always/every day go to school by bus.

These two quantifiers, *pepč* and *qes*, can select both for nouns and verbs. One of the Adyghe dialects prohibits any inflection on *qes*, while another prefers *qes* to be inflected. Also, some informants prohibit *pepč* with stative verbs, but this pattern is far from being dominant.

- (144) se sə-səmažə qes /qes-m-jə /%pepč s-šəpχ^wə
 I 1SG.ABS-sick every /every-OBL-& / every my-sister
 qə-s-fe-pš'erəha
 DIR-1SG.IO-BEN-COOK
 Every time I'm sick, my sister cooks for me.

These quantifiers, though do allow agreement prefixes (144), dynamicity marker (146) and certain suffixes (e.g., Reflexive – (145)), are incompatible with tense inflections (146)–(147).

- (145) s-šə q-e-ķ^we-ž'ə qes se ə-šxə-š'tə-r fe-se-βəhazə
 1SG.PR-brother DIR-OBL-go-REF every I 3SG.A-eat-FUT-ABS BEN-1SG.A-cook
 Every time my brother comes back home, I cook for him.

- (146) aš' əpeč'e əš zəg^were-m (ma)-ķ^we pepč/ *ķ^wa-β pepč,
 it before brother some-OBL (DYN)-go every/ *go-PST every
 pšaše-r βə-š'təβe, žə βə-žə-r-ep
 girl-ABS cry-IMF now cry-REF-DYN-NEG
 Before, when her brother went somewhere, the girl used to cry, but now she doesn't.

- (147) ahmad tja-hač'e qes /*tja-hač'a-β qes
 Ahmad our-guest every /*our-guest-PST every
 ar sabəj-xe-m a-de-žeg^wə-š'təβe
 he children-PL-OBL 3PL.IO-COM-play-IMF
 Every time Ahmad was our guest, he played with the children.

Other universal A-quantifiers include:

- the auxiliary *zəpət*:

- (148) se pč'edəž'-re kofe s-j-e-š^we-zəpət.
 I morning-TMP coffee 1SG.ABS-3SG.IO-OBL-drink-always
 I always drink coffee in the morning.

- (149) əpere thamafe-m sə-de-zəpətə-β
 last week-OBL 1SG.ABS-sew-always-PST
 I spent all last week sewing.

- A-quantifiers that behave as NPIs under sentential negation (see Section 2.3.2), but in declarative sentences function as universal quantifiers: *sədjəβ^w-(eč')*-*jə* 'when-(INST)-&' and *jəβaš-(jə)* 'all.life-&'.

- (150) se sədjəb^we-č'-jə pč'edəž'-re kofe s-j-e-š^we.
 I when-INST-& morning-TMP coffee 1SG.ABS-3SG.IO-OBL-drink
 I always drink coffee in the morning.
- (151) aš' sədjəb^w-jə ə-g^wə r-j-e-ha ə-šxə-re-r
 he.OBL when-& his-heart LOC-3SG.A-DYN-carry 3SG.A-eat-DYN-ABS
 He always likes what he eats.
- (152) nurəjet jəbaše-m ma-de
 Nuriət all.life-OBL DYN-sew
 Nuriət has sewn all her life.

It is important to note that *jəbaše* differs from other universal A-quantifiers in that its restrictor cannot be constrained by another temporal adjunct, which suggests that its meaning is more closely captured by the translation ‘all one’s life’ rather than by ‘always’:

- (153) əpere thamafe-m rjenew /*jəbaše-m sə-da-βe
 last week-OBL always /*all.life-OBL 1SG.ABS-sew-PST
 I spent all last week sewing.
 (lit.: Last week, I always sewed/*Last week, I sewed all my life.)

- *rjene* ‘entire’ which can function as an adjective with the noun *mafe* ‘day’ or as an adverb:

- (154) mafe rjenə-m aš' ʔ^wef ə-ša-β
 day entire-OBL he.OBL work 3SG.A-do-PST
 He worked all day.
- (155) se š'ežəb^we-wəžə-m se-čəje rjenew
 I noon-after-OBL 1SG.ABS-sleep always
 I always sleep in the afternoon.

Moreover, some speakers report that *be-re* ‘many-TMP’ (see e.g. (116)) allows a universal interpretation.

2.4.3 Forming Complex Universal Quantifiers

Quantifiers that behave as free-choice items can be formed from question words with the particle *-jə* or *-re* (less common):

- (156) xet-jə qa-š'e
 who-& DIR-bring.IMV
 Bring anyone.

- (157) səd-jə qə-se-t
 what-& DIR-1SG.IO-give.IMV
 Give me anything.
- (158) səd fede-re č'etəw-jə cəʁ^we-me ja-šak^we
 what like-DYN cat-& mouse-OBL+PL 3PL.IO+OBL+DYN-hunt
 Any cat hunts mice.
- (159) a č'ale-r sədjəʁ^w-jə x-e-čəje.
 that boy-ABS when-& LOC-DYN-sleep
 That boy falls asleep all the time.
- (160) a č'ale-r təd-jə š'-e-čəje.
 that boy-ABS where-& LOC-DYN-sleep
 That boy falls asleep everywhere.
- (161) sədjəʁ^we-m-jə qa-k^we
 when-OBL-& DIR-go.IMV
 Come any time.
- (162) mə-š' fede q^waje-r təde-č'-jə qə-š'ə-p-š'efə-n
 this-OBL like cheese-ABS where-INST-& DIR-LOC-2SG.A-buy-POT
 p-λeč'ə-š't
 2SG.A-can-FUT
 Such cheese you can buy anywhere.
- (163) a-r sədewš'tew-jə qaš^we-n jə-λeč'ə
 he-ABS how-& dance-POT OBL-can
 He can dance in any manner.

Universal quantifiers can't be derived from *thapšə* 'how many'. Adyghe lacks a question word 'why'.

2.5 Proportional Quantifiers

2.5.1 D-Quantifiers

The proportional quantifiers *nahəbe* 'most', *nəq^we* 'half' and percents take Oblique DPs as complements:

- (164) txəλ-ew aš' qə-š'a-ʁe-m nahə-be-r adəʁa-bza-ʁ
 book-ADV he DIR-bring-PST-OBL COMP-many-ABS Adyghe-language-PST
 Most of the books that he brought were in Adyghe.
- (165) se we wjə-txəλə-m ə-nəq^we s-j-e-žə-ʁ
 I you your-book-OBL 3SG.POSS-half 1SG.ABS-3SG.IO-OBL-read-PST
 I read half of your books.

- (166) č'ale-xe-m procent ʃ^weč'jəpλ a-še bz-jə-ʃ^w
 child-PL-OBL percent 80 3PL.A-know language-LNK-2
 80% of children know 2 languages.

Fractions appear on the left periphery of the QNP (and some speakers allow the same position for other proportional quantifiers as well – see (168)):

- (167) š'a-m jə-ʃ^w-a-ne mel-xe-r š^wəçe-x
 3-OBL 3SG.POSS-2-TMP-FRC sheep-PL-ABS black-PL
 2/3 of the sheep are black.
- (168) nahəbe sabəj-xe-r me-g^wəš^we-x jane-jate-xe-r
 most child-PL-ABS DYN-rejoice-PL father-mother-PL-ABS
 z-a-λeβ^wə-č'e
 REL.TEMP-3PL.A-see-INST
 Most children are happy when they see their parents.
- (169) zeč'e-m-jə jə-zə-pšə-ne-(m) neməč' məʔerəse čəg-me
 all-OBL-& 3SG.POSS-1-10-FRC-(OBL) except apple tree-OBL+PL
 q-a-hə-β mə bžəhe-m
 DIR-3PL.A-bring-PST this fall-OBL
 All but 1/10 of the apple trees bore apples this fall.

The restrictor noun can also be adjoined to the sentence (compare (170) with (166)):

- (170) procent ʃ^weč'jəpλ č'ale-x-ew a-še bz-jə-ʃ^wə.
 percent 80 child-PL-ADV 3PL.A-know language-LNK-2
 80 percent of children know 2 languages.

Phrases like 'n NPs out of x' are translated with the partitive (for details on partitive construction see Section 2.6.7):

- (171) nebyər-jə-pšə-m š'aš'-ew š'a zaq^wə /q^wedəj xə-m k^we-š't
 person-LNK-10-OBL of-ADV 3 only /only sea-OBL go-FUT
 Only 3 out of 10 people will go to the sea.
- (172) nebyər-jə-pšə-m š'aš'-ew č'eleježek^w-jə-ʃ^wə nahjə nahə-b-ep
 person-LNK-10-OBL of-ADV student-LNK-2 than COMP-many-NEG
 zə-še-re-r mə qe-χ^wə-βe-r
 REL.A-know-DYN-ABS this DIR-happen-PST-ABS
 Not more than 2 students out of 10 know about what happened.

2.5.2 A-Quantifiers

Most proportional A-quantifiers have the same structure as existential/value-judgment A-quantifiers. They are derived from the D-quantifiers *be* 'many' and

mač'e ‘few’ with morpheme *-re* ‘TMP’ or Adverbial case *-ew*. Also, A-quantifiers that seem to belong to different classes are reported by native speakers to have an interpretation as proportional (i.e., *zag^were* can mean ‘sometimes’ and ‘often’, and *rjenuw* can mean ‘always’ and ‘often’).

(173) ar za^were /be-re mašine-č'e ježape-m q-e-ḱ^we.
 he.ABS often /many-TMP car-INST school-OBL DIR-DYN-go
 He often drives to school.

(174) se rjenuw školə-m λes-ew s-e-ḱ^we
 I always/often school-ERG on.foot-ADV 1SG.ABS-DYN-go
 I always/often go to school on foot.

(175) se nahə-be-(re)-m-č'e ž'-ew sə-q-e-težə.
 I COMP-many-(TMP)-OBL-INST early-ADV 1SG.ABS-DIR-DYN-get.up
 I usually get up early.

(176) aslan voskr'es'enie-re muz'ejə-m aš' fed-ew ḱ^we-r-ep
 Aslan Sunday-TMP museum-OBL that like-ADV go-DYN-NEG
 Aslan seldom goes to the museum on Sundays (lit.: Aslan doesn't go to the museum on Sundays that much).

Proportional A-quantifiers are compatible with stative predicates:

(177) χ^wəlfəḱe-xe-r nahə-be-(re)-m-č'e bzəlfəḱe-xe-m nahjə
 man-PL-ABS COMP-many-(TMP)-OBL-INST woman-PL-OBL than
 nah jənə-x
 COMP tall-PL
 Men are usually taller than women.

2.6 Follow-Up Questions

2.6.1 Some Background

2.6.1.1 Definite NPs

Adyghe has three adnominal demonstratives, which require a case marker on the DP: *mə* ‘this’ (proximal), *m^we* ‘this’ (medial), *a* ‘that’ (distal).

Adyghe lacks a distinct definite article. Definiteness is marked with the presence of Absolutive/Oblique case markers (see Section 2.2).

As was mentioned in the introduction, possessive prefixes on the NP generally block overt case markers – a constraint which gets weaker with the addition of modifiers to the right periphery of the NP.

Though proper nouns in Adyghe are generally monomorphemic, there are names that include common nouns such as *q^we* ‘son’, *pš’ə* ‘prince’ (178) and names derived from common noun phrases (179). Names that contain common nouns are usually inflected for case.

- (178) a. *deβ^wetλə-q^wə* b. *q^wənčəq^weq^we-pš’ə-r*
 Degotly-SON Qončyqoqo-prince-ABS
 Degotlyqo Qonchyqoqopshchi
- (179) *š^wə-mafe-r*
 horseman-good-ABS
 Shumafe

2.6.1.2 Generic NPs

Generic NPs are morphologically realized as definites: they obligatorily bear an Absolutive/Oblique case marker. They can take either singular or plural number.

As stated in Section 2.2, when plural marker on the NP is overtly realized, the case marker also must be overt, so the cases of generic plural NPs don’t present reliable evidence for the case marker requirement.

- (180) a. *he-xe-*(r)* *me-caqe-x*
 dog-PL-ABS DYN-bite-PL
- b. *he-*(r)* *me-caqe*
 dog-ABS DYN-bite
 Dogs bite.
- (181) a. *qepλan-xe-*(m)* *lə* *a-šxə*
 tiger-PL-OBL meat 3PL.A+DYN-eat
- b. *qepλane-*(m)* *lə* *j-e-šxə*
 tiger-OBL meat 3SG.A-DYN-eat
 Tigers eat meat.
- (182) *dinozavre-xe-r* *š’ə-ʔe-ž’-x-ep*
 dinosaur-PL-ABS LOC-exist-REF-PL-NEG
 Dinosaurs are extinct. (lit.: Dinosaurs don’t exist any more)

2.6.2 Monomorphemic and Simplex Quantifiers

The Table 2.1 lists all monomorphemic Adyghe quantifiers:

As discussed in fn. 2, there are no criteria for determining which quantifiers form a single phonological word, which is why Table 2.2 is restricted to monomorphemic quantifiers.

Table 2.2 Adyghe monomorphemic quantifiers

	Existential	Universal	Proportional
D-Qs	zə ‘1’ (and other numerals); g ^w ere ‘some’; zawəle/ lawəze /qawəme ‘several’; pčəbe ‘a number of’; zaq ^w e ‘only.ADJ’; be ‘many’; χ ^w əš ‘many’; mač ^w e ‘few/little’; † ^w ek ^w ‘little’	zeč ^w e ‘all’ psew/psaw ‘entire’ pstew ‘all’	–
D/A-Qs	–	pepč /qes /šhaž ‘every’	–
A-Qs	zəb ^w ere ‘sometimes’	jəkaše ‘all.life’	–

A concern has been raised that quantifiers *lawəze*, *zawəle*, *zaq^we*, *zeč^we* may not be monomorphemic, but could be instead derived in some way from *zə* ‘one’ and some other material. However, such an analysis does not seem to be well grounded. Morphemes *lawə-*, *-(a)wəle* are not attested anywhere else; *q^we* is, in fact, an existing word that has three meanings: ‘pig’, ‘son’, ‘valley’ (see Shaov (1975, 169). *zeč^we* ‘all’ can indeed be divided into *z-e-č^we* ‘one-TMP-INST’, however, under such analysis, it would be difficult to come up with a compositional semantics for the form. Additionally, such hypothesis would need to postulate that a word that is already case marked can be case marked again, which would clearly be the case for the forms *z-e-č^we-r-jə* ‘one-TMP-INST-ABS-&’, *ze-č^we-m-jə* ‘one-TMP-INST-OBL-&’, *ze-č^we-m-č^w-jə* ‘one-TMP-INST-OBL-INST-&’. While Adyghe does indeed allow the combination of Oblique with Instrumental, no other instances of case stacking is allowed.

The facts discussed above suggest that even if the quantifiers in question were complex diachronically, in the contemporary language, they should be analyzed as monomorphemic.

Adyghe has several monomorphemic universal quantifiers. It also has a monomorphemic quantifier ‘one’ and several simplex value-judgment quantifiers, two of which are translated as ‘many’.

Adyghe doesn’t have simplex proportional quantifiers. The quantifier ‘most’ is built from a comparative: *(a)-nahə-be-r* ‘(3PL)-COMP-many-ABS’.

Adyghe not only lacks a determiner translating ‘no’, but also lacks an A-quantifier ‘never’ – in both cases NPIs accompanied by sentential negation are used.

The vast majority of A-quantifiers are derived from D-quantifiers. This derivation usually utilizes either the suffix *-(r)e* ‘TMP’ (e.g., *bere* ‘many-TMP’) or the adverbial case marker (e.g., *mač^w-ew* ‘few-ADV’).

2.6.2.1 Selectional Properties of D-Quantifiers

As was discussed earlier, Adyghe mass nouns can be used with quantifiers which semantically require count nouns, in which case the mass noun is interpreted as *units traditionally associated with the quantified substance*:

- (183) a. ps-jə-tf b. lə lawəze c. məl pepč
 water-LNK-5 meat several ice every
 5 bottles of water several pieces of meat every ice cube

Therefore, there is no quantifier that can't select a non-count noun. However, there are quantifiers that can't select a count noun, e.g. ʔək^w 'little':

- (184) š'e ʔək^w BUT: *txəl ʔək^wə
 milk little book little
 a little milk #a little books

It's difficult to detect which quantifiers select for plural or singular nouns, because number marking is optional in Adyghe and because most quantifiers select for constituents small enough to not be inflected for number. The only Adyghe quantifiers that select a constituent big enough to be number-marked are proportional quantifiers *nahəbe-CM* 'majority' and *nahmač'e-CM* 'minority', and the universal quantifier *zeč'e* 'all'. They all, however, are equally compatible with both plural and singular nouns.

- (185) a. zeč'e student-xe-r qe-k^wa-Ɂ
 all student-PL-ABS DIR-go-PST
 All students came.
- b. zeč'e čəle-r qə-ze^wəč'a-Ɂ
 all town-ABS DIR-gather-PST
 The entire town gathered.
- (186) a. č'ale-me a-nahəbe-m wəne a-šə-Ɂ
 boy-OBL+PL 3PL-majority-OBL house 3PL.A-do-PST
 Most of the guys built houses.
- b. χərbəzə-m anahəbe-r se s-šxə-Ɂ
 watermelon-OBL majority-ABS I 1SG.A-eat-PST
 I ate most of the watermelon.

Other quantifiers select for bare NPs – i.e., a constituent too small to contain a plural inflection. It is not, however, selection for singular per se because these quantifiers can select numeral QNPs:

- (187) a. zere-wən-ew zere-wən-jə-š'-ew
 \$-house-\$ADV(all)¹² \$-house-LNK-3-\$ADV(all)
 entire house all 3 houses

¹² Circumfixes and split morphemes are glossed so that every part of them is marked with '\$' and the translation of the entire morpheme's meaning is given in parenthesis after the last part of the morpheme. If one of the parts forming the split morpheme can be translated on its own, the translation is given right after the \$ sign.

b.	qεkεkε	pepč	qεkεkε-jə-š'	pepč
	flower	every	flower-LNK-3	every
	every flower		every 3 flowers	

The animate/inanimate distinction is irrelevant for the selectional properties of Adyghe quantifiers.

A final question that needs to be addressed given the typological properties of Adyghe is the A/D quantifier distinction.

Adyghe is a polysynthetic language, typologically very reminiscent of Salish languages (see discussion in Lander and Testelefs (2006) and references therein). The distinction between syntactic categories is extremely weak. In fact, any noun can be used as a predicate and predicates can be used as nouns without extra derivations (I'm repeating examples (1)–(2)):

(188)	mə	č'ale-m	jə-nəbžεk ^w	qe-k ^w a-ε
	this	boy-OBL	his-friend	DIR-go-PST
	This boy's friend came.			

(189)	qe-k ^w a-εe-r	mə	č'ale-m	jə-nəbžεk ^w a-ε
	DIR-go-PST-ABS	this	boy-OBL	his-friend-PST
	The one who came was this boy's friend.			

The issue of quantification in languages with a weak verb/noun distinction has a long history (Jelinek (1995), Matthewson (2001), Davis (2009), to name a few) and is a matter of current debate (see Davis (2010) for a summary of the issues, as well as a comprehensive list of references).

Although the full debate is beyond the scope of this paper, I would like to bring up one relevant issue here.

In a language where nouns and verbs do not differ much, one would expect quantifiers to be neutral with respect to the D- vs. A-quantifier distinction. And such quantifiers are indeed found in Adyghe: *qes* and *pepč* can select for either nouns or verbs.

Surprisingly, all other quantifiers have very strict syntactic constraints. Aside from *qes* and *pepč*, all other quantifiers fall strictly into either the A- or the D-category. 'Exclusive' D-quantifiers can't select a predicate:

(190)	s-šə	qe-k ^w e-ž'ə	qes	/pepč	/*pstewmjə	/*zeč'emjə	/*g ^w ere
	my-brother	DIR-go-REF	every	/every	/*all	/*all	/*some
	/*lawəze	se	ə-šxə-š'tə-r	f-e-se-εεhazərə			
	/*several	I	3SG.A-eat-FUT-ABS	BEN-DYN-1SG.A-cook			
	Every time my brother comes back home, I cook for him.						

Similarly, ‘exclusive’ A-quantifiers can’t quantify over entities:

- (191) aš’ sədəb^wjə ə-g^wə rjeħa ə-šxə-re-r
 he always 3SG-heart like 3SG.A-eat-PRED-ABS
 He always likes what he eats./*He likes everything that he eats.

The selectional properties of quantifiers suggest that Adyghe does indeed have different syntactic categories which are relevant to quantifier selection.

2.6.3 Decreasing QNPs: Forming Decreasing QNPs – NPI Licensing

Decreasing QNPs can be built using the D-quantifier *mač’e* ‘few’ and its derivative *nah mač’e* ‘less’. Neither in predicate (192a), nor in argument position (192b) can such QNPs license an NPI:

- (192) a. *stud’ent-jə-š’ə-m nah mač’ školə-m
 student-LNK-3-OBL COMP few.PRED school-OBL
 zə cəb^w-jə š’ə-zə-λeβ^wə-βe-r
 1 mouse-& LOC-REL.A-see-PST-ABS
- b. *stud’ent-jə-š’ə-m nah mač’e školə-m
 student-LNK-3-OBL COMP few school-OBL
 zə cəb^w-jə š’a-λeβ^wə-β
 1 mouse-& LOC-3PL.A-see-PST
 Expected meaning: Fewer than 3 students saw any mice at school.

Additionally, decreasing QNPs can be built using negation (see (74)–(76)).

Negation on the predicate (i.e., ‘finite’ negation) can always license an NPI, as in (37)–(39). Non-finite negation (i.e., negation that can appear on NPs in argument position) cannot license an NPI reading:

- (193) a. pšeš-jə-ɬ^wə-m mə-nahə-be zə wered-jə zexexə-β
 girl-LNK-2-OBL NEG-COMP-many 1 song-& hear-PST
 Not more than 2 girls have heard even 1 song/*any songs.
- b. pšeš-jə-ɬ^wə-m mə-nahə-be a werede-r sədjəβ^w-jə
 girl-LNK-2-OBL NEG-COMP-many that song-ABS when-&
 zexexə-š’təβe
 hear-IMF
 Not more than 2 girls have always/*ever heard this song.

If a decreasing QNP is built with finite negation, it licenses NPIs just as any other context with negation on the main predicate.

2.6.4 Boolean Compounds

2.6.4.1 D-Quantifiers

Boolean compounds can be formed from either D- or A-quantifiers using the following means:

Negation: Adyghe has suffixal ‘finite’ negation *-ep* and prefixal ‘non-finite’ negation *mə-* (the distribution of the two morphemes was discussed in detail in Section 2.2, page 21).

Conjunctions: *æč’ə* ‘and’, *aw* ‘but’, *je* ‘or’, *-jə...-jə* ‘and’ (attaches to both conjuncts).

- (194) som-jə-pšə-m nah mə-mač’-ew qə-se-t
 ruble-LNK-ten-OBL COMP NEG-few-ADV DIR-1SG.IO-give.IMV
 Give me no less than ten rubles.

- (195) anahmač’emjə stud’ent-jə-ʦ^w aw pšə-m nahə-b-ep
 at.least student-LNK-2 but 10-OBL COMP-many-NEG

 qe-k^we-re jəlesə-m stip’endije-r qə-ze-r-a-tə-š^wtə-r
 DIR-go-DYN year-OBL fellowship-ABS DIR-REL.IO-OBL-3PL.A-give-FUT-ABS
 At least two but not more than ten students will receive the fellowship
 next year.

Interestingly, in the examples below one of the conjuncts (*zeč’erjə arep* ‘isn’t all’ in (196a), *zeč’ep* ‘all-NEG’ in (196b)) is finite judging by the form of negation, but the entire coordinated structure (*zeč’erjə arep, aw anahəbe* ‘not all, but most’) can’t be a finite predicate in the sentence – otherwise, the sentence would have two finite predicates – the quantifier predicate and ‘they sleep’ (which is undoubtedly a finite predicate here, otherwise the dynamicity marker wouldn’t have the form of *me-*).

- (196) a. [wəsaḱ^wə-xe-r zeč’e-r-jə ar-ep], [aw anahəbe
 poet-PL-ABS all-ABS-& COP-NEG but most

 š’əžek^we-wəžəm me-čəje-x]
 noon-after DYN-sleep-PL
 Most but not all poets sleep in the afternoon.
 (Lit.: Poets aren’t all, but most sleep in the afternoon.)
- b. [poet nahəbe-xe-r [aw zeč’-ep] š’əžek^we-wəžəm me-čəje-x.
 poet most-PL-ABS but all-NEG noon-after DYN-sleep-PL
 Most but not all poets sleep in the afternoon.
 (Lit.: Most poets – but all aren’t – sleep in the afternoon.)

Perhaps the most adequate hypothesis would be that what we see here isn't really coordination of quantifiers or QNPs, but rather a case of clause coordination with ellipsis of the restrictor DP in one of the conjuncts.

When two morphemes of the form *-jə* co-occur at the end of the word, haplology applies:

- (197) /pšeše-ž'əje-m-jə-jə č'ele-çək^wə-m-jə-jə ar a-še/ →
 girl-small-OBL-even-& boy-small-OBL-even-& this.ABS 3PL.A-know
 [pšešež'əje-m-jə č'eleçək^wə-m-jə ar aše]
 Girls and boys know this./Even girls and boys know this.

Arguably, one can analyze (197) as an example of asyndetic conjunction where *-jə* is used as a scalar particle 'even'. However, example (198) demonstrates that the haplology hypothesis must be on the right track: while the derivational morpheme *-re* and conjunction *-jə* are compatible within a single word, the same *-re* 'TMP' is incompatible with the conjunction *-re* '&', which generally has the same semantics and distribution as *-jə*:

- (198) aš' pč'edəž'-r-jə pč'əhe-r-jə z-je-thač'ə /*pč'edəž'-re-re...
 she morning-TMP-& evening-TMP-& RFL-3SG.OBL-wash /*morning-TMP-&
 She washes herself both in the mornings and in the evenings.

The haplology hypothesis explains why *-jəjə* clusters aren't found when coordinative *-jə* attaches to a quantifier that contains *-jə* for independent reasons, e.g., *pstewrjə*:

- (199) stud'ent pstew-r-jə, č'elejeβaže pstew-r-jə zexahe-m qe-κ^wa-βe-x-ep
 student every-ABS-& teacher every-ABS-& party-OBL DIR-go-PST-PL-NEG
 Neither every student nor every teacher came to the party.

2.6.4.2 A-Quantifiers

In this section I demonstrate for A-quantifiers the same phenomena that were described in the previous section:

- (200) aslan urok-xe-r t^wə-m mə-nah-mač'-ew
 Aslan lesson-PL-ABS two-OBL NEG-COMP-few-ADV
 aw jə-m mə-nahə-b-ew x-jə-na-βe-x
 but eight-OBL NEG-COMP-many-ADV LOC-3SG.A-skip-PST-PL
 Aslan skipped lessons not less than two and not more than eight times.

Adyghe speakers note that it is difficult to find a good translation for 'not always'. If 'always' is expressed by a free-choice item whose interpretation as a universal quantifier is licensed by lack of negation in the sentence, it is

impossible to negate such a sentence without changing the interpretation of the quantifier. Another way to translate ‘always’ is *rjenuw* – a quantifier that cannot be inflected with negation, neither prefixal (203a) nor suffixal (203b).¹³

Therefore, to translate something like ‘not always’, Adyghe can use QNPs with D-quantifiers (201) or coordinate two clauses (202):

(201) psə-m be-re sə-k^we-š'təʁe aw mafe qes-ep
 river-OBL many-TMP 1SG.ABS-go-IMF but day every-NEG
 I used to go to the river often, but not every day.

(202) aslan wəne-m-č'e ʁeçeç'en-xe-r be-re j-e-šə-ž'ə,
 Aslan house-OBL-INST task-PL-ABS many-TMP 3SG.A-DYN-do-REF
 aw rjenuw ə-šə-ž'ə-r-ep.
 but always 3SG.A-do-DYN-NEG
 Aslan does the homework often, but not always.

(203) a. *aslan wəne-m-č'e ʁeçeç'en-xe-r
 Aslan house-OBL-INST task-PL-ABS
 be-re aw mə-rjenuw j-e-šə-ž'ə
 many-TMP but NEG-always 3SG.A-DYN-do-REF

b. *aslan wəne-m-č'e ʁeçeç'en-xe-r
 Aslan house-OBL-INST task-PL-ABS
 be-re j-e-šə-ž'ə, aw rjen-ep.
 many-TMP 3SG.A-DYN-do-REF but always-NEG
 Expected meaning: Aslan does the homework often, but not always.

2.6.5 Exception Phrases

The most common Adyghe words for ‘except’ are *neməç'* and *peməç'*. They take nominal complements marked with Oblique. In declarative sentences they bear Adverbial case, but in negative sentences the overt case marker can be absent:

(204) zeç'e-m-jə a-še žəwəpə-r mə ç'ale-m neməç'-ew /peməç'-ew.
 all-OBL-& 3PL.A-know answer-ABS this boy-OBL except-ADV /except-ADV
 Everyone except this boy knows the answer.

(205) zəce-m-jə mə pšeše-ž'əje-m neməç'-(ew) sup ə-šə-ʁ-ep.
 any-OBL-& this girl-small-OBL except-(ADV) soup 3SG.A-did-PST-NEG
 Nobody except this girl made the soup.

¹³ P. Arkadjev suggests an alternative analysis of *rjenuw*, which predicts that non-finite negation of it will sound as *rjemənew* and its finite negation will sound as *rjenərep*. I performed a search of Adyghe mass media and texts and found that the suggested forms are not attested either.

When ‘except’ has a verbal complement, usually a nominalization formed with *-n* is used. Verbal exception phrases may be uninflected in declaratives (206):

- (206) se zeč'e s-šə-ɸe žene də-nə-m neməč'-(ew).
 I all 1SG.A-do-PST dress sew-POT-OBL except-(ADV)
 I did everything except for sewing the dress.
- (207) a. we zəc-jə p-šə-ɸ-ep c'wəmpə p-šxə-ɸə nah
 you only-& 2SG.A-do-PST-NEG strawberry 2SG.A-eat-PST than
- b. we c'wəmpə šxə-nə-m neməč' zəc-jə p-šə-ɸ-ep
 you strawberry eat-POT-OBL except only-& 2SG.A-do-PST-NEG
 You did nothing except eat the strawberries.

2.6.6 Only

The three Adyghe counterparts of ‘only’, *nəʔep*, *q'wedəj* and *zaq'wə*, were introduced in Section 2.3.1.4 ‘Just/Only’. In this section I explore them in further detail.

q'wedəj and *zaq'wə* are monomorphemic; *nəʔep* can be divided into the finite negation *-ep* and the unique morpheme *nəʔ-* which is not found in any other word beside *nəʔep*.

Since *nəʔep* contains finite negation, it can only function as a main verb: example (208a), with *nəʔep* functioning as a finite predicate and the rest of the sentence being a relative clause is grammatical, while (208b), containing a finite predicate in addition to *nəʔep*, is bad:

- (208) a. mə č'ale-r nəʔep č'aške zə-q'wəta-ɸe-r
 this boy-ABS only cup REL.A-break-PST-ABS
 Only this boy broke his cup
 (lit.: Those who broke a cup is only this boy)
- b. *mə č'ale-r nəʔep č'aške jə-q'wəta-ɸ.
 this boy-ABS only cup 3SG.A-break-PST
 Expected: Only this boy broke his cup.

The hypothesis that *nəʔep* contains negation is further supported by the fact that past tense suffix attaches between the negation and the bound root:

- (209) mə laɸe-m jə-lə-ɸe-r kartoška nəʔa-ɸ-ep
 this dish-OBL LOC-lie-PST-ABS potato \$-PST-\$NEG(only)
 This dish contained only potatoes
 (lit.: It was only potatoes that were in this dish).

Two other variants of ‘only’ are the adjectives *zaq^we* and *q^wedəj*. They form QNPs that have no constraints with respect to syntactic positions:

- (210) *mə pšeše zaq^we-m /q^wedəje-m ə-bež’a-be pirogə-r*
 this girl only(ADJ)-OBL /only(ADJ)-OBL 3SG.A-bake-PST cake-ABS
 Only this girl baked a cake.

Two features of these quantifiers reveal them to be modifiers of the noun rather than determiners: first, they participate in the *a~e* alternation, just like standard adjectives; second, case/number inflections attach outside the only-phrase:

- (211) a. *mə š^wefə-m š’ə-χ^wə-xe-r melə zaq^we-xe-r arə*
 this field-OBL LOC-happen-PL-ABS sheep only.ADJ-PL-ABS COP
 b. *mə š^wefə-m š’ə-χ^wə-xe-r mel q^wedəje-xe-r arə*
 this field-OBL LOC-happen-PL-ABS sheep only.ADJ-PL-ABS COP
 Only sheep graze on this field.

As far as Adyghe syntax is concerned, nothing suggests that the exception phrase forms a constituent with the Determiner.

2.6.7 *Partitives*

Partitives consist of two parts: the actual quantifier (*be* ‘many’ in (212b); *nebyəre zawele* ‘several persons’ in (213b)) and the part denoting the set quantified over (*tas’əš’ew* ‘of us’ in the aforementioned examples). The latter part is formed by the restrictor NP marked with Oblique (*Aminet jə-student-xem* ‘Aminet’s students’ in (214b)) and (*a*)-*š’ə-š’-ew* (3PL.OBL)-LOC-get.out.of-ADV’.

(*a*)-*š’ə-š’ew* is an adverbial derived from the verb ‘to get out of smth.’, with locative preverb and an optional *a*-, which used to mark the verb’s agreement with its Oblique argument, but has lexicalized by now: note, that *a*- doesn’t change even in cases when the Oblique argument of the construction is different from 3PL – like in (212b). For simplicity, we’ll gloss (*a*)-*š’ə-š’ew* as ‘of’.

Since partitives require obligatory Oblique marking on restrictor NP, the distinction between definite and indefinite DPs is neutralized, which means that all partitives are ambiguous between a generic reading (‘n out of every x NP’) and definite set reading (‘n out of the x NP’). This can be disambiguated further by means of extra quantifiers and determiners (such as ‘every’ and ‘these’).

Quantifiers that select for a bare NP are incompatible with pronouns (212a), demonstratives and, for some speakers, with Possessive phrases (214a). Such

sentences can be repaired by merging the complement DP with an NP-level quantifier by means of the partitive construction, as in (212b)–(214b).

- (212) a. *te-be njepe qe-ḱ^wa-ḱe-x.
1PL-many today DIR-go-PST-PL
- b. be t-a-š'ə-š'-ew njepe qe-ḱ^wa-ḱe-x.
many 1PL-3PL-LOC-get.out.of-ADV today DIR-DYN-go-PST-PL
Many of us have come today.
- (213) a. *te zawəle školə-m qe-ḱ^wa-ḱe-x
we several school-OBL DIR-go-PST-PL
- b. nebyəre zawəle t-a-š'ə-š'-ew školə-m qe-ḱ^wa-ḱe-x
person several 1PL-3PL-LOC-get.out.of-ADV school-OBL DIR-go-PST-PL
Some of us went to school.
- (214) a. %Aminet jə-student-jə-ṭ^w nəʔep...
Aminet her-student-LNK-2 only
Only two Aminet's students. . .
- b. Aminet jə-student-xe-m aš'əš'-ew nebyər-jə-ṭ^wə nəʔep
Aminet her-student-PL-OBL of-ADV person-LNK-2 only
ekzam'enə-r zə-tə-ḱe-r
exam-ABS REL.A-pass-PST-ABS
Only two of Aminet's students passed the exam.
- (215) xet-a wjə-sabəjə-xe-m aš'əš'-ew mə pravile-r zə-šə-re-r?
who-Q your-child-PL-OBL of-ADV this rule-ABS REL.A-know-DYN-ABS
Which of your children knows this rule?
- (216) mə č'ale-xe-m aš'əš'-ew zə-m-jə šhanḱ^wəpčə-xe-r
this boy-PL-OBL of-ADV 1-OBL-& window-PL-ABS
ə-q^wəta-ḱ-(ex)-ep
3SG.A-break-PST-(PL)-NEG
Neither of these boys broke any windows.

DP-level quantifiers do not require partitive construction, but do allow it:

- (217) stud'ent-xe-m (aš'əš'-ew) zeč'e-m š^wəhaftən-xe-r
student-PL-OBL (of-ADV) all-OBL prize-PL-ABS
q-a-ra-tə-ḱe-x
DIR-3PL.IO-3PL.A-give-PST-PL
All (of the) students received a prize.

- (218) mə pšaše-xe-m (aš'əš'-ew) ja-nahəbere-m
 this girl-PL-OBL (of-ADV) 3PL-most-OBL
 č'em-xe-r a-š'ə-n-ew k^wa-βe-x
 COW-PL-ABS 3PL.A-milk-POT-ADV GO-PST-PL
 Most of these girls went to milk cows.

2.6.8 Quantifiers as Predicates

Adyghe allows a wide range quantifiers to be used in predicate position:

- (219) məl-ew š^wefə-m š'ə-χ^wə-š'təβe-xe-r...
 sheep-ADV field-OBL LOC-happen-IMF-PL-ABS

- a. ...tfə-βe /ba-βe /nahəba-β
 5-PST /many-PST /most-PST

The sheep that were in the field were five/many/most (i.e., most of the animals that were on the field were the sheep).

- b. ...lawəza-β /pčəβa-β /zawəla-β
 several-PST /number-PST /several-PST

The sheep that were in the field were several/a number of.

- c. ...%zeč'a-β
 all-PST

The sheep that were in the field were all (e.g., everything I've got).

- d. ...*pepča-β /*zəparjə-β /*g^wera-β
 every-PST /no-PST /some-PST

Expected: The sheep that were in the field were every/no/some.

- e. ...pšə-m š'əš'-ew blə-βe
 10-OBL of-ADV 7-PST

The sheep that are in the field were seven out of the ten (that I have).

2.6.8.1 Quantifiers as DPs

All Adyghe quantifiers with the exception of the universal distributive quantifiers *pepč* and *qes* can be used as DPs without the complement NP.

- (220) mə txəl-jə-tfə-r se s-š'te-š't, š'ə-r we
 this book-LNK-5-ABS I 1SG.A-take-FUT 3-ABS you
 qə-p-fe-z-βene-š't
 DIR-2SG.IO-BEN-1SG.A-leave-FUT
 I'll take these five books, and I'll leave three for you.

- (221) žane-xe-r pəwətə-βe-xe-tjə, se be /lawəze /pčəke
 dress-PL-ABS cheap-PST-PL-CS I many /several /a.number.of
 /tʃə /zečəe-(r-jə) /zəg^were /nahəbe-r /*pepč /pʃə-m ašʹašʹ-ew blə
 /5 /all-(ABS-&) /some /majority-ABS /*every /10-OBL of-ADV 7
 /zə-m neməčʹew zečʹe-r-jə qe-s-šʹefə-β
 /1-OBL except all-ABS-& DIR-1SG.A-buy-PST
 The dresses were cheap, so I bought many /several /a number of /five /
 all /some /most (of them) /7 out of 10 /all except one.
- (222) a. žane-xe-r λape-xe-tjə, mačʹe qe-s-šʹefə-β
 dress-PL-ABS expensive-PL-CS, few DIR-1SG.A-buy-PST
 The dresses are expensive, so I bought few.
- b. žane-xe-r λape-xe-tjə, tʃə-m nah mačʹe qe-s-šʹefə-β
 dress-PL-ABS expensive-PL-CS, 5-OBL COMP few DIR-1SG.A-buy-PST
 The dresses are expensive, so I bought less than 5.
- c. žane-xe-r λape-xe-tjə, zəpar-jə qe-s-šʹefə-β-ep
 dress-PL-ABS expensive-PL-CS, any-& DIR-1SG.A-buy-PST-NEG
 The dresses are expensive, so I didn't buy any.

2.6.9 Distribution

The vast majority of the QNPs containing D-quantifiers in Adyghe have the distribution of the DPs. The exceptions include:

(a) decreasing QNPs, which, for some speakers, are prohibited in the argument positions and have, therefore, to function as predicates (see Section 2.3.1.4 ‘More/Less; At most/At least’);

(b) QNPs with *pepč* ‘every’, which in some dialects cannot be inflected and therefore can only occur in positions where they are case marked with Absolutive or Oblique (the two cases that have null realization of the inflection), but cannot be coordinated with *-jə* and cannot be inflected with Instrumental or Adverbial case:

- (223) %šʹebzašʹe-r wəne pepč-čʹe ə-tʃ^wəpsʹə-β
 arrow-ABS house every-INST 3SG.A-shoot-PST
 He shot an arrow in every house's direction.

(c) QNPs with *qes* ‘every’, which is only allowed in temporal adjuncts:

- (224) a. sabə-jə-tʃ^w pepč /*qes χərbəʒ zərəʒ q-a-ra-tə-šʹt
 child-LNK-2 every/*every watermelon 1.each DIR-3PL.IO-3PL.A-give-FUT
 Every 2 children will get a watermelon.
- b. se mafe pepč /mafe qes škole-m avtobus-čʹe s-e-ḵ^we
 I day every /day every school-ERG bus-INST 1SG.ABS-DYN-go
 I always/every day go to school by bus.

Such a constraint on the position of this quantifier may be a result of two distinct selectional restrictions – a restriction on the restrictor NP (i.e., *qes*'s first argument can only be a noun that denotes a period of time) or a restriction on the nuclear scope (*qes*'s second argument must be an event, but not an individual). Below I provide the evidence that it is the latter, not the former that restricts *qes* to temporal adjunct positions.

When a QNP can be interpreted either as an adjunct or an argument, QNPs with *qes* are unambiguously interpreted as adjuncts. This fact is unexpected under the restrictor selection hypothesis, but is easily explained by the hypothesis that the QNP containing *qes* must quantify over events:

(225) a. pč'edəž'ə pepč g^wəš^waɸ^we
 morning every joy
 Every morning is joy./There is joy every morning.

b. pč'edəž'ə qes g^wəš^waɸ^we
 morning every joy
 There is joy every morning./*Every morning is joy.

(226) a. mafe pepč wase fe-š
 day every price BEN-do(IMV)
 Value every day.

b. mafe qes wase fe-š
 day every price BEN-do(IMV)
 Value it (smth known from the context) every day./*Value every day.

When a QNP with *qes* unambiguously occupies an argument position, the sentence is ungrammatical even if the restrictor noun denotes a time period:

(227) *thamafe qes mef-jə-bl jə-λ
 week every day-7 LOC-exist
 There are 7 days in every week.

Finally, *qes* can actually select a non-temporal noun as restrictor in a context where the QNP with such a noun can be interpreted as a temporal adjunct:

(228) weš'xə-ce qes nah čə?etəɸe q-e-χ^wə.
 rain-tooth each COMP cool DIR-DYN-happen
 With every raindrop it becomes cooler.

2.6.9.1 Scope Ambiguities

Adyghe does allow more than one quantifier per sentence and scope ambiguities are indeed found. However, this kind of data is more difficult to elicit. Perhaps due to the subtlety of the task there exists considerable variability in judgments.

There is a strong preference for surface scope: surface scope is always accepted by all speakers. Non-surface scope is more accessible when it is a result of reconstruction of a scrambled argument into its initial position (on the assumption that the object is generated closer to the predicate than the subject):

- (229) pravile pepč ʔ^wefšak^we g^were-m j-e-še ∇>∃; ∃>∇
 rule every worker some-OBL 3SG.A-DYN-know
 Some worker knows every rule.

- (230) txəl pepč r'edaktor g^were je-ža-Ɂ ∇>∃; ∃>∇
 book every editor some 3SG.IO-read-PST
 Every book, some editor read.

When a non-surface scope cannot be produced through reconstruction, it becomes much less accessible:

- (231) zə r'edaktor g^were txəl pepč je-ža-Ɂ ∃>∇; *∇>∃
 1 editor some book every 3SG.IO-read-PST
 Some editor read every book.

This may very well be a constraint on the universal quantifier *pepč* – in the same configuration with the universal quantifier in the subject position, both scopes are easily accessible:

- (232) stud'ent pepč č'ereš'e tjembwet jə-zə-raskaz je-ža-Ɂ, ∃>∇
 student every Kerašev Tembot his-1-story 3SG.IO-read-PST
 a-r awəžə-re šx^wenč' weɁ^wər arə
 that-ABS last-TMP rifle shot COP
 Every student read one story by Tembot Kerašev. It was “The Last Shot”.

- (233) stud'ent pepč č'ereš'e tjembwet jə-zə-raskaz je-ža-Ɂ, ∇>∃
 student every Kerašev Tembot his-1-story 3SG.IO-read-PST
 zərəz-xe-r ʔ^wə je-ža-Ɂ
 some-PL-ABS 2 3SG.IO-read-PST
 Every student read one story by Tembot Kerašev, and some read two.

2.6.9.2 Numbers

Sentences with numeral quantifiers only allow a collective interpretation. For the distributive interpretation, a distributive numeral must be used – see Section 2.6.9.3.

- (234) λ-jə-ʔ^wə-m wered-jə-š' q-a-ʔ^wa-Ɂ.
 man-LNK-two-OBL song-LNK-three DIR-3PL.A-say-PST
 Two men sang three songs (collective; *distributive)

- (235) č'elejekež-jə-ɬ^wə-m a-wəpλek^wə-β kontrol'nə-j.
 teacher-LNK-TWO-OBL 3PL.A-grade-PST test-8
 Two teachers graded eight tests (collective; *distributive)

2.6.9.3 Forcing Collective/Distributive Readings

A collective reading can be emphasized with the adverbial form *ze-β^wəse-xe-w* REC-companion-PL-ADV ‘together’ (lit.: ‘being companions to each other’) or the instrumental form of ‘all’ *zeč'e-m-č'-jə* ‘all-OBL-INST-&’:

- (236) a. č'elejekež-jə-š'ə-m ze-β^wəse-xe-w rabot-jə-š a-wəpλek^wə-β
 teacher-LNK-3-OBL REC-companion-PL-ADV test-LNK-100 3PL.A-grade-PST
 b. č'elejekež-jə-š'ə-m zeč'e-m-č'-jə rabot-jə-š a-wəpλek^wə-β
 teacher-LNK-3-OBL all-OBL-INST-& test-LNK-100 3PL.A-grade-PST
 Three teachers graded one hundred tests together/in total.

A distributive interpretation can be forced using distributive numerals (see Section 2.6.10 for more details) in the argument that takes narrow scope:

- (237) č'elejekež-jə-š'ə-m rabote šeraše a-wəpλek^wə-β.
 teacher-LNK-3-OBL test 100.each 3PL.A-grade-PST
 Three teachers graded one hundred tests each.
- (238) rabot-jə-še-r č'elejekeže š'əraš' a-wəpλek^wə-β
 test-LNK-100-ABS teacher 3.each 3PL.A-grade-PST
 One hundred tests are such that three teachers graded them.

zəraz ‘one-by-one’ forces a distributive interpretation of the QNP it’s adjacent to:

- (239) č'elejekež-jə-š'ə-m rabot-jə-še zəraz a-wəpλek^wə-β.
 teacher-LNK-3-OBL test-LNK-100 1.each 3PL.A-grade-PST
 Three teachers graded one hundred tests each.
- (240) rabot-jə-še-r č'elejekež-jə-š' zəraz a-wəpλek^wə-β
 test-LNK-100-ABS teacher-LNK-3-OBL 1.each 3PL.A-grade-PST
 One hundred tests are such that three teachers graded each.

Adyghe has a key-distributive adverbial quantifier *šhaž*. For the speakers who allow overt subjects with this quantifier, it works as a means of forcing a distributive reading of a subject QNP which would normally be interpreted collectively:

- (241) č'elejekež-jə-š'ə-m šhaž rabot-jə-še a-wəpλek^wə-β
 teacher-LNK-3-OBL each test-LNK-100 3PL.A-grade-PST
 Three teachers graded one hundred tests each.

2.6.9.4 Modified Numerals in Object Position

Modified numerals in object position can take both narrow and wide scope.

- (242) stud'ent pepč č'ereš'e tjembwet anahmač'emjə jə-zə-raskaz
 student every Kerašev Tembot at least his-1-story
 je-žā-ke-x, . . .
 3SG.IO-read-PST-PL
- a. . . zerəz-xe-r tfə-m nahə-be je-žā-κ.
 some-PL-ABS 5-OBL COMP-many 3SG.IO-read-PST
 Every student read at least one story by Tembot Kerašev, and some read
 more than five ($\forall >$ at least 1).
- b. qe-zere-s-š^wešə-re-m-č'e ar raskaz-ew awəžə-re šx^wenč' weκ^wə
 DIR-FCT-1SG.A-think-DYN-OBL-INST he.ABS story-ADV last-TMP rifle shot
 Every student read at least one story by Tembot Kerašev, and I think it
 was 'The Last Shot' (\rightarrow at least $1 > \forall$)

2.6.9.5 Decreasing QNPs

Decreasing QNPs can take both narrow and wide scope with respect to the other QNP in the sentence:

- (243) stud'ent-jə-blə-m nah mač'e wəpče pepč
 student-LNK-7-OBL COMP few question every
 žewap qə-r-a-tə-ž'ə-κ
 answer DIR-3PL.IO-3PL.A-give-REF-PST
 Less than 7 students are such that they answered every question.
 Every question was answered by less than 7 students.
- (244) zə pšeše zaq^we stixotvor'eni-jə-š'ə-m nahjə nah mač'-ew
 1 girl only(ADJ) poem-LNK-3-OBL than COMP few-ADV
 q-je-žā-ke-r, adre stud'ent-x-er tfərətʃ qə-ze-žā-ke-r.
 DIR-3SG.IO-read-PST-ABS other student-PL-ABS 5.each DIR-REL.IO-read-PST-ABS
 Only 1 girl read less than 3 poems, other students read 5 poems each.
- (245) zə pšeše zaq^we stixotvor'eni-jə-š'ə-m nahjə nah mač'-ew
 1 girl only(ADJ) poem-LNK-3-OBL than COMP few-ADV
 q-je-žā-ke-r, adre stixotvor'enije-xe-m stud'ent tfərətʃ
 DIR-3SG.IO-read-PST-ABS other poem-PL-OBL student 5.each
 q-ja-žā-κ
 DIR-3PL.IO-read-PST
 Less than 3 poems were read by only 1 girl, other poems were read by 5
 students each.

2.6.9.6 All vs. Every

Adyghe speakers do not report considerable distinctions between the scope of distributive and collective universal quantifiers. *zeč'e* can be interpreted in situ, but it can also take wide scope, which is illustrated by the fact that sentence (a) can be followed by (b):

- (246) a. zə pšaše zeč'e č'elejeɤaʒe-xe-m a-de-g^wəš'əʔa-ɸ $\forall > \exists; \exists > \forall$
 1 girl all teacher-PL-OBL 3PL.IO-COM-speak-PST
 One girl talked to all teachers.
- b. neməč'ə-xe-m q-a-de-g^wəš'əʔa-ɸe-r neɸɔre zawəl
 other-PL-OBL DIR-3PL.IO-COM-speak-PST-ABS person several
 ...And to some teachers several people talked.

2.6.9.7 Collective vs. Distributive

Among Adyghe universal quantifiers, the following are collective: *zeč'e* 'all', *zere-...-ew* 'whole, entire': they can be combined with predicates requiring semantic plurality, such as 'gather' (247a–b), and they force collective interpretation when used as possessor phrase with the noun 'photo' (248a–b). The distributive quantifiers are *pepč* 'every', *šhaž* 'every/everyone' – these quantifiers are incompatible with 'gather' (247c–d) and force distributive interpretation in (248c–d).

- (247) a. zeč'e stud'ent-xe-r sjə-sad š'ə-zere-wəɸ^wejə-ɸe-x.
 all student-PL-ABS my-garden LOC-REC.A-gather-PST-PL
 All students gathered in my garden.
- b. zere-klas-ew sjə-sad š'ə-zere-wəɸ^wejə-ɸe-x
 \$-class-\$ADV(all) my-garden LOC-REC-gather-PST-PL
 The entire class gathered in my garden.
- c. *stud'ent pepč sjə-sad š'ə-zerə-wəɸ^wejə-ɸe-x.
 student every my-garden LOC-REC-gather-PST-PL
- d. *šhaž sjə-sad š'ə-zere-wəɸ^wejə-ɸe-x
 every my-garden LOC-REC-gather-PST-PL
- (248) a. zeč'e stud'ent-me ja-zə-suretə-r stolə-m tje-λə-ɸ.
 all student-OBL+PL their-1-photo-ABS table-OBL LOC-lie-PST
 The photo of all the students was lying on the table (one photo in total).
- b. zere-klas-ew jə-kart stolə-m tje-λə-ɸ
 \$-class-\$ADV(all) their-photo table-OBL LOC-lie-PST
 The photo of all the students was lying on the table (one photo in total).

- c. stud'ent pepč ja-zə-suretə-r stolə-m tje-λə-ϕ
 student every their-1-photo-ABS table-OBL LOC-lie-PST
 A photo of every student was lying on the table (many separate ones).
- d. šhaž jə-kart stolə-m tje-λə-ϕ
 every his-photo table-OBLLOC-lie-PST
 A photo of every person was lying on the table (many separate photos).

Because *qes* 'every' can only occupy a temporal adjunct position, it can't be tested with respect to the collective vs. distributive distinction with usual means. However, the fact that it can participate in forming an indexing function (see Section 2.6.11) suggests that it is, in fact, distributive.

The quantifier *pstew* is neutral with respect to the distinction in question: it can be used with predicates like 'gather' or 'meet' (249), but it also allows a distributive interpretation in certain contexts (250).

- (249) hajwan pstewə-r-jə š'ə-zere-wəϕ^wejə-ϕe-x noj jə-kovč'egə-m
 animal all-ABS-& LOC-REC-gather-PST-PL Noah his-ark-OBL
 All animals gathered in Noah's ark.
- (250) stud'ent pstewə-m-jə ja-kart stolə-m tje-λə-ϕ
 student all-OBL-& their-photo table-OBL LOC-lie-PST
 All students' photos are lying on the table (many individual; *one group photo)

2.6.9.8 Scope Ambiguity in Wh-Questions

In Adyge both *zeč'e* 'all' and *pepč* 'every' can have both narrow and wide scope with respect to the question word regardless of whether they are in subject (251–252) or in object position (253–254). It is also remarkable (and possibly unexpected) that they have both readings despite their sharp difference with respect to collective vs. distributive tests (Section 2.6.9.7).

The quantifier *nahəbe* 'most' can only be interpreted in situ (255).

- (251) səd fede wəpč-a zeč'e stud'ent-xe-m
 what like question-Q all student-PL-OBL
 žewap qə-ze-ra-tə-ž'ə-ϕe-r?
 answer DIR-REL.IO-3PL.A-give-REF-PST-ABS
 wh>∀: Which question did all the students answer?
 ∀>wh: For every student, which question did he answer?
- (252) səd fede wəpč-a stud'ent pepč žewap
 what like question-Q student every answer
 qə-ze-ra-tə-ž'ə-ϕe-r?
 DIR-REL.IO-3PL.A-give-REF-PST-ABS
 wh>∀: Which question did all the students answer?
 ∀>wh: For every student, which question did he answer?

- (253) tər-a stud'ent-ew žewap zeč'e wəpč'e-xe-m
 who-Q student-ADV answer all question-PL-OBL
 q-ja-zə-tə-ž'ə-βe-r?
 DIR-3PL.IO-REL.A-give-REF-PST-ABS?
 wh>∀: Which students answered all the questions?
 ∀>wh: For every question, which student answered it?
- (254) tər-a stud'ent-ew žewap wəpč'e pepč
 who-Q student-ADV answer question every
 q-ja-zə-tə-ž'ə-βe-r?
 DIR-3PL.IO-REL.A-give-REF-PST-ABS?
 wh>∀: Which students answered every question?
 ∀>wh: For every question, which student answered it?
- (255) tər-a stud'ent-ew nahə-be žewap wəpč'e-xe-m
 who-Q student-ADV COMP-many answer question-PL-OBL
 q-ja-zə-tə-ž'ə-βe-r?
 DIR-3PL.IO-REL.A-give-REF-PST-ABS?
 wh>most: Which students answered the most questions?
 *most>wh: For most questions, which students answered each question?

2.6.9.9 Ambiguity Between Nominal and Verbal Quantifiers

D-quantifiers and A-quantifiers basically interact the same way as D-quantifiers do. Numerals generally have a collective interpretation:

- (256) č'el-jə-ʈ^wə-r š'-e qeš^wa-β
 boy-LNK-2-ABS 3-TMP dance-PST
 2 boys danced 3 times. (collective)

A distributive numeral can force a distributive meaning:

- (257) č'ale-xe-r ʈ^wərəʈ^w š'-e qeš^wa-βe-x.
 boy-PL-ABS 2.each 3-TMP dance-PST-PL
 3>2 There were three times such that two boys danced;
 *2>3 There were two boys who danced three times.

Non-numeral adverbial QNPs tend to have wide scope ((a) can be followed by (b), but not by (c)):

- (258) a. mafe qes tja-izdat'el'stve šhanβ^wəpč-jə-ʈ^w š'-a-q^wəte
 day every our-publishing.house window-LNK-2 LOC-3PL.A-break
 Every day (they) break two windows in our publishing house.

- b. mefe zərəz-xe-m tʷə-m nahjənahə-be a-qʷət-ew-jə
 day several-PL-OBL 2-OBL than COMP-many 3PL.A-break-ADV-&
 me-χʷə
 DYN-happen
 And on some days they break more than two.
- c. #adre šhanʷəpčə-xe-r nah mačʷ-ew a-qʷəte-x
 other window-PL-ABS COMP few-ADV 3PL.A-break-PL
 And other windows they break much less often.

2.6.9.10 Quantifier-Negation Scope Interaction

Generally, both scopes are possible (see (259–260)).

- (259) zečʷe pšaše-xe-m žane a-də-β-ep $\forall > \neg; \neg > \forall$
 all girl-PL-OBL dress 3PL.A-sew-PST-NEG
 No girls sewed dresses./Not all girls sewed dresses.
- (260) sabəj pstwə-m-jə kaše-r a-gʷə r-jə-hə-r-ep $\forall > \neg; \neg > \forall$
 child all-OBL-& porridge-ABS their-heart LOC-3PL.A-carry-DYN-NEG
 Not all children like porridge./All children don't like porridge.

Testelefs (2009, 684–686) discusses quantifier-negation scope in simplex and complex clauses and concludes that both scopes are always available within a single clause. However, it may be too strong a claim – e.g., (261) was consistently judged by all informants as having only negation over the quantifier reading.

- (261) se cʷəmpə-r zečʷe-r-jə s-šxə-β-ep $\neg > \forall; * \forall > \neg$
 I strawberry-ABS all-ABS-& 1SG.A-eat-PST-NEG
 I didn't eat all the strawberries.

2.6.10 Distributive Numerals

Adyghe distributive numerals are derived from cardinals using reduplication – a way widely attested cross-linguistically. For monosyllabic cardinals (i.e., cardinals from 1 to 10 and 100), the model is: BASE-rə-RED (see (262a–b)), where RED equals BASE with final shwa deleted; for complex cardinals, full reduplication of the cardinal is used without epenthesis or deletion (262c):

- (262) a. zə zə-rə-z b. tʷə tʷə-rə-tʷə c. šʷečʷə šʷečʷə-šʷečʷə
 1 1-rə-1 2 2-rə-2 30 30-30
 one one-each two two-each thirty thirty-each

The syntactic properties of the distributive numerals were addressed in Section 2.6.9.7.

2.6.11 The ‘Indexing’ Function of Universal Quantifiers

Distributive universal quantifiers can introduce an indexing function:

- (263) *jə*les qes / *jə*les-*jə*-tf qes *çə*fə-be-xe-m mašine-xe-r
 year every / year-LNK-5 every human-many-PL-OBL car-PL-ABS
 q-a-š’efə.
 DIR-3PL.A-buy
 Every year/Every 5 years, more people buy cars.

Other quantifiers are prohibited in these contexts:

- (264) #*jə*les za-wəle /**jə*les-*jə*-tf *çə*fə-be-xe-m mašine-xe-r
 year several / year-LNK-5 human-many-PL-OBL car-PL-ABS
 q-a-š’efə.
 DIR-3PL.A-buy

As was mentioned at the beginning of Section 2.6.9, the quantifier *qes* ‘every’ is only acceptable within a temporal adjunct, which is why it generally selects for nouns denoting periods of time. However, *qes* is compatible with nouns of different semantics in the indexing function:

- (265) weš’xə-ce qes nah *čə*?eta κ e q-e- χ^w ə.
 rain-drop each COMP cool DIR-DYN-happen
 With every raindrop it becomes cooler.
- (266) #weš’xə-ce lawəze nah *čə*?eta κ e q-e- χ^w ə.
 rain-drop several COMP cool DIR-DYN-happen
- (267) weš’xəce-m /weš’xəce pepč /*weš’xəce qes zə psə gram xe-t
 raindrop-OBL /raindrop every / raindrop every 1 water gram LOC-stand
 There is 1 gram of water in a raindrop/in every raindrop.

2.6.11.1 Rate Phrases

Rate phrases can be either introduced as adjuncts (268–269), or as arguments: notice that in (268) the subject (‘airplane’) is Absolutive, while the subject in (270) is Oblique (it triggers Oblique agreement in the verb):

- (268) \mathfrak{R}^w əçə bəzəwə-r kilom’etre-š-jə-š’ sehatə-m ə-?ə κ -ew me-bəbə.
 iron bird-ABS kilometer-100-LNK-3 hour-OBL 3SG.A-hold-ADV DYN-fly
 The airplane flies at 300 km/h.
- (269) rwəsjet mafe-m t^w-e z-j-e-thač’ə
 Ruset day-OBL 2-TMP RFL-3SG.A-DYN-wash
 Ruset washes two times a day.

- (270) se mafe-m kilom'etre-ṭ^w-e-č' qe-s-e-čə.
 I day-OBL kilometer-2-TMP-10 DIR-1SG.A-DYN-run(TR)
 I run twenty kilometers a day.

2.6.12 Type (2) Quantifiers

As we've already seen, the main strategy for forming questions is the cleft. In multiple wh-questions one of the wh-words is left in-situ¹⁴:

- (271) a. səd fede stud'ent-x-a səd fede wəpçe-xe-m
 what like student-PL-Q what like question-PL-OBL
 ja-žewap q-ja-zə-tə-βe-xe-r?
 their-answer DIR-3PL.IO-REL.A-give-PST-PL-ABS
 Which students answered which questions?
- b. xet-a stud'ent-x-ew səd fede wəpçe-xe-m
 who-Q student-PL-ADV what like question-PL-OBL
 žewap q-ja-zə-tə-βe-xe-r?
 answer DIR-3PL.IO-REL.A-give-PST-PL-ABS
 Which students answered which questions?

Adyghe counterparts of 'different' are participles that mean 'differing from each other' and 'not being alike'. Here is their internal structure in detail:

- (272) ze-fe-šhaf-(xe-r)
 REC.IO-BEN-another-(PL-ABS)
 different (lit.: those that are another to each other)
- (273) ze-fe-mə-de-(r)
 REC.IO-§-NEG-§resemble-(ABS)
 different (lit.: those that aren't the same)

¹⁴ One of the anonymous reviewers voices a concern that availability of multiple wh-questions is unexpected with cleft-based questions. First, multiple wh-questions in Adyghe were documented at least as early as 2003; second, I doubt that their availability is truly unexpected: Adyghe has both clefts and wh-in-situ strategies available for forming wh-questions. When there are two question words, one of them raises to form a cleft, and the other one stays in situ, because at that point another cleft cannot be formed.

Moreover, if multiple wh-in-situ were indeed prohibited with a cleft strategy, it should still be available with wh-in-situ strategy. However, my consultants volunteered the examples I state here, and never offered a wh-in-situ sentence in response to the stimuli.

Some of the consultants stated that they could not find a grammatical translation for a sentence with two identical wh-words (like 'Who saw who?'). But even for them, the effect would go away once the two wh-phrases were made sufficiently distinct (like 'Who saw which girl?' or 'Who saw what?'). Thus, I conclude, we may be looking at a case of Distinctness violations (Richards 2010, 56), and not the constraints imposed by the cleft structure.

- (274) mafe-xe-r zeč'e-r-jə ze-fede-x-ep
 day-PL-ABS all-ABS-& REC-alike-PL-NEG
 All days are different (lit.: all days aren't alike).
- (275) pšeše zefešhaf-xe-m žane-xe-r a-š^wə-xe-r zefeməd-ew
 girl different-PL-OBL dress-PL-ABS 3PL-color-PL-ABS different-ADV
 zə-š'-a-λa-βe-x.
 RFL-LOC-3PL.A-put.ON-PST-PL
 Different girls put on dresses of different colors.
- (276) stud'ent zefeməde-x-er txəλ zefešhaf-xe-m ja-žə-βe-x
 student different-PL-ABS book different-PL-OBL 3PL.IO-read-PST-PL
 Different students read different books.

'The same' is expressed with the demonstrative *a* 'that' and the numeral *zə* 'one', neither of which can be omitted:

- (277) zeč'e pšaše-xe-m *(a) *(zə) žane-r a-g^wə r-jə-hə-β.
 all girl-PL-OBL that one dress-ABS 3PL-heart LOC-3SG.A-carry-PST
 All girls liked the same dress.

The reciprocal is also used for type (2) functions:

- (278) azamat bela qə-d-a-š^we-š'təβe, a-š' neməč'ew
 Azamat Bela DIR-COM-3PL.A-dance-IMF they-OBL besides
 zəparjə q-a-š^we-š'təβ-ep /qə-ze-d-a-š^we-š'təβ-ep
 nobody DIR-3PL.A-dance-IMF-NEG /DIR-REC.IO-COM-3PL.A-dance-IMF-NEG
 Azamat danced with Bela, and noone else danced (with anyone else).
- (279) bela axmad de-g^wəš'əʔe-š'təβe,
 Bela Ahmad COM-talk-IMF
 aš' peməč'ew zəparjə ze-də-g^wəš'əʔe-š'təβ-ep.
 they.OBL besides nobody REC.IO-COM-talk-IMF-NEG
 Bela talked to Ahmad, but noone else talked to anyone else.

Other type (2) adjectives include 'neighboring', 'opposite', 'competing'. Note that they all include the Reciprocal marker, so they literally mean 'those that are neighbors to each other'.

- (280) te ze-β^wəneβ^w č'əle-xe-m t-a-de-s.
 we REC-neighbour village-PL-OBL 1PL.ABS-3PL.IO-LOC-sit
 We live in neighboring villages.

- (281) mə suret-xe-r ze-peçənaŋe depq-xe-m a zə wəne-m
 this picture-PL-ABS REC-oppose wall-PL-OBL that I room-OBL
 pə-p-λe-n faj.
 LOC-2SG.A-hang-POT should
 These pictures should be hung on opposite walls of the same room.
- (282) te ze-neq^weq^wə-re kandidat-xe-m t-a-d-je-ʔa-ɤ.
 we REC-compete-DYN candidates-PL-OBL 1PL.ABS-3PL.IO-COM-OBL-speak-PST
 We voted for competing candidates.

2.6.13 Type ((1,1),1)

2.6.13.1 Comparative D-Quantifiers

Comparative phrases differ with respect to which position the topic occupies. The most common strategy requires the topic to be a complement of the comparative. In this case, the comparative phrase is in the predicate position and the rest of the sentence becomes a relativization, as in (283–284):

- (283) se ʔ^wef z-de-s-šə-ɤe-xe-r č'ale-xe-m anahjə
 I work REL.IO-COM-1SG.A-do-PST-PL-ABS boy-PL-OBL than
 pšəše-xe-r nahə-b
 girl-PL-ABS COMP-many
 I worked with more girls than boys.
- (284) š^wefə-m ble-xe-r š'ə-zə-λeɤ^wə-ɤe-xe-r č'ale-xe-m anahjə
 field-OBL snake-PL-ABS LOC-REL.A-see-PST-PL-ABS boy-PL-OBL than
 pšəše-xe-r nahə-b.
 girl-PL-ABS COMP-many
 More girls than boys saw snakes in the field.

Another possibility is that the topic occupies an argument position and the adjective in comparative form merges with it as a modifier:

- (285) se nah pšəše-be-me ʔ^wef a-de-s-šə-ɤ,
 I COMP girl-many-OBL+PL work 3PL.IO-COM-1SG.A-do-PST
 č'ale-me anahjə.
 boy-OBL+PL than
 I worked with more girls than boys.
- (286) karandaš-me anahjə nah ruč'ka-be-č'e sə-txa-ɤ.
 pencil-OBL+PL than COMP pen-many-INST 1SG.ABS-write(ANTIPASS)-PST
 I've been writing with more pens than pencils.

- (287) anahmač'emjə č'ejeježak^we-xe-r č'ejeježəže-xe-m a-fedjəz-ew
 at.least students-PL-ABS teacher-PL-OBL 3PL-equal-ADV
 zeʔ^wəč'e-m qe-k^wa-ɣe-x
 meeting-OBL DIR-go-PST-PL
 At least as many students as teachers came to the meeting.

Apparently, when the quantity of possessors is compared, the standard is not just a DP, but a possessor phrase with an elided head noun, marked with *jaje-* (which is also used as a predicate and in elliptical contexts):

- (288) č'ale-xe-m ja-q^wəšhefače-x-ew a-təɸ^wə-ɣe-xe-r
 boy-PL-OBL their-bike-PL-ADV 3PL.A-steal-PST-PL-ABS
 pšaše-xe-m ja-je-m fedjəz
 girl-PL-OBL 3PL.A-OWN-OBL equal
 As many boys' bikes were stolen as girls'.

2.6.13.2 Combinations with Conjunctions

Conjunction was discussed in Sections 2.3.1.7 and 2.6.4, so here I just list a couple of relevant examples:

- (289) a. bzəlfəɣe-xe-m-jə sabəj-xe-m-jə zeč'e-m-jə qale-r
 woman-PL-OBL-& child-PL-OBL-& all-OBL-& city-ABS
 q-a-bɣəna-ɸ
 DIR-3PL.A-leave-PST
 b. bzəlfəɣe-xe-m-re sabəj-xe-m-re zeč'e-m-jə qale-r
 woman-PL-OBL-& child-PL-OBL-& all-OBL-& city-ABS
 q-a-bɣəna-ɸ
 DIR-3PL.A-leave-PST
 All women and children left the city./
 *Every person who was both a woman and a child left the city.
- (290) thawmafe-m x^wəlfəɣe je bzəlfəɣe g^were-m ʔ^wef j-e-še.
 Sunday-OBL man or woman some-OBL work 3SG.A-DYN-do
 Some man or woman works on Sunday

2.6.13.3 Type (1,(1,1))

The comparison of two predicates generally involves relativization of one ('those who did the homework' in (291)–(292)) or both ('those who went to bed late' and 'those who got up early' in (293)) clauses that denote the properties being compared.

In the example below the noun ‘student’ can be absent (291), incorporated into the comparative (292) or occupy an argument position in the sentence (293).

- (291) [wənemč'e ʁeceč'en zə-ʃə-ž'ə-ʁe]-m nah-jə nahə-be (stud'ent)
 home task REL.A-DO-REF-PST-OBL than-& COMP-many (student)
 v'eč'erinke-m qe-k^wa-ʁ.
 party-OBL DIR-go-PST
 More students came to the party than did the homework.

- (292) [wənemč'e ʁeceč'en zə-ʃə-ž'ə-ʁe]-m nah-jə nah stud'entə-be
 home task REL.A-DO-REF-PST-OBL than-& COMP student-many
 v'eč'erinke-m qe-k^wa-ʁ.
 party-OBL DIR-go-PST
 More students came to the party than did the homework.

- (293) a zə student-xe-r arə [pozɲ-ew ʁ^we-λə-ž'ə-ʁe-xe]-r-jə,
 that 1 student-PL-ABS COP late-ADV LOC-lie-REF-PST-PL-ABS-&
 [ž'-ew qe-težə-ʁe-xe]-r-jə.
 early-ADV DIR-wake.up-PST-PL-ABS-&
 The same students went to bed late who woke up early.

2.6.14 Floating Quantifiers

In general, quantifiers in Adyghe can not be separated from their complements (such as NPs or verbs in case of *qes/pepč*). The exception to this generalization is the universal quantifier *zeč'erjə/zeč'emjə*:

- (294) sabəj-xe-r šəble-m zeč'e-*(r-jə) š'-e-š'əne-x
 child-PL-ABS thunder-OBL all-ABS-& LOC-DYN-fear-PL
 All children are scared of thunder.

Also, if a quantifier can be adjoined to the sentence (see (295)) or allows its restrictor DP to be adjoined (as in (296)), then the quantifier can be scrambled away from its complement:

- (295) pšaše-xe-m š'elame a-ʃə-ʁ ba-š'-ew
 girl-PL-OBL cake 3PL.A-DO-PST many-too-ADV
 The girls made too many cakes.

- (296) stud'ent-ew (tʷə-m) mə wəpçə-m (tʷəm) žewap (tʷəm)
 student-ADV (2-OBL) this question-OBL (2-OBL) answer (2-OBL)
 qə-r-a-tə-ɬ.
 DIR-3SG.IO-3PL.A-give-PST
 Two students answered this question.

The last sentence is an interesting case: it's not the quantifier that floats in this sentence, but the *restrictor*! Note, that the Oblique case, the case which generally marks the arguments of the verb, is found on the quantifier, which is in argument position here. The restrictor NP, on the other hand, is marked with Adverbial case *-ew* and *adjoined* to the sentence. So, literally, (296) should be translated as 'Two answered this question, being students'.

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Chapter 3

Quantification in Basque

Urtzi Etxeberria

3.1 Introduction

This paper explores the various syntactic and morphological means that Basque uses to express quantification. Basque is spoken in the Basque Country, although its official status is not equal throughout the whole area. Currently, Basque is one of the two official languages (together with Spanish) in the Autonomous Community of the Basque Country which consists of three provinces: Bizkaia, Gipuzkoa, and Araba. In the region of Navarre, the official status is a bit more limited in that only in some parts is Basque treated as an official language (together with Spanish). Of all these four provinces, i.e. the Spanish part of the Basque Country, Gipuzkoa and Bizkaia are the provinces with most Basque speakers, although the number of speakers is lately increasing in Araba. Basque is also spoken in the south of France, in the occidental part of the Département des Pyrénées Atlantiques (Lapurdi, Low Navarre, and Zuberoa are the three Basque provinces), but has no official status there. Nowadays, all adult Basque speakers can be said to be bilingual, either Basque-Spanish or Basque-French.

Historically, Basque is the only known language that remains of those that were spoken in Europe before the Roman conquest (cf. among many others Mítxelena 1968, 1979, Trask 1995, 1997). In fact, Basque is a language isolate with no known relatives and uncertain origins, and the Aquitanian language, which was spoken in the south western part of present day France and in part of the Pyrenees at the time of the Roman conquest, is taken to be the ancestral form of Basque (for detailed accounts, cf. Gorrochategui 1995, Zuazo 1995, Trask 1995, 1997, Lakarra 2005). Basque has been described both in traditional grammars written in French (e.g. Lecluse 1826, Darrigol 1829, Ithurry 1896, Lafitte 1944, Oyharçabal 1987), Spanish (e.g. Campión 1884), Basque (e.g. Goenaga 1978, Txillardegi 1978, Euskaltzaindia 1985, 1987, 1991, 1993,

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1994, 1999), or English (Hualde and Ortiz de Urbina 2003a); and by generative linguists (cf. among many others de Rijk 1969, 1998, 2008, Goenaga 1978, Eguzkitza 1986, Ortiz de Urbina 1989, Laka 1990, Rebuschi 1997, Fernandez 1997, Elordieta 2001).

Most grammarians identify SOV as the ‘neutral’ word order of Basque (among others, cf. de Rijk 1969). Phrase internal order is mostly fixed in Basque, but phrase combination is quite flexible. All the permutations of the constituents in (1) are grammatical.¹

- (1) [Nere anai-a-k] [alaba-ri] [opari bat] [eman dio]
 my brother-D.erg daughter-dat present one give aux
 ‘My brother gave a present to his daughter’

3.2 Existential Quantifiers

The quantifiers presented in this section are ‘intersective’: they quantify over the set denoted by the intersection of the sets denoted by the NP and the VP.

3.2.1 ‘Some’ Quantifiers

There are two quantifiers meaning *some* in Basque: *batzuk* and *zenbait*. They vary in the position relative to the nominal expression they combine with. *Batzuk* only appears postnominally (2), while *zenbait* can appear prenominally or postnominally, (3).

- (2) Lagun batzuk / (*Batzuk lagun) oporretan daude.²
 friend some-abs / some friend-abs holiday-in be.egon.pl
 ‘Some friends are on holiday.’

¹ Different orders produce different prominence configurations, e.g. focus phrases must appear in the immediately preverbal position, changing the basic word order (cf. a.o. Eguzkitza 1986, Ortiz de Urbina 1983, 1989, 1999, Uriagereka 1999, Arregi 2003, Irurtzun 2006). Cf. end of Section 3.2.3.

² Basque, like Spanish (Luján 1981, Schmitt 1992, Fernández Leborans 1999), distinguishes between a locative copula and a characterizing one (Etxepare 2003a). Intuitively, the locative copula *egon* ascribes a temporary property to the subject of predication (ib), whereas the characterizing copula *izan* introduces an inherent property of the subject (ia).

- (i) a. Jon oso barregarria da
 Jon very funny-D is
 ‘Jon is a very funny guy’
 b. Jon oso barregarri dago (mozorro horrekin)
 Jon very funny is-loc costume that-with
 ‘Jon is very funny (in that costume)’

- (3) Zenbait lagun / Lagun zenbait oporretan daude.³
 some friend-abs friend some-abs holiday-in be.egon.pl
 ‘Some friends are on holiday.’

The set these two quantifiers make reference to must always have at least two elements, as is made clear in the translations. *Batzuk* is the plural form of the indefinite *bat* ‘one’ (cf. Section 3.2.3; cf. also Etxeberria 2008, in prep.), to which we add the plural marker *-zuk*. *Zenbait* on the other hand, derives from the combination of the genitive forms **zeren* ‘of it’ and the numeral *bat* ‘one’.⁴ *Zenbait* does also have a plural counterpart formed by adding *-zu*.

- (4) Nere anaia-k zenbait-zu opari ekarri ditu.
 my brother-erg some-pl present-abs bring aux.pl
 ‘My brother has brought some presents.’

Both *batzuk* and *zenbaitzu* can only agree with the verb in plural.

- (5) a. *Nere anaia-k zenbait-zu opari ekarri du.
 my brother-erg some-pl present-abs bring aux.sg
 b. Nere anaia-k opari batzuk ekarri ditu/*du.
 my brother-erg present some-pl-abs bring aux.pl/aux.sg

However, *zenbait* only optionally agrees with the inflected verb. It can agree in plural as in the example in (3) or show no agreement with the inflected verb at all.

- (6) Zenbait lagun / Lagun zenbait oporretan dago.
 some friend-abs friend some-abs holiday-in be.egon.sg
 ‘Some friends are on holiday.’

Singular agreement with the inflected verb is just agreement by default with no correspondence with actual number features. These agreement facts have an influence in the interpretation, e.g. they force distributive readings, they cannot combine with categorical predicates, etc. The reader is referred to Etxeberria and Etxepare (2008, in prep.) for an extensive discussion of these facts and for a possible analysis.

Another difference between these quantifiers is that while *batzuk* can be used to make reference to a set of just two members of whatever the NP denotes, *zenbait* seems to necessarily make reference to a bigger plurality.

³ In the examples in (3), the subjects bear absolutive case and they are unmarked. However, when the word order is [NP+Q], the quantifier is the element that is case marked.

(i) Ikasle zenbait-e-k goxoki-ak jan zituzten.
 student some-ep-erg candy-D.pl-abs eat aux.pl
 ‘Some students ate candies.’

⁴ The ‘*’ in **zeren* means that although the form that appears after it has not been documented it is taken to be the form from which the present-day form *zein*>*zen* derived.

- (7) a. Lagun batzuk etorri dira, Martxel eta Unax hain zuzen ere.
 friend some-abs come aux.pl Martxel and Unax so correctly too
 ‘Some friends have come, specifically Martxel and Unax.’
- b. *Zenbait lagun etorri dira, Martxel eta Unax hain zuzen ere.
 some friend-abs come aux.pl Martxel and Unax so correctly too
 ‘Some friends have come, specifically Martxel and Unax (intended)’

Apart from these differences, one similarity between these quantifiers is that they cannot be combined with the definite determiner (D) (cf. Section 3.5.1); it does not matter whether the D is placed on the nominal expression or on the quantificational element (cf. Etxeberria 2005, 2008, 2009).

- (8) a. [Politikari(*-ak) batzuk] berandu iritsi ziren.
 [politician(-D.pl) some] late arrive aux.pl
 ‘*The some politicians arrived late.’
- a’. [Politikari batzuk(*-ak)] berandu iritsi ziren.
 [politician some(-D.pl)] late arrive aux.pl
 ‘*The some politicians arrived late.’
- b. [Zenbait(*-ak) politikari] berandu iritsi ziren.
 [some(-D.pl) politician] late arrive aux.pl
 ‘*The some politicians arrived late.’
- b’. [Zenbait politikari(*-ak)] berandu iritsi ziren.
 [some politician(-D.pl)] late arrive aux.pl
 ‘*The some politicians arrived late.’

3.2.2 Existential Sentences

There are two ways in which Basque builds existential sentences. The first uses something similar to an expletive subject (like English *there* or French *il*, cf. McNally to appear, Francez 2007, 2009), although strictly speaking Basque lacks expletive subjects.⁵ The second is created by means of ‘locative-inversion’ where the coda – the element that expresses location – is moved to initial position (for the relation between existential sentences and locative constructions, cf. e.g. Lyons (1967), Kuno (1971), Kimball (1973), Clark (1978), Freeze (1992), Rigau (1997), Zeitoun et al. (1999); cf. Francez (2007). Others, e.g. Milsark (1974) have argued that this similarity is superficial, at least in

⁵ As is the case in Maori where they use an element meaning ‘yes’.

- (i) Ae he taniwha.
 yes a taniwha
 ‘Yes, there are taniwhas.’ (from Bauer (1993), cited in McNally (to appear))

some languages). For example, the Finnish example in (9a) is a locative sentence, while the one in (9b) is considered an existential one.

- (9) a. mies on huonee-ssa.
man-nom is room-ines
'The man is in the room.'
- b. huonee-ssa on mies.
room-ines is man-nom
'There is a man in the room.'

However, these two existential constructions are not equally grammatical for all Basque speakers: while the first version is used in the eastern part of the Basque Country, i.e. the three provinces of the French part of the Basque Country and in the eastern part of Navarre, the locative inversion existential is used in the western part of the Basque Country.⁶

The element that is used in Basque to form the first kind of existential construction is the element *ba-* which is attached to the copula *izan* 'be' (cf. Oyharçabal 1984, Etxepare 2003a). The particle *ba-* is related to the positive particle *bai* 'yes'.

- (10) Ba-da euli bat zopan.
yes-is fly one soup-D-in
'There is a fly in the soup.'

In (10), the particle *ba-* is attached to the third person singular form of *izan*, *da* 'is'; it can also be attached to the third person plural form, *dira* 'are' as in (11).

- (11) Ba-dira euli batzuk zopan.
yes-are fly some soup-D-in
'There are some flies in the soup.'

This dedicated existential construction inflects with tense (both in singular and plural) as shown by the examples in (12).

- (12) a. Ba-da euli bat zopan gaur, atzo ere ba-zen euli bat zopan.
yes-is fly one soup-D-in today yest. too yes-was fly one soup-D-in
'There is a fly in the soup today, yesterday there was a fly in the soup too.'
- b. Ba-dira euli batzuk zopan gaur, atzo ere ba-ziren euli batzuk
yes-are fly some soup-D-in today yesterday too yes-were fly some
zopan.
soup-D-in
'There are some flies in the soup today, yesterday there were some flies in the soup too.'

⁶ Right now, I'm unable to tell where exactly the border of these two uses should be (or is) placed and I will leave this for future research.

The second way of creating existential sentences is by means of locative inversion:

- (13) a. Euli bat dago zopan. b. Zopan euli bat dago.
 fly one be.egon.sg soup-D-in soup-D-in fly one be.egon.sg
 ‘A fly is in the soup’ ‘There is a fly in the soup’

The verb used in this case is the copula *egon* – parallel to Spanish *estar* (cf. fn. 2) – in opposition to the first type of existential sentence which uses the copula *izan*. The existential sentence in (13b) can also be pluralized as in (14) and it also inflects for tense, (15).

- (14) Zopan euli batzuk daude.
 soup-D-in fly some be.egon.pl
 ‘There are some flies in the soup’
- (15) a. Zopan euli bat zegoen.
 soup-D-in fly one be.egon.sg.past
 ‘There was a fly in the soup’
- b. Zopan euli batzuk zeuden.
 soup-D-in fly some be.egon.pl.past
 ‘There were some flies in the soup’

Now, how do we know that the sentence in (13a) is a locative sentence and that the one in (13b) is an (locative) existential one? For that, we rely on the *definiteness effect* or *definiteness restriction* (cf. Milsark 1977). In French and in Spanish, for example, there are two different forms for existential sentences and for locatives, in (16a) and (16b) respectively.

- (16) a. There is a man at the door
 French: Il y a un homme à la porte
 Spanish: Hay un hombre en la puerta
- b. The man is at the door
 Spanish: El hombre está en la puerta
 French: L’homme est à la porte

According to the definiteness restriction, it is not possible to have a quantificational noun phrase or a definite one in the pivot position of the sentence in (16a): **Il y l’homme à la porte*, **Hay el hombre en la puerta*. Now, if we try to translate these sentences to Basque (in the area where the locative existential is used), the result is the following:

- (17) a. Atean gizon bat dago. b. Gizona atean dago.
 door-D-at man one be.egon.sg man-D.sg door-D-at be.egon.sg
 ‘There is a man at the door’ ‘The man is at the door’

It is true that it is possible to have a definite noun phrase like *gizona* ‘lit. man-D.sg’ in a construction such as (17a), as in (18). But in this case, the element that expresses location, i.e. the coda, needs to be topicalized and a comma is necessary between the coda and the pivot. Apparently, this blocks the existential interpretation of the sentence.

- (18) Atean, gizona dago.
 door-D-at man-D.sg be.egon.sg
 ‘At the door, there is the man’

In the Basque area where the *ba-* existential sentences are used, the behavior that we obtain parallels the one in French or Spanish. Definites are not allowed in existential sentences and the sentences in (16) are translated as follows:

- (19) a. Bada gizon bat atean. b. Gizona atean da.⁷
 yes-is man one door-D-at man-D.sg door-D-at be.izan.sg
 ‘There is a man at the door.’ ‘The man is at the door’
 c. *Bada gizona atean.
 yes-is man-D.sg door-D-at
 ‘*There is the man at the door.’

So there are two ways to express existential sentences in Basque and there seems to be dialectal variation in their use: the eastern dialects use existential sentences formed with *ba-* while the western dialects use the locative existential (cf. fn. 6). However, this variation does not mean that there is a linguistic border of use/non-use, that is, both constructions are used in both the eastern and western part, but for different uses. Thus, in the western part the sentences in ((10) *Bada euli bat zopan* / (11) *Badira euli batzuk zopan*) are not ungrammatical, but their use is not that of existential sentences, but that of *verum* focus. The *ba-* sentences are used to state that in fact something holds in situations where people would be discussing or doubting it (in this particular case, whether there is a fly in the soup). In fact, it has often been assumed that the particle *ba-* is a marker of positive emphasis; an analysis supported by the relation of this element to the positive particle *bai* ‘yes’ (cf. Altube 1929). Note that *ba-* is also used in yes/no questions as in (20).

- (20) Ba-duzu ogirik?⁸
 yes-have.you bread-part
 ‘Do you have any bread?’

In Basque, negative existentials do not make use of a special negation form and the same negation form as in simple declarative sentences is used: *ez* ‘no’.

⁷ Eastern dialects do not use the locative copula *egon* and the copula *izan* ‘be’ is used to express what in western dialects is expressed by means of *egon* and *izan*.

⁸ The affix *-(r)ik* is the Basque partitive marker (cf. Section 3.5.10; cf. Larramendi 1927, Azkue 1905, 1923; cf. de Rijk 1972 for historical references; cf. also Etxeberria 2010b). The partitive is a polarity item, and it occurs mostly in polarity contexts, in positions in which an absolutive would otherwise occur (see de Rijk 1972).

- (21) a. Ez da eulirik zopan. b. Zopan ez dago eulirik.
 no is fly-part soup-D.in soup-D-in no be.egon fly-part
 ‘There isn’t any fly in the soup’ ‘There isn’t any fly in the soup’

As for the definiteness restriction typically found in existential constructions crosslinguistically (although cf. among others Francez (2007, 2009) where it is argued that the definiteness effect is from illusory to non-existent), it is found in Basque (as we already saw for definites in the examples 16–19) with no exceptions. All Basque strong quantifiers – e.g. *guztiak* ‘all’, *gehienak* ‘most’, etc. – in (22), proportional partitive quantifiers – e.g. *N-etatik asko* ‘many of the N’, etc. – in (23) (cf. Section 3.5.9) as well as definites – e.g. *eulia* ‘the fly’ – in (24) (cf. Section 3.5.1) are excluded from both types of existential sentences.

- (22) a. *Badira euli guztiak/gehienak zopan.
 yes-are fly all-D.pl/most-D.pl soup-D-in
 b. *Zopan euli guztiak/gehienak daude.
 soup-D-in fly all-D.pl/most-D.pl be.egon
- (23) a. *Badira eulietatik asko zopan.
 yes.are fly-D.pl-part many soup-D-in
 b. *Zopan eulietatik asko daude.
 soup-D-in fly-D.pl-part many be.egon
- (24) a. *Bada eulia zopan.
 yes-is fly-D.sg soup-D-in
 b. *Zopan eulia dago.
 soup-D.in fly-D.sg be.egon

3.2.3 Numerals and Modified Numerals

The Basque numeral system is vigesimal.

- (25) Cardinal numbers
- a. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
 zero/huts, bat, bi, hiru, lau, bost, sei, zazpi, zortzi, bederatz
- b. 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
 hamar, hamaika, hamabi, hamairu, hamalau, hamabost, hamasei,
 hamazazpi, hemezortzi, hemeretzi
- c. 20, 21, ... 30, 31, ...
 hoge, hogeita bat hogeita hamar, hogeita hamaika
- d. 40, 41, ... 50, 51, ...
 berroge, berrogeita bat berrogeita hamar, berrogeita hamaika

e.	60	70	80	90
	hirurogei	hirurogeita hamar	laurogei	laurogeita hamar
f.	100	200	1000	
	ehun	berrehun	mila	

Note the irregular forms of the numerals ‘11’, ‘18’, and ‘19’. The construction of long numbers is illustrated by the following example.

- (26) mila bederatzehun eta hirurogeita hamasei
 thousand nine.hundred and sixty.and sixteen
 ‘1976’

In Basque, with the exception of *bat* ‘one’, and in some dialects *bi* ‘two’,⁹ numerals are all prenominal.

- (27) a. adiskide bat a’. *bat adiskide
 fellow one one fellow
 ‘one fellow’
- b. adiskide bi b’. bi adiskide
 fellow two two fellow
 ‘two fellows’
- c. bost/hamar/laurogei/berrehun/hiru mila ikasle
 five/ten/eighty/two hundred/three thousand student

Except for *bat* ‘one’, which shows some restrictions (see below), Basque numerals can easily combine with the D as in e.g. Germanic or Romance languages, a combination that results in a definite and referential interpretation (cf. Etxeberria 2005, in prep.).

- (28) Zazpi lagun-ek bost oilasko-ak jan zituzten.
 seven fellow-D.pl-erg five chicken-D.pl-erg eat aux.pl
 ‘The seven fellows ate the five chickens.’

There is only one situation where *bat* ‘one’ plus the D, i.e. *bat-a* ‘the one’, is grammatical: explicit contrastive contexts, as in (29a). However, note that once you eliminate the element creating the contrast (*beste-a* ‘the other’), the result is ungrammatical, (29b).

- (29) a. Batak ogia ekarri zuen, besteak ardoa.
 one-D.sg-erg bread bring aux.sg other-D.sg-erg wine
 ‘The one brought bread, the other wine’

⁹ In the most western dialect, i.e. in Bizkaia.

- (32) Martxel bost(-en) bat egun egon da Parisen.
 Martxel-abs five-gen one day stay aux.sg Paris-in
 ‘Martxel spent approximately five days in Paris’

When the cardinal numeral to which we add the genitive marker plus *bat* ‘one’ [-en bat] is *bat* ‘one’ as in (33), the interpretation that we get is that of *someone*, or *some or other*. The second *bat* ‘one’ of the construction with no genitive marker can be pluralized: *bat-en batzuk* ‘some.pl or others’.

- (33) a. Bat-en bat etorri da. b. Bat-en batzuk etorri dira.
 one-gen one-abs come aux one-gen some-abs come aux
 ‘Someone came’ ‘Some (pl) came’

In this case, no nominal expression can be combined with the *baten bat* construction as shown by the ungrammaticality of (34a). To make it grammatical we need to introduce the nominal in the place of the first *bat* to which we add the genitive marker, as in (34b). Its meaning is that of ‘some student’, and needs to always be non-specific (cf. Etxeberria in prep.).

- (34) a. *bat-en bat ikasle a’. *ikasle bat-en bat b. ikasle-ren bat
 one-gen one student student one-gen one student-gen one
 ‘some student’

The ungrammaticality of (34a) may be due to the fact that the numeral *bat* needs to always be postnominal. The *bat* ‘one’ in the grammatical (34b) can also be pluralized: *ikasleren batzuk* ‘some students’; the interpretation is again non-specific, just like in the singular case.

In Basque, there are three other ways of expressing *approximately*. All the examples in the example in (35) mean ‘four or five’.

- (35) a. lau edo bost lit. ‘four or five’
 b. lau bost lit. ‘four five’
 c. lau-z-pa-bost from *lau ez bada bost* ‘lit.: four no if-is five’
 i.e. ‘four if not five’

Numerals higher than six cannot use the construction in (35c), but they can use the other two constructions in (35a–b). Alternatively, it is possible to add *bat* ‘one’ at the end of something like (35b) to express the same meaning.

- (36) bederatzi hamar bat
 nine ten one
 ‘nine or ten’

Leaving aside the approximately meaning, it is worth mentioning that the Basque numeral *hamaika* ‘eleven’ is idiomatically used to express ‘countless, a lot’. Note that this numeral shows agreement alternation.

- (37) Hamaika ikasle ikusi dut/ditut.
 eleven student seen aux-sg/aux-pl
 ‘I have seen countless students’

Finally, Basque does not have a monomorphemic equivalent to English ‘no’ that can be used DP internally. To express the same meaning Basque uses the sentential negation plus the expression *bat (bera) ere* ‘not even one’ which is added to the nominal expression.

- (38) a. Ez zen emakume bat bera ere etorri.
 no aux.sg woman one she/he/it even come
 ‘No woman came’
 b. Anek ez zuen goxoki bat bera ere jan.
 Ane-erg no aux.sg candy one she/he/it even eat
 ‘Ane didn’t eat any candy’
 c. Mutil batek berak ere ez zuen dantza egin.
 boy one-erg she/he/it-erg even no aux.sg dance do
 ‘No boy danced’

Alternatively, it is also possible to get the same meaning by using the partitive marker *-(r)ik* added to the noun (see fn. 8; cf. Section 3.5.10). The partitive marker cannot be used in the subject position of a transitive predicate (cf. de Rijk 1972; cf. also Etxeberria 2010b).

- (39) a. Ez zen emakumerik etorri.
 no aux.sg woman-part come
 ‘No woman came’
 b. Anek ez zuen goxokirik jan.
 Ane-erg no aux.sg candy-part eat
 ‘Ane didn’t eat any candy’
 c. *Mutilik ez zuen dantza egin.
 boy-part no aux.sg dance do

3.2.4 Value Judgment Cardinals

Among those Basque quantifiers that could be translated as ‘many’ (or ‘abundant’) we can mention the following: *asko* ‘many’, *ugari* ‘abundant, copious’, *franko* ‘many’, *anitz* ‘many’, *pila bat* ‘lots of’, *hainbat* ‘quite a few’.¹⁰ On the other hand, among those Basque quantifiers meaning ‘few’ (or ‘a few’) we find

¹⁰ *Hainbat* derives from the combination of the genitive forms **haren* ‘of it’ and the numeral *bat* ‘one’.

the following: *gutxi* ‘few’ (and its variant *guti*), *gutxi batzuk* ‘a few’, *pixka bat* ‘a little’, *apur bat* ‘a little’.

These quantifiers also vary in whether they are preposed or postposed with respect to the nominal expression they combine with: *asko* ‘many’, *franko* ‘many’, *anitz* ‘many’,¹¹ and *pilo bat* ‘lots of’, can precede or follow the nominal expression.¹²

- (40) a. *Asko haur etorri ziren.*
many child-abs come aux.pl
‘Many children came.’
- b. *Haur asko etorri ziren.*
child many-abs come aux.pl
‘Many children came.’
- (41) a. *Franko ehiztari ikusi nituen atzo.*
many hunter-abs see aux.pl yesterday
‘I saw many hunters yesterday.’
- b. *Ehiztari franko ikusi nituen atzo.*
hunter many-abs see aux.pl yesterday
‘I saw many hunters yesterday.’
- (42) a. *Anitz ikasle gaixo daude.*
many student-abs sick be.egon
‘Many students are sick.’
- b. *Ikasle anitz gaixo daude.*
student many-abs sick be.egon.
‘Many students are sick.’
- (43) a. *Soldadu-ek pila bat astakeria egin zituzten.*
soldier-D.pl.erg pile one nonsense-abs make aux.pl
‘The soldiers carried out a lot of foolish acts.’

¹¹ The prenominal use of these three quantifiers is almost exclusively limited to the eastern dialects.

¹² In older Basque, *asko* ‘many’ and *franko* ‘many’ could combine with a [NP+partitive case] construction:

- (i) a. *Jostailurik asko erosi zuten.*
toy.part many buy aux
‘They bought many toys’
- b. *Lagunik franko ikusi dut gaur kalean.*
friend.part many see aux today street.in
‘I have seen many friends in the street today’

Although the partitive in quantifier constructions can be said to have been common to all Basque areas, in present day Basque, this use is almost exclusively restricted to one expression: *eskerrik asko* ‘lit.: thank-part many’; cf. de Rijk (1972).

- b. Soldadu-ek astakeria pila bat egin zituzten.
 soldier-D.pl.erg nonsense pile one-abs make aux.pl
 ‘The soldiers carried out a lot of foolish acts.’

On the other hand, *ugari* ‘abundant, copious’ can only appear in postnominal position.

- (44) a. Perretxiko ugari ikusi ditut basoan.
 abundant mushroom-abs see aux.pl wood-D.sg-in
 ‘I have seen many mushrooms in the wood.’
 b. *Ugari perretxiko ikusi ditut basoan.
 abundant mushroom-abs see aux.pl wood-D.sg-in
 ‘I have seen many mushrooms in the wood.’

Also *gutxi* ‘few’, *gutxi batzuk* ‘few’ and *pixka bat* ‘a little’, *apur bat* ‘a little’ are grammatical only when in postnominal position.

- (45) a. Politikari gutxi etorri ziren.
 politician few-abs come aux.pl
 ‘Few politicians came.’
 b. *Gutxi politikari etorri ziren.
 few politician-abs come aux.pl
- (46) a. Politikari gutxi batzuk etorri ziren.
 politician few some-abs come aux.pl
 ‘A few politicians came’
 b. *Gutxi batzuk politikari etorri ziren.
 few some politician-abs come aux.pl
- (47) a. Garazi-k ardo pixka bat edan du.
 Garazi-erg wine little one-abs drink aux.sg
 ‘Garazi has drunk a little wine.’
 b. *Garazi-k pixka bat ardo edan du.
 Garazi-erg little one wine-abs drink aux.sg
- (48) a. Ane-k txokolate apur bat jan du.
 Ane-erg chocolate crumb one-abs eat aux.sg
 ‘Ane has eaten a little chocolate.’
 b. *Ane-k apur bat txokolate jan du.
 Ane-erg crumb one chocolate-abs eat aux.sg

Finally, *hainbat* ‘quite a few’ can only appear in prenominal position.

- (49) a. Hainbat lagun oporretan daude.
 some friend-abs holiday-in be.egon.pl
 ‘Some friends are on holiday.’

- b. *Lagun hainbat oporretan daude.
friend some-abs holiday-in be.egon.pl

Except for *gutxi batzuk* ‘lit.: few some’, which only agrees with the verb in plural, and for *pixka bat* ‘a little’ and *apur bat* ‘a little’, which only agree with the verb in singular (this is default agreement; cf. Etxeberria 2005), all of the other quantifiers mentioned in this section show agreement alternation regardless of their position with respect to the nominal (cf. Etxeberria and Etxepare 2007, in prep.). Hence, the examples in (40–44), (45a), and (49a) can show no agreement with the inflected verb as the following examples show.

- (40') a'. Asko haur etorri zen.
many child-abs come aux.sg
'Many children came.'
- b'. Haur asko etorri zen.
child many-abs come aux.sg
'Many children came.'
- (41') a'. Franko ehiztari ikusi nuen atzo.
many hunter-abs see aux.sg yesterday
'I saw many hunters yesterday.'
- b'. Ehiztari franko ikusi nuen atzo.
hunter many-abs see aux.sg yesterday
'I saw many hunters yesterday.'
- (42') a'. Anitz ikasle gaixo dago.
many student-abs sick be.egon.sg
'Many students are sick.'
- b'. Ikasle anitz gaixo dago.
student many-abs sick be.egon.sg
'Many workers are ill today.'
- (43') a'. Soldadu-ek pila bat astakeria egin zuten.
soldier-D.pl.erg pile one nonsense-abs make aux.sg
'The soldiers carried out a lot of foolish acts.'
- b'. Soldadu-ek astakeria pila bat egin zuten
soldier-D.pl.erg nonsense pile one-abs make aux.sg
'The soldiers carried out a lot of foolish acts.'
- (44') a'. Perretxiko ugari ikusi dut baso-a-n.
mushroom abundant -abs see aux.sg wood-D.sg-in
'I have seen many mushrooms in the wood.'

- (45') a'. Politikari gutxi etorri zen.
 politician few-abs come aux.sg
 'Few politicians came.'
- (49') a'. Hainbat lagun oporretan dago.
 some friend-abs holiday-in be.egon.sg
 'Some friends are on holiday.'

There is another interpretation that *hainbat* can get: 'as many/much as that'. Note that the previous examples given with *hainbat* cannot get this interpretation. In this interpretation *hainbat* 'as many as that' also shows agreement alternation.

- (50) Amaia-k hainbat urte ditu/du.
 Amaia-erg some year aux.pl/aux.sg
 'Amaia is as old as that.'

Another prenominal Basque quantifier formed from the same stem as *hainbat* (namely **haren* 'of it') also has the same meaning: *hainbeste* 'as many as that -distal-'. This is a construction that can also be formed using the genitive form of other demonstratives plus *beste* 'other', that is, *honenbeste* 'as many as this' (from *hau* 'this' marked genitive *honen*) and *horrenbeste* 'as many as that' (from *hori* 'that' marked genitive *horren*) – cf. Section 3.5.1.¹³ These quantifiers can agree with the verb in singular or in plural as the following example shows (the same applies to *hainbat*).

- (51) Amaia-k honen-beste/horren-beste/hain-beste urte ditu/du.
 Amaia-erg this.gen-other/that.gen-other/that.gen-other year aux.pl/aux.sg
 'Amaia is as old as this/as that/as that.'

Now, contrary to what happens with the quantifiers meaning 'some', some of the quantifiers in this section accept the addition of the D.¹⁴ *Asko* 'many' is one such.

¹³ Both *hainbat* and *hainbeste* can be used in comparative structures. *Honesbeste* does not give rise to this comparative structure.

(i) Zuk hainbat/hainbeste diru daukat nik.
 You-erg as much as money have I-erg
 'I have as much money as you'

Thanks to an anonymous reviewer for pointing this out to me.

¹⁴ However, when this happens their behavior is not that of quantifiers (except maybe for *franko* and *gutxi*). Cf. the discussion in examples (60–61).

- (52) Polit asko-a zen opari-a!¹⁵
 nice many-D.sg was present-D.sg
 ‘The present was very nice.’

This *asko-a* however, seems to be more a degree modifier meaning ‘very’ than a quantificational element as we can observe in the English translation in (52). The construction in (52) is equivalent to another construction (more commonly) used to express degree, in (53). Note that in Basque, the presence of the D is obligatory in Adjectival Phrases (cf. among many others, Zabala 1993, 2003, Artiagoitia 2006, Eguren 2006a, Etxeberria in prep.).

- (53) Oso polit*(-a) zen opari-a!
 very nice-D.sg was present-D.sg
 ‘The present was very nice.’

In fact, *asko* with the meaning of ‘very’ is found in some 17th century texts in preadjectival position just as the present form *oso* ‘very’. In (53), it modifies the whole AdjP *fraide deboten* ‘devout friars’ (example from Etcheberry Ziburukoa 1697).

- (54) Asko fraide debot-e-n Aita buruzagi-a.
 many friar devout-D.pl-gen father superior-D.sg
 ‘The superior Father of very devout friars.’

Franko ‘many’ may be used as a degree modifier meaning ‘very’ as well, although its position is necessarily pre-adjectival.

- (55) Franko on-a da!
 many good-D.sg is
 ‘She/he/it is very good!’

Another quantificational element that has been used as a degree modifier combined with adjectives is *gutxi* ‘few’, its meaning ‘not very’ (example from Elissamburu 1890).

¹⁵ *Aski* ‘enough’ (which is not treated in this paper) can also be used in this kind of construction.

- (i) Gizon jator aski-a da hori! (Euskaltzaindia 1994: 107)
 man nice enough-D.sg is that
 ‘That is quite a nice guy!’

Aski can also appear in preadjectival position.

- (ii) Aski polit-a da opari hori!
 nice many-D.sg is present that
 ‘The present is very nice.’

Note that formerly *asko* meant ‘enough’ in the eastern dialects.

- (56) Bere hitz-eta-n da guti sinhesgarri-a,
 her/his word-D.pl-in is few credible-D.sg
 bere agintz-eta-n guti leial-a.
 her/his order-D.pl-in few loyal-D.sg
 ‘She/he is not very credible in her/his words, not very loyal in her/his orders.’

Ugari ‘abundant’ can also appear with the D. In such a case, it is clearly behaving as an adjective (example (57a) is taken from Añibarro 1820).

- (57) a. Zure-tzat Jainkoa beti da franko-a, ugari-a, prestu-a.
 you.sg-ben God-D always is frank-D.sg abundant-D.sg reliable-D.sg
 ‘God will always be frank, abundant, reliable [...] for you.’
- b. Hiztun ederr-a eta ugari-a da gizon hau.
 speaker beautiful-D.sg and abundant-D.sg is man this
 ‘This man is a beautiful and abundant speaker.’

This adjectival usage is available for *gutxi* ‘few’ although it is not very productive nowadays.

- (58) Gauza gutxi-a
 thing few-D.sg
 ‘The small thing’

Despite the possibility these ‘quantifiers’ have of appearing with the D, observe that when this happens they completely lose their quantificational meaning and function as adjectives or degree modifiers. In fact, in all of the examples in (40–47)¹⁶ (some of them repeated here as (59)) the D cannot combine with the quantifier, no matter whether it is placed on the nominal expression or on the quantifier.^{17,18}

¹⁶ Except for *franko* ‘many’ which accepts appearing with the D but only when this is combined with the nominal expression. See example (60).

¹⁷ Although I don’t provide examples here, the singular form of the D (+singular agreement with the verb) does not improve the sentence at all.

¹⁸ A reviewer points out that it is possible to find a few examples of *ugari* ‘abundant, copious’ and *asko* ‘many, much’ followed by a demonstrative (the examples below are taken from *Ereduzko Prosa Gaur* [Modern Exemplary of Prose in Basque], <http://www.ehu.es/euskara-orrria/euskara/ereduzkoa/>):

- (i) Eta gaur, bera ezagutu zuten asko horien ordezkari moduan...
 and today s/he know aux.pl many those.gen representative way.in
 ‘And today, as a representative of those many that got to know her/him...’
 (Martin Ugaldere Ezagutza, *Berria* 2004/11/11).
- (ii) Ba, jaso hau: urteko gau oskarbi horietan botatako ihintzarekin...
 well, take this year.gen night clear sky those.in thrown dew.with
 ‘Well, take this: with the dew fallen in those clear nights of the year...’
 (P. Zabala, *Naturaren Mintzoa*, Alberdania 2000, p. 411).

- (59) a. Nerabe(*-ak) asko berandu iritsi ziren.
teenager(-D.pl) many late arrive aux.pl
'The many teenagers arrive late.' (intended)
- a'. Nerabe asko(*-ak) berandu iritsi ziren.
teenager many(-D.pl) late arrive aux.pl
'The many teenagers arrive late.' (intended)
- b. Perretxiko(*-ak) ugari ikusi ditut baso-a-n.
mushroom(-D.pl) abundant see aux.pl wood-D.sg-in
'I have seen the many mushrooms in the woods.' (intended)
- b'. Perretxiko ugari(*-ak) ikusi ditut baso-a-n.
mushroom abundant(-D.pl) see aux.pl wood-D.sg-in
'I have seen the many mushrooms in the woods.' (intended)
- c. Politikari(*-ak) gutxi iritsi ziren berandu.
politician(-D.pl) few arrive aux.pl late
'The few politicians arrived late.' (intended)
- c'. Politikari gutxi(*-ak) iritsi ziren berandu.
politician few(-D.pl) arrive aux.pl late
'The few politicians arrived late.' (intended)

There are two quantifiers that apparently maintain their quantificational meaning when combined with the D (either sg or pl)¹⁹: *franko* 'many' in (60), and *gutxi* 'few' in (61).^{20,21}

- (60) a. Unai-erg ehiztari-a franko ikusi du gaur.
Unai-erg hunter-D.sg many see aux.sg today
'Unai has seen many hunters today.'

Two comments are in order here: (i) most of the speakers that I have consulted (myself included) regarding this kind of example find them (at least) strange, or even ungrammatical; and (ii) both *asko horien* 'of those many' and *gau oskarbi horietan* 'in those clear nights' in the examples above are anaphoric in that they make reference to a previously mentioned set; note that they cannot be used with a deictic interpretation, that is, it is not possible to use *ikasle asko hauek* 'lit.: student many these' while pointing out a set of students; right now, I do not have an explanation of why this is so. Finally, the reader is referred to Etxeberria and Giannakidou (2010) for a possible syntactic and semantic analysis of this kind of constructions in languages where they are completely grammatical, e.g. Greek, English, Spanish, etc.

¹⁹ Note that when *franko* combines with a plural DP as in (60b) it is interpreted as an adverbial; see below.

²⁰ The Basque Corpus of the XXth Century [http://www.euskaracorpora.net/XXmendea/Konts_arranta_fr.html] shows that the use of *franko* with a D, as in (60), is much more reduced statistically than that of *franko* with no D, as in (41b–b'). Thanks to Patxi Goenaga for pointing this out to me.

²¹ Some speakers do not accept *gutxi+ak* but accept the construction if instead of the D a demonstrative is used.

- b. Unaik ehiztari-ak franko ikusi ditu gaur.
 Unai-erg hunter-D.pl many see aux.pl today
 ‘Unai has seen hunters many times today.’
- (61) a. Helmuga gurutzatu zuten txirrindulari gutxi-ak
 finish line cross aux.pl cyclist few-D.pl-abs
 leher eginda iritsi ziren.
 burst done arrive aux.pl
 ‘The few cyclists that crossed the finish line did so completely exhausted.’
- b. Afaltzeko edan dudan ardo gutxi-ak logura eman dit.
 dinner-gen drink aux.sg wine few-D.sg-erg sleep-will give aux.sg
 ‘The little wine I’ve drunk for dinner made me sleepy.’

However, note that the way in which the D combines with these two quantifiers is different: with *franko* ‘many’, it is the nominal expression that appears with the D; with *gutxi* ‘few’, the D combines with the quantificational expression. Both these quantifiers show some specific behaviour when in these contexts:

Gutxi plus the D must always be used inside relative clauses and there is no other way in which the D can combine with *gutxi*, as the ungrammaticality of (59c) already demonstrated.²²

Franko on the other hand shows differences depending on whether the D is singular or plural. When plural, *franko* seems to be functioning as an adverbial and the sentence in (60b) would be interpreted as ‘Unai has seen hunters many times today’. When D is singular, the use of *franko* is restricted to some specific syntactic contexts, which is what differentiates it from the rest of the quantifiers analysed in this section: it is grammatical in direct object position (60a) and in

²² We could think that the D that appears with *gutxi* in sentences like (61) is the D related to the relative clause. But if this were the case other quantifiers should also allow the D when in relative clauses, and they do not.

- (i) *Helmuga gurutzatu zuten txirrindulari asko-ak
 finish line cross aux.pl cyclist many-D.pl
 leher eginda iritsi ziren.
 burst done arrive aux.pl
 ‘The many cyclists that crossed the finish line did so completely exhausted (intended)’

Furthermore, the fact that *gutxi* appears with the D when in relative clauses is not a necessary condition since it can also appear without it.

- (ii) Helmuga gurutzatu zuten txirrindulari gutxi iritsi ziren leher eginda.
 finish line cross aux.pl cyclist few arrive aux.pl burst done
 ‘A few cyclists that crossed the finish line were completely exhausted’

Another possibility is that *gutxi*, just like numerals, can be definite and referential (cf. Section 3.2.3). This could be correct since the denotation of [*NP+gutxiak*] seems to be indeed referential (cf. Etxeberria 2005 for discussion on this; cf. also Etxeberria in prep.).

the subject position of unaccusative sentences (62a); but quite unexpectedly, it is ungrammatical in the subject of transitive sentences (62b) and as the subject of individual-level predicates (62c).^{23,24}

- (62) a. *Ikasle-a franko etorri zen.*
 student-D.sg many-abs come aux.sg
 ‘Many students came.’
- b. **Ume-ak franko goxoki bat jan du.*
 child-D.sg-erg many candy one eat aux.sg
 ‘Many children ate a piece of candy.’ (intended)
- c. **Modelo-a franko itsusi-a da.*
 model-D.sg-abs many ugly-D.sg is
 ‘Many models are ugly.’ (intended)

Before moving to the next section, I’d like to comment on two other issues: (i) the comparative and superlative forms of *asko* ‘many’, (ii) the specific property of the changing word order of *gutxi* ‘few’.

In order to form the comparative and superlative forms of *asko* ‘many’, we take *gehi* as stem, which is also used to express addition in Basque. To this stem, we can add the comparative suffix *-ago* as in (63a) to create the comparative form *gehiago* ‘more’. For the superlative form, the suffix *-en* is used; and to this construction it is possible (though not necessary) to add the D as shown in (63b-b’). Note that the example in (63b’), with a D attached to the superlative morpheme, is ambiguous between a superlative and a quantificational use.²⁵

- (63) a. *Liburutegi honetan beste hartan baino liburu gehi-ago daude.*
 library this-loc other that-loc than book plus-comp aux
 ‘There are more books in this library than in that one.’
- b. *Liburutegi honek ditu liburu gehi-en*
 library this-erg has book plus-sup
 ‘This library has the most books.’

²³ See Etxeberria (in prep.) for a possible analysis of the behavior of *franko* when combined with a singular DP.

²⁴ Sentence (62c) would be grammatical if *franko* was interpreted as a degree modifier meaning ‘very’ modifying the adjective *itsusi* ‘ugly’ that follows it (cf. example (54) above). However, this is not the interpretation that interests us here.

²⁵ *Gutxi* ‘few’ can also be combined with the comparative and the superlative suffixes as in (ia–b). The difference between *asko* and *gutxi* is that the quantifier reading we just described for *gehi-en* is not found with *gutxi-en*.

- (i) a. *gutxi-ago* b. *gutxi-en*
 few-comp few-sup
 ‘less’ ‘least’

- b'. Liburutegi honek ditu liburu gehi-en-ak
 library this-erg has book plus-sup-D.pl
 'This library has most (of the) books.'

Note that in situations where the superlative interpretation is not allowed, the presence of the D is obligatory (64) (cf. Hualde and Ortiz de Urbina 2003b and Etxeberria 2005 for discussion).

- (64) a. Diputatu gehien*(-ak) berandu iritsi ziren
 M.P. plus-sup-D.pl late arrive aux.pl
 'Most of the MPs arrived late.'
- b. Peruk ikasle gehien*(-ak) izozkiak jaten ikusi zituen.
 Peru-erg student plus-sup-D.pl ice-cream-D.pl eating see aux.pl
 'Peru saw most of the students eating ice-creams.'

Now, as mentioned, *gutxi* 'few' has one unique property: it behaves like focus operators in that it induces a change in the basic word order of the clause (cf. Etxepare 2003b, Etxeberria 2001, in prep.).²⁶ Note that focus phrases in Basque must appear in the immediately preverbal position, which produces a change in the basic SOV Basque word order (cf. a.o. Eguzkitza 1986, Ortiz de Urbina 1983, 1989, 1999, Uriagereka 1999, Arregi 2003, Irurtzun 2006).

- (65) a. *[Peru-k]_F baloi-a zulatu du.
 Peru-erg ball-D.sg-abs burst aux.sg
 'Peru has burst the ball.'
- b. Baloia [Peruk]_F zulatu du.
- c. [Peruk]_F zulatu du baloia.

If we observe the examples offered in this section (except for those in 60a–b) we will notice that this is exactly what happens with *gutxi*. That is, *gutxi* must necessarily occupy the preverbal position, irrespective of its grammatical function; and in case it is moved from this position, the result is ungrammatical as (66b–67b) show.²⁷

²⁶ *Numeral baino gutxiago* 'less than numeral' shows exactly this same behavior, but due to lack of space this quantifier will not be treated extensively in this paper. For more on this quantifier (as well as quantifiers such as *numeral baino gehiago* 'more than numeral') the reader is referred to Etxeberria (2005, in prep.).

²⁷ Note that *gutxi batzuek* 'a few' does not share with *gutxi* the restriction of appearing in preverbal position as the SOV order of the following example clearly shows.

- (i) Tennis jokalaria gutxi batzuek erraketa hautsi dute.
 tennis player few some-erg racket break aux.pl
 'A few tennis players have broken the racket.'

- (66) a. [Tenis jokalaria gutxi-k] hautsi dute erraketa.
 tennis player few-erg break aux.pl racket-D.sg-abs
 ‘Few tennis players have broken the racket.’
 b. *[Tenis jokalaria gutxi-k] erraketa hautsi dute.
- (67) a. Elene-k [liburu gutxi] irakurri ditu aurten.
 Elene-erg [book few-abs] read aux.pl this.year-in
 ‘Elenek has read few books this year.’
 b. *Elenek [liburu gutxi] aurten irakurri ditu.

3.2.5 Interrogatives

The cardinal question word is *zenbat* ‘how many, how much’ and the intersective non-cardinal one is *zer* ‘what’ or *zein* ‘which’ (although not every speaker uses both).

- (68) a. Zenbat ikasle etorri ziren?
 how many student come aux.pl
 ‘How many students came?’
 b. Zenbat ardo edan duzu?
 how much wine drink aux.sg
 ‘How much wine have you drunk?’
- (69) Zer/zein ikaslek gainditu du/dute azterketa?
 what/which student.erg pass aux.sg/aux.pl exam-D.sg
 ‘Which student(s) passed the exam?’

3.2.6 Boolean Compounds

The conjunction to create boolean compounds in Basque is typically *eta* ‘and’.

- (70) Gutxienez bi eta gehienez hamar pertsona sartu daitezke gela horretan.
 at.least two and at most ten person enter can room that-loc
 ‘At least two and at most ten people can enter that room.’

It is possible to use the inclusive conjunction *edo* ‘or’ (as well as the exclusive one: *ala* ‘or’) but only with simple cardinal numerals such as those we saw in Section 3.2.3, or (71) below.

It seems as though the necessity of appearing in preverbal position is a consequence of the negative nature of *gutxi* (and things like *bost N baino gutxiago* ‘less than five N’). Cf. Section 3.5.5; cf. also Etxeberria (in prep.).

The order [numeral-noun-classifier] is the only grammatical order (except for *botila* ‘bottle’, *kopa* ‘cup’ and its kin, which gives a grammatical result, in (74e), but see Section 3.2.8).

- (74) a. *bost buru abel b. *hiru fardo lasto
 five head cattle three bale straw
- c. *lau meta belar d. *hiru barra ogi
 four pile grass three loaf bread
- e. bi botila/kopa esne f. *lau tanta ur
 two bottle/cup milk four drop water
- g. *sei ontza txokolate
 six square chocolate

There is also a more generic classifier, *ale* ‘piece’ which allows counting mass terms that contain small parts or pieces such as rice, coffee, etc.

- (75) a. lau kafe ale b. bi gari ale
 four coffee piece two wheat piece
 ‘four beans of coffee’ ‘two grains of wheat’
- c. bost arroz ale
 five rice piece
 ‘five grains of rice’

As was the case with the more specific classifiers in (73), the classifier cannot appear between the numeral and the noun: **lau ale kafe*.

There exist also some classifier-like elements in Basque. These classifier-like elements aim at expressing a quantity different from the conventional single unit associated with the count noun. So, for example, *lore* ‘flower’, *baina* ‘pod’, or *ardi* ‘sheep’ are count terms to which we can add numerals directly, e.g. *lau lore* ‘four flowers’, *hamar ardi* ‘ten sheeps’. However, these count terms can also be counted in groups, and for this, we need classifier-like terms.

- (76) a. hiru lore sorta b. zazpi baina parda
 three flower bunch seven pod stake
 ‘three bunches of flowers’ ‘seven stakes of pod’
- c. bi mahats mordo d. lau artalde²⁹
 two grape bunch four sheep.group
 ‘two bunches of grapes’ ‘four herds of sheep’

²⁹ *Artalde* ‘herd of sheep’ is a compound noun coming from the combination of *ardi* ‘sheep’ and *talde* ‘group’. The noun *talde* ‘group’ can be used as a classifier-like element with all animals, although *artalde* is the most typical one.

Again, the only grammatical order of the constituents is the one in (76), i.e. [numeral-noun-classifier]: **hiru sorta lore*, **zazpi parda baina*, **bi mordo mahats*, **lau talde ardi*.

3.2.8 Container Expressions and Measure Phrases

In Basque, there are apparently two constructions that function as measure phrases. The only thing that changes between these two constructions is the order of the constituents: [num-noun-classifier] versus [num-classifier-noun].³⁰

- (77) a. *hiru ardo botila* b. *hiru botila ardo*
 three wine bottle three bottle wine
 ‘three bottles of wine’ ‘three bottles of wine’

However, these are just appearances since the construction in (77a) with the order [num-noun-measure] is necessarily a container expression (also known as *individuating expression*) whereas the one in (77b) with the order [num-measure-noun] is necessarily a measure phrase.

The fact that the construction in (77a) is a container expression is shown by the following examples. Among container words we can mention: *botila* ‘bottle’, *kopa* ‘cup’, *edalontzi* ‘glass’, *kaxa* ‘box’, etc.; and all these, of course, could also be considered classifiers, cf. Section 3.2.7, example (74e).

- (78) a. *Izarok [hiru ardo botila] ekarri ditu. Bat hutsik zegoen.*
 Izaro.erg three wine bottle bring aux.pl. one empty aux.sg
 ‘Izaro brought three bottles of wine. One was empty’
- b. *Anek [hiru [ardo botila polit]] ekarri ditu.*
 Ane.erg three wine bottle nice bring aux.pl.
 ‘Ane brought three nice bottles of wine (the bottles are nice)’

In both the examples in (78) it is possible to make reference to the element that contains the liquid, i.e. to the container: in (78a) we can continue talking about the emptiness of one of the bottles mentioned in the previous sentence; in (78b) we also make reference to the container and when we add a modifier *-polit* ‘nice’ in this case – what we modify are the bottles, i.e. the elements that are nice are the bottles.

When the word order of the constituents is the one in (77b), the result is a measure phrase. As a consequence, it is not possible to make reference to the container *botila* ‘bottle’ and a continuation sentence equivalent to the one (78a) is ungrammatical, (79a). Now, when we add a modifier such as *polit* ‘nice’ to something like *hiru botila ardo* as in (79b), what we happen to be modifying is the containee, i.e. the wine, not the container bottle.

³⁰ The reader is referred to Etxeberria and Etxepare (in prep.) for extensive discussion on individuating expressions and measure expression as well as for a possible analysis.

- (79) a. Izarok [hiru botila ardo] ekarri ditu. *Bat hutsik zegoen.
 Izaro.erg three bottle wine bring aux.pl. one empty aux.sg
 ‘Izaro brought three bottles of wine. One was empty’
- b. Anek [hiru botila [ardo polit]] ekarri ditu.
 Ane.erg three bottle wine nice bring aux.pl.
 ‘Ane brought three bottles of nice wine (the wine is nice)’

Furthermore, note that when the measure word used in the construction cannot get the container reading, e.g. *litro* ‘litre’, the necessarily container expression gives an ungrammatical result, in (80a). This is not the case with the necessarily measure expression.

- (80) a. *hiru ardo litro b. hiru litro ardo
 three wine litre three litre wine

There are more differences between the container or the individuating expressions and the measure expressions:

- (i) Constituency: co-occurrence with the D. The container expression can co-occur with the D.

- (81) [hiru [ardo botila]]-ak
 three wine bottle-D.pl
 ‘The three bottles of wine’

In (81), *ardo botila* ‘bottle of wine’ seems to be behaving as a compound and the construction reminds us of simple numeral constructions where syntactically the D attaches to the [num-N] sequence creating a definite, referential expression (cf. Section 3.2.3).

- (82) [hiru [ikasle]]-ak
 three student D.pl
 ‘the three students’

Measure expressions, on the other hand, cannot be combined with the D, showing that their internal syntactic structure is different from container expressions and that the measure word and the nominal expression do not form a constituent.

- (83) *[hiru botila/litro] ardo-ak
 three bottle/litre wine-D.pl

- (ii) Agreement alternation: while the container expressions must necessarily show number agreement with the inflected verb (84), the measure expressions show agreement alternation (85) (as was the case with value judgment cardinals, cf. Section 3.2.4)

- (84) Izarok [hiru ardo botila] ekarri ditu/*du
 Izaro.erg three wine bottle bring aux.pl/aux.sg
 ‘Izaro brought three bottles of wine’

- (85) Izarok [hiru botila ardo] ekarri ditu/du
 Izaro.erg three bottle wine bring aux.pl/aux.sg
 ‘Izaro brought three bottles of wine’

Interestingly, English measure phrases may allow singular agreement with the verb (ex. from Rothstein 2009).

- (86) a. There are/is two cups of wine in this soup
 b. Two pieces of cake are/is enough for you to eat
 c. There are/*is two cups of wine on this tray

Note that the container expression in (86c), *two cups of wine*, necessarily makes reference to the individual cups and allows only plural agreement with the verb.

3.2.9 Units of Time and Distance

In Basque, there are various possibilities to express time expressions meaning English *for*: e.g. instrumental, inessive, or absolutive (if the main verb is stative).

- (87) a. Gizonak hamar orduz lo egin zuen.
 man-D.sg ten hour-instr sleep do aux.sg
 ‘The man slept for ten hours’
 b. Etxean lan egiten du zortzi orduan.
 home-D-at work do aux eight hour-D-ines
 ‘S/he works at home for eight hours’
 c. Ordu bat egon naiz hor kanpoan zure zain.
 hour one stay aux there out-in your wait
 ‘I’ve been out there waiting for you for an hour’

When we use words like *aste* ‘week’, *hilabete* ‘month’, *urte* ‘year’, etc. inside time adverbials the affix *-bete*, from the adjective *bete* ‘full’, is typically used; and it is possible to express the *for* meaning by making use of the instrumental, the inessive or the absolutive: *astebetetz*, *astebetean*, *astebete*. The allative case marker *-ra* plus the relational (genitive) *-ko* also gives the *for* meaning.

- (88) Astebeterako etorri naiz.
 week.full-rako come aux
 ‘I came for a week’

Time expressions that express ‘in’ can be the following:

- (89) Zazpi egunetan itzuliko naiz.
 seven day-ep-loc return aux
 ‘I will return in seven days’

In (89), the indefinite locative marker *-tan* is used. Suffixing *-tan* to a stem ending in a consonant, triggers epenthetic *-e-*, as in *egumetan*. It is possible to express a similar (if not the same) meaning as (89) by using the locative word *barru* ‘interior’ (90a). The inessive form of *barru*, *barruan*, also expresses ‘within’ (90b); the time phrase in this construction is often marked genitive (90c).

- (90) a. Zazpi egun barru itzuliko naiz.
seven day interior return aux
b. Zazpi egun barruan itzuliko naiz.
seven day interior-in return aux
c. Zazpi egunen barruan itzuliko naiz.
seven day-gen interior-in return aux
‘I will return (with)in seven days’

Another time expression is the one in (91) where the [numeral+noun] sequence bears the absolutive case marking:

- (91) Aste batek zazpi egun ditu.
week one-erg seven day aux
‘A week has seven days’ or ‘There are seven days in a week’

Distance between two locations can be expressed using either the construction in (92) or in (93).

- (92) Donostia Bilbotik ehun kilometro(ta)ra dago.
Donostia Bilbo-abl 100 km-indef-all be.egon.sg
‘Donostia is 100 kms from Bilbo’
(93) Bilbotik Donostiara ehun kilometro daude.
Bilbo-abl Donostia-all 100 km be.egon.pl
‘It is 100 kms from Bilbo to Donostia’

Comparatives are formed by attaching the comparative suffix *-ago*. The D that appears after the comparative suffix is optional in the eastern varieties of Basque.

- (94) Jon Mikel baino hiru zentimetro altu-ago-a da.
Jon Mikel than 3 cm tall-comp-D is
‘Jon is three centimeters taller than Mikel’

3.2.10 *A-Quantifiers*

In this section we turn to adverbial expressions that quantify over events. In Basque, the value judgment cardinals (cf. Section 3.2.4) *asko* ‘many, much’, *ugari* ‘abundant, copious’, *franko* ‘many’ (cf. examples (60b)), and *gutxi* ‘few’

can be used as adverbials that quantify over events. Note that the neutral syntactic position of adverbs in Basque is preverbal.

- (95) a. Jon asko etortzen da taberna honetara.
Jon many come aux bar this-indef-all
'Jon comes to this bar many times/a lot'
- b. Ugari ikusi ditu horrelakoak.
many see aux.pl that way-rel-D.pl
'She/he has seen that kind of thing many times'
- c. Unai chiztari-ak franko ikusi ditu gaur.
Unai-erg hunter-D.pl many see aux.pl today
'Unai has seen hunters many times today.'
- d. Gutxi ikusi dut Jon hemen.
few see aux Jon here
'I've seen Jon here few times'

There are four other adverbs denoting frequency that have the meaning of *often* and that could replace the adverbial *asko* in (95a) giving as a result exactly the same meaning: *maiz*, *sarri*, *ardura* (in the eastern dialects), and *usu* (only in the most eastern dialects, especially in Souletin).

Another possible way, in fact more frequent, to get adverbial expressions that quantify over events is to add the indefinite locative marker *-tan* to all the value judgment cardinal and to *maiz* and *sarri* (not to *ardura* and *usu*) (96a) (cf. Section 3.2.4), to the existential quantifiers (96b) (cf. Section 3.2.1) as well as to numerals (96c) (cf. Section 3.2.3).

- (96) a.
- | | |
|------------------------|--------------------------------|
| <i>askotan</i> | many times/often |
| <i>ugaritan</i> | many times/often |
| <i>frankotan</i> | many times/often |
| <i>anitzetan</i> | many times/often |
| <i>pila batetan</i> | many times/often ³¹ |
| <i>maizetan</i> | many times/often |
| <i>sarritan</i> | many times/often |
| <i>hainbatetan</i> | quite a few times |
| * <i>arduratan</i> | many times/often (intended) |
| * <i>usutan</i> | many times/often (intended) |
| <i>gutxitan</i> | few times |
| <i>gutxi batzuetan</i> | few times |

³¹ Two other frequency adverbs derived from *pila batetan* 'many times' are *kristoren pilatan* 'lit. Christ-gen many-indef.loc' which has the meaning 'many many times', and (derived from this last) we can also have *Jesukristoren pilatan* 'lit. Jesus Christ-gen many-indef.loc' which would get the meaning 'many many many times'. Basically, both *kristoren* and *Jesukristoren* are used as degree modifiers.

b.
batzuetan sometimes
zenbaitetan sometimes

c.
bitan twice
hirutan three times
lautan four times
bostetan five times
hamarretan ten times

In order to express ‘once’, the word that is used is *behin*, not *batetan*. However, it is possible to find *bate(t)an* in constructions like *behin bate(t)an* ‘lit. once one.loc’ to express ‘once upon a time’ in opening lines of tales; although *bazen behin* ‘lit. there was once’ is quite common in these contexts.

It is possible to use *behin* combined with the wh-word *noiz* ‘when’, *noizbehin*, to get the meaning ‘sometime, occasionally’ (cf. Section 3.4 for more on *occasionally*).

- (97) *Noizbehin hitzegin zuten.*
 when-once talk aux
 ‘They talked to each other at some point’

Frequency adverbs can also be created with the noun *aldi* ‘time, occasion’ plus the instrumental case marker added usually to numerals and to quantifiers such as *zenbait*, *hainbat*, *batzuk*, but not with *asko* and its kin (except for *anitz*, mostly used in the eastern dialects) or with *gutxi*.

- (98) a.
bi aldiz twice
hiru aldiz three times
lau aldiz four times
 etc.
- b.
aldi batzuez sometimes
zenbait aldiz sometimes
- c.
anitz aldiz many times/often
pila bat aldiz many times/often
hainbat aldiz quite a few times
 **aldi askoz* many times/often (intended)
 **aldi frankoz* many times/often (intended)
 **aldi ugariz* many times/often (intended)
 **aldi gutxiz* few times
 **aldi gutxi batzuez* few times
 etc.

Note that the noun *aldi* ‘time, occasion’ appears in the position where the quantifier allows its nominal expression, and that the instrumental case marker follows the last element in the construction, be it the numeral, the quantifier, or the noun itself.

We get exactly the same meaning as in the previous examples when we add the indefinite locative marker to the noun *aldi*. The difference between the use of the instrumental or the one of the locatives is that the latter can be used with (more) words meaning ‘many’ –*anitz*, *asko*, or *franko*– as well as with *gutxi* ‘few’ and *gutxi batzuk* ‘a few’.

- (99) a.
- | | |
|---------------------|-------------|
| <i>bi alditan</i> | twice |
| <i>hiru alditan</i> | three times |
| <i>lau alditan</i> | four times |
- b.
- | | |
|------------------------|-----------|
| <i>aldi batzuetan</i> | sometimes |
| <i>zenbait alditan</i> | sometimes |
- c.
- | | |
|-----------------------------|-----------------------------|
| <i>anitz alditan</i> | many times/often |
| <i>aldi askotan</i> | many times/often |
| <i>aldi frankotan</i> | many times/often |
| <i>pila bat alditan</i> | many times/often |
| <i>hainbat alditan</i> | quite a few times |
| * <i>aldi ugaritan</i> | many times/often (intended) |
| <i>aldi gutxitan</i> | few times |
| <i>aldi gutxi batzuetan</i> | few times |
- etc.

Finally, the noun *bider* (derived from the dative form of the word *bide* ‘way’) is also used to create frequency adverbs. This noun usually attaches to numerals: *bi bider* ‘two times’, *hiru bider* ‘three times’, *mila bider* ‘a thousand times’, etc. Although it can sometimes be found attached to other quantifiers: *hainbat bider* ‘sometimes’, *zenbait bider* ‘sometimes’ (not *batzuk*), *asko bider* ‘many times’, *anitz bider* ‘many times’, *gutxi bider* ‘few times’. The noun *bider* can also be used with the instrumental -z: *bi biderrez* ‘two times’, *mila biderrez* ‘one thousand times’.³²

We now turn to negative adverbial quantifiers. There are three words in Basque that can be used with the meaning of *never*: *inoiz* (from combining the wh-word *noiz* and the prefix *e-* probably related to negation), *sekula*, *behin ere*.³³ However, in order to get the *never* meaning, the presence of an

³² Thanks to Xabier Artiagoitia for pointing this out to me.

³³ Note the presence of the element *ere*, which means ‘even’ in *behin ere*. This probably relates *behin ere* to focused elements that in Basque need to appear in preverbal position (cf. end of

independent clausemate negation is necessary for these three elements. *Inoiz* and *sekula* can optionally take the intensifier *ere*.

- (100) a. Amaiak ez du inoiz (ere) jolasten.
Amaia-erg no aux ever even play.prog
b. Amaiak ez du sekula (ere) jolasten.
Amaia-erg no aux ever even play.prog
c. Amaiak ez du behin ere jolasten.
Amaia-erg no aux once even play.prog
'Amaia never plays'

Although these in (100) are the most typical order of the constituents, it is also possible to have *inoiz*, *sekula*, and *behin ere* in pre-negative position. The interpretation that we get is exactly the same.

- (101) a. Amaiak inoiz (ere) ez du jolasten.
Amaia-erg ever even no aux play.prog
b. Amaiak sekula (ere) ez du jolasten.
Amaia-erg ever too no aux play.prog
c. Amaiak behin ere ez du jolasten.
Amaia-erg once even no aux play.prog
'Amaia never plays'

Note that the expressions *inoiz* and *sekula* are glossed as *ever* in (100–101); this is exactly why they need the presence of the negation in order to get the *never* meaning. When no negation is present, they behave as NPIs (cf. Section 3.5.10) and can appear in yes/no questions (102a), in the protasis of conditionals (102b), in superlatives (102c), etc.

- (102) a. Inoiz/Sekula etorriko al da?³⁴
ever/ever come al aux
'Will s/he ever come?'
b. Inoiz/Sekula etortzen bada, emaiizu gutun hau.
ever/ever come.prog if.is you.give.him letter this
'If s/he ever comes, give him this letter'
c. Inoiz/Sekula ezagutu dudan krisi ekonomikorik gogorrena da hau.
ever/ever know aux crisis economy-part hard-sup-D is this
'This is the hardest economical crisis that I've ever known'

Section 3.2.4). This element will not be treated in this paper and I will leave it for future research.

³⁴ Some Basque dialects possess overt morphological marker for yes/no questions: *al* is one of them.

There is an exception to the behavior of negative words in the temporal *inoiz* ‘ever’, which can appear without any licenser meaning ‘sometime, on some other occasion’: *Izaro inoiz ikusi dut hemen* ‘I’ve seen Izaro here sometime/on some other occasion’.

3.3 Generalized Universal (Co-intersective) Quantifiers

3.3.1 *D-Quantifiers*

The Basque universal quantifiers are: *guzti* ‘all’, *den* ‘all’, *oro* ‘all’, and *bakoitz* ‘each’.³⁵ These quantifiers always follow the nominal expression.

- (103) a. Ume guzti-ak etorri ziren.
child all-D.pl.abs come aux.pl
‘All of the children came.’
- a’. *Guzti ume-ak etorri ziren.
all child-D.pl.abs come aux.pl
- b. Lagun den-ak festara etorri ziren.
friend all-D.pl.abs party-to come aux.pl
‘All of the friends came to the party.’
- b’. *Den lagun-ak festara etorri ziren.
all friend-D.pl.abs party-to come aux.pl
- c. Ikasle oro-k lan bat egin zuen ikasgai-a
student all-erg work one-abs make aux.sg subject-D.sg-abs
gaindi-tze-ko.
pass-nom-gen
‘All of the students wrote a paper to pass the subject.’
- c’. *Oro ikasle-k lan bat egin zuen ikasgai-a
all student-erg work one-abs make aux.sg subject-D.sg-abs
gaindi-tze-ko.
pass-nom-gen
- d. Ikasle bakoitz-a-k abesti bat abestu zuen.
student each-D.sg-erg song one-abs sing aux.sg
‘Each student sang a song.’

³⁵ *Guzti* and *den* have different origins. *Guzti* historically derived from an adjective, *-ti* is a suffix that creates adjectives (see Etxeberria 2005). *Den* derived from the relative form *den*; *dena*, a free relative, would mean ‘what there is’, implying that we make reference to ‘everything there is’, probably due to the D. However, nowadays they are not considered adjectives, cf. Etxeberria (2005).

- d'. *Bakoitz ikasle-a-k abesti bat abestu zuen.
 each student-D.sg-erg song one-abs sing aux.sg

Where we find variation is in the necessity of these universal quantifiers to appear with the D *-a(k)* (cf. Section 3.5.1). *Guzti* ‘all’, *den* ‘all’, and *bakoitz* ‘each’ must necessarily appear with the D as shown in (104–106), and the D must combine with the quantifier, not with the nominal expression as the (b) examples show.³⁶

- (104) a. Ume guzti*(-ak) etorri ziren.
 child all-D.pl.abs come aux.pl
 ‘All of the children came.’
 b. *Ume-ak guzti etorri ziren.
 child-D.pl.abs all come aux.pl
- (105) a. Lagun den*(-ak) festara etorri ziren.
 friend all-D.pl.abs party-to come aux
 ‘All of the friends came to the party.’
 b. *Lagun-ak den festara etorri ziren.
 fan-D.pl.abs all party-to come aux
- (106) a. Ikasle bakoitz*(-a-k) abesti bat abestu zuen.
 student each-D.sg-erg song one-abs sing aux.sg
 ‘Each student sang a song.’
 b. *Ikasle-a-k bakoitz abesti bat abestu zuen.
 student-D.sg-erg each song one-abs sing aux.sg

The only one that need not appear with the D is *oro* ‘all’ (103c), repeated as (107).

- (107) Ikasle oro-k lan bat egin zuen ikasgaia gaindi-tze-ko.
 student all-erg work one-abs make aux.sg subject-D.sg-abs pass-nom-gen
 ‘All of the students must write a paper to pass the subject.’

This quantificational expression can optionally appear with the D. When this is the case, the D must obligatorily combine with the nominal expression, not with the quantifier (*contra* the rest of Basque universal quantifiers, cf. 104–106).

- (108) a. [Ikasle-ek oro-k] lan bat egin zuten ikasgaia
 student-D.pl.erg all-erg work one-abs make aux.pl subj-D.sg
 gaindi-tze-ko.
 pass-nom-gen
 ‘All the students must write a paper to pass the subject.’

³⁶ Etxeberria (2005, 2009), Etxeberria and Giannakidou (2010), Giannakidou (2004) argue that the QP internal D acts as the quantificational domain restrictor.

- b. *[Ikasle oro-ek] lan bat egin zuten ikasgaia gaindi-tze-ko.
 student all-erg work one-abs make aux.pl subj.-D.sg pass-nom-gen

The D can be replaced by a demonstrative (109). Note that the case mark that appears in the demonstrative must also appear in the quantifier: ergative in (109a), comitative in (109b).

- (109) a. [Ikasle hauek oro-k] lan bat egin zuten ikasgaia
 student these.erg all.erg work one-abs make aux.pl subj-D.sg
 gaindi-tze-ko.
 pass-nom-gen
 ‘All these students must write a paper to pass the subject.’
- b. [Lagun hauek-in oro-rekin] joango naiz.
 friend these-com all-com go.fut aux.sg
 ‘I’ll go with all these friends.’

A similar construction is also available to the quantifiers *guzti* ‘all’ and *den* ‘all’. The difference between these two quantifiers and *oro* ‘all’ is that the former must necessarily appear with the D, always creating this sequence [Q-D] in order for the construction to be grammatical (cf. 104–106). Again, both the demonstrative that combines with the nominal and (in this case) the D combined with the quantifier need be case-marked.

- (110) [Ume hauek guzti-ak/den-ak] berandu iritsi ziren.
 child these.abs all-D.pl.abs late arrive aux.pl
 ‘All these children arrived late.’

One very interesting property of the universal quantifiers that can combine with a [NP+dem] or [NP+D] sequence is that they behave as floating quantifiers and not be adjacent to the N (cf. Section 3.5.20).

- (111) a. Ikasle hauek lan bat egin beharko dute orok.
 student these.erg work one make must aux all-erg
 ‘These students must write a paper to pass the subject all.’
- b. Ume hauek berandu iritsi ziren guzti-ak.
 child these.abs late arrive aux.pl all-D.pl.abs
 ‘These children arrived late all.’
- c. Politikari hauek gezurrak esan zituzten den-ek.
 politician these.erg lie-D.pl-abs say aux.pl all-D.pl.erg
 ‘These politicians told lies all.’

These are the forms mostly used in the Basque literary tradition as well as the ones preferred by the Academy of the Basque Language. However, there is still another way in which the universal quantifier and the demonstrative can be combined, [N-Q-Dem], exemplified in (112). In this case, it is only the

demonstrative that bears the case marking. Note that the construction in (112) is available only for *guzti* though.

- (112) a. [Ikasle guzti hauek] berandu etorri ziren.
 student all these.abs late come aux.pl
 ‘All of these students arrived late.’
- b. *[Ikasle den hauek] berandu etorri ziren.
 student all these.abs late come aux.pl
- c. *[Ikasle oro hauek] berandu etorri ziren.
 student all these.abs late come aux.pl

The only universal quantifier that is unable to combine with a demonstrative is *bakoitz* ‘each’, no matter where the demonstrative appears.³⁷ In order for *bakoitz* ‘each’ to be grammatical, it must appear with the D as in (113a).

- (113) a. Ikasle bakoitz-a-k izozki bat jan zuen.
 student each-D.sg-erg ice-cream one-abs eat aux.sg
 ‘Each student ate an ice-cream.’
- b. *Ikasle bakoitz honek izozki bat jan zuen.
 student each this.erg ice-cream one-abs eat aux.sg
- c. *Ikasle honek bakoitz izozki bat jan zuen.
 student this.erg each ice-cream one-abs eat aux.sg

One other difference between *bakoitz* ‘each’ and the rest of the Basque universal quantifiers is that *bakoitz* can only appear with the singular version of the D, not with the plural one.

³⁷ It is possible to find *bakoitz* ‘each’ combined with a demonstrative in the Basque literature tradition, a use that is lost in present-day Basque. However, in such contexts, its meaning is clearly not ‘each’, but ‘unique’, equal to the current *bakar* ‘unique’, which is an adjective.

- (i) Hasera-ko hizkuntza bakoitz hura.
 beginning-rel language unique that
 ‘That initial unique language.’

Thus, *bakoitz* can be argued to have become a Q from an adjective (as is argued for *guzti*, *den*, *gehien* -cf. Etxeberria 2005); in fact, note that that was actually its original use as the following examples also corroborate.

- (ii) Jainko-a-ren seme bakoitz-a.
 God-D.sg-gen son unique-D.sg
 ‘The unique son of God’
- (iii) Guk dugu sinhesten eta ezagutzen Iainko bat bera, eta hura dela esentia bakoitz bat.
 ‘We believe in and know one God, who is a unique essence.’

Sentence (ii) would nowadays mean ‘each son of God’, but its real meaning is ‘the unique son of God’. In (iii) on the other hand – example taken from Leizarraga (1571) –, *bakoitz* ‘unique’ combines with *bat* ‘one’, a usage that is clearly ungrammatical in present-day Basque.

- (114) *Ikasle bakoitz-ek izozki bat jan zuten.
 student each-D.pl.erg ice-cream one-abs eat aux.pl

The other universal quantifiers (except for *oro* ‘all’) can appear with the singular D.

- (115) a. Ane-k [etxe guzti-a] garbitu du.
 Ane-erg house all-D.sg.abs clean aux.sg
 Lit.: ‘Ane has cleaned up all the house.’
 b. Ane-k [etxe den-a] garbitu du.
 Ane-erg house all-D.sg.abs clean aux.sg
 Lit.: ‘Ane has cleaned up all the house.’
 c. *Ane-k [etxe-a oro] garbitu du.
 Ane-erg house all-D.sg.abs clean aux.sg

Here the quantificational expressions are interpreted as making reference to the totality of the house; for the sentence to be true no part of this house should be found unclean.³⁸ This interpretation is not available for *bakoitz* ‘each’ though.

- d. *Ane-k [etxe bakoitz-a] garbitu du.
 Ane-erg house all-D.sg.abs clean aux.sg
 ‘Ane has cleaned up all the house (intended)’

3.3.2 *A-Quantifiers*

In the adverbial domain Basque *beti* is the equivalent of English *always*.

³⁸ There is another element in Basque that may be used to express the same meaning: *oso* ‘whole’, a qualifying adjective that is commonly used as a degree modifier meaning ‘very’ (see Section 3.2.4).

- (i) Jon-ek etxe oso-a garbitu du.
 Jon-erg house entire-D.sg.abs clean aux.sg
 ‘Jon has cleaned the entire house.’

Despite the initial similarity, there’s a clear-cut distinction between the universal quantifiers and *oso* ‘whole’. While *guzti* ‘all’ and *den* ‘all’ can be combined with mass terms, this is not possible for *oso* ‘whole’.

- (ia) Mattinek ron guzti-a/den-a edan du.
 Mattin-erg rum all-D.sg.abs/all-D.sg.abs drink aux.sg
 ‘Mattin has drunk all of the rum.’
 (iib) *Mattinek ron oso-a edan du.
 Mattin-erg rum entire-D.sg.abs drink aux

- (116) Pellok beti autobusa hartzen du ikastolara joateko.
 Pello-erg always bus-D.sg take.prog aux school-to go-rel
 ‘Pello always takes the bus to school.’

Beti can be modified by the operators *ia* ‘almost’ and *kasik* ‘almost’.³⁹

- (117) Pellok ia/kasik beti autobusa hartzen du ikastolara joateko.
 Pello-erg almost always bus-D.sg take.prog aux school-to go-rel
 ‘Pello almost always takes the bus to school.’

When combined with the adverb *beti*, *ia* must necessarily precede the adverbial: *ia beti*, **beti ia*. However, *kasik* can be found either in the preadverbial or postadverbial position: *kasik beti*, *beti kasik*.⁴⁰

The universal quantifiers that we presented in the previous section can also give us an adverbial expression if we add to them the inessive.

- (118) Jon moztu egiten da bizarra kentzen duen
 Jon cut do.prog is beard take.out aux
 guztietan/denetan/orotan/bakoitzean
 all-D.pl-in/all-D.pl-in/ all-in/each-D.sg.in
 ‘Jon cuts himself whenever he shaves’

We get exactly the same meaning when we add the noun *aldi* ‘time, occasion’.

- (119) a. *aldi guztietan* all of the times ≈ every time
 b. *aldi denetan* all of the times ≈ every time
 c. *aldi orotan* all of the times ≈ every time
 d. *aldi bakoitzean* each time

Note that the noun *aldi* ‘time, occasion’ appears in the same position where these quantifiers accept the nominal expression, i.e., *aldi* appears necessarily in prequantifier position.

³⁹ There is third operator that functions as *almost* that will not be treated in this paper: *abantzu*.

- (i) Hamabiak abantzu dira.
 twelve-D.pl almost are
 ‘It’s almost twelve o’clock’

This operator is restricted to eastern dialects.

⁴⁰ *Ia* and *kasik* can combine with NPs, postpositional phrases, VPs, or even a full clause. Usually, the phrase initial position is the most common position (ia), but they can also appear in final position, in which case they seem to form an independent intonational unit (ib). The intermediate position is ungrammatical.

- (i) a. *ia/kasik mundu guztian* ‘lit.: almost world all-D-in;
 in almost the whole world’
 b. *mundu guztian, ia/kasik*
 c. **mundu ia/kasik guztian*

A weakened form of the quantifier *oro* ‘all’, the suffix *-ero*, creates adverbs of frequency by attaching to a noun and expresses a recurrent pattern of time, as in (120).

- | | | | |
|-------|----|-----------------------------------|---------------------|
| (120) | a. | <i>orduero</i> | every hour/hourly |
| | b. | <i>ordu erdiro</i> | every half hour |
| | c. | <i>egunero</i> | every day/daily |
| | d. | <i>astero</i> | every week/weekly |
| | e. | <i>hilero</i> / <i>hilabetero</i> | every month/monthly |
| | f. | <i>urtero</i> | every year |
| | g. | <i>goizero</i> | every morning |
| | h. | <i>arratsaldero</i> | every afternoon |
| | i. | <i>gauero</i> | every night |
| | j. | <i>igandero</i> | every Sunday |

The noun the suffix *-ero* attaches to does not need to be a period noun like those we have in the example (120). The suffix *-ero* can also be added to nouns that denote a recurring activity: *otorduero* ‘at every meal’.⁴¹

3.3.3 Universal Quantifiers Based on Interrogatives

Basque has a productive process of forming (free choice) universals by prefixing *edo* ‘or’ to the interrogative bases.⁴²

- | | | |
|-------|----|--|
| (121) | a. | Edo-nor/edo-zein pasa daiteke zulo horretatik.
or who/or who pass can hole that-from
‘Anyone at all can get through that hole’ |
| | b. | Edo-nork/edo-zeinek egin dezake hori.
or who.erg/or who.erg do can that
‘Anyone at all can do that’ |
| | c. | Jon edo-zer egiteko gai da.
Jon edo-what do able aux
‘Jon is able of doing anything at all’ |
| | d. | Edo-non erosi dezakezu opari bat.
or-where buy can present one
‘You can buy a present anywhere at all’ |

⁴¹ In the eastern dialects they used the unweakened form *oro* instead of the weakened suffix *-ero*: *egunoro* ‘every day, daily’, *hiloro* ‘every month, monthly’. In Souletin *oro* is used not as a suffix, but as a quantifier to which the instrumental case marker is attached: *egun oroz* ‘every day, daily’, *hil oroz* ‘every month, monthly’.

⁴² Zuazo (2008) argues that the free choice universal *edo*+*interrogative* is a feature of western Basque.

- e. Edo-noiz etor zaitezke gure etxera.
or-when come can our house-to
'You can come to our house anytime you want/whenever'
- f. Edo nola eginda ere, ondo egingo duzu.
or-how do even well do aux
'Anyway you do it, it will be ok'

We get equivalent meanings by adding the noun *nahi* 'desire' to the interrogatives. In this case, *nahi* follows the interrogative.

- (122) a. *nor-nahi* 'whoever, anyone at all'
b. *nor-nahik* 'whoever.erg, anyone at all'
c. *zer-nahi* 'whatever, anything at all'
d. *non-nahi* 'wherever, anywhere at all'
e. *noiz-nahi* 'whenever, anytime at all'
f. *nola-nahi* 'however, anyhow'

3.4 Proportional Quantifiers

3.4.1 D-Quantifiers

To express the proportional quantifier *most* Basque uses the superlative form of the value judgment cardinal *asko* 'many, much': *gehien*, formed by adding the suffix *-en* to the stem *gehi*, which is also used to express addition in Basque (cf. Section 3.2.4; example (63)). In order to get the quantificational interpretation it is necessary to add the D to *gehien*. It is possible not to add the D to *gehien*, in such a case the interpretation we get is only the superlative one, as in (123a). Now, when the construction we have is *gehien-ak*, i.e. with the D, the result is ambiguous between a superlative and a quantificational use, in (123b).

- (123) a. Liburutegi honek ditu liburu gehi-en
library this-erg has book plus-sup
'This library has the most books.'
- b. Liburutegi hon-e-k ditu liburu gehi-en-ak
library this-ep-erg has book plus-sup-D.pl
'This library has most (of the) books.'

Now, interestingly, in situations where the superlative interpretation is not allowed, i.e. in situations where only the quantificational interpretation is possible, the presence of the D is obligatory (124) (cf. Hualde and Ortiz de Urbina (2003b); cf. Etxeberria (2005) for extensive discussion and a possible analysis; cf. also Etxeberria (in prep.)).

- (124) a. Langile gehien*(-ak) berandu iritsi ziren
 worker plus-sup-D.pl late arrive aux.pl
 ‘Most of the workers arrived late.’
- b. Peruk ikasle gehien*(-ak) izozkiak jaten ikusi zituen.
 Peru-erg student plus-sup-D.pl ice-cream-D.pl eating see aux.pl
 ‘Peru saw most of the students eating ice-cream.’

Expressions of percentage are formed by adding the genitive suffix *-ko* to the numeral *ehun* ‘a hundred’. The number follows this expression:

- (125) ehun-e-ko bost
 hundred-ep-gen five
 ‘five per cent’

When we add a nominal expression to this percentage expression, the N must precede it and needs to appear with the genitive marker *-en*.⁴³

- (126) Ikasgela honetako ikasle*(en) ehuneko bost euskalduna da.
 classroom this.gen student-gen.pl hundred-gen five Basque is
 ‘Fifty-two per cent of the students in this class are Basque.’

Some proportional (partitive) quantifiers are formed by using the ablative marker *-tik* ‘of’. One possibility is to attach the ablative marker *-tik* to the numeral that expresses the totality from which we take a part, as in (127a).

- (127) a. Hamarr-e-tik zazpi poetek esna amets egiten dute.
 ten-ep-abl seven poet-erg awake dream do aux
 ‘Seven out of ten poets daydream’

The ablative marker can also be attached to the nominal expression; in this case the order of the elements is different from the one in (127a) and the nominal expression appears just in between the two numerals as shown in (127b). The meaning we get is exactly the same as before.

⁴³ The suffix *-ko* is usually treated as a postposition due to the fact that it attaches to Postpositional Phrases (ia). It’s been described as locative genitive (ib).

- (i) a. Laguneki-ko harremana b. Donostia-ko hondartza
 friend-with-ko relationship-D Donostia-ko beach-D
 ‘The relationship with the friend’ ‘The beach from Donostia’

The suffix *-(r)en* on the other hand attaches to a DP. Note that (ib) with *-(r)en* would be ungrammatical.

- (ii) a. Ama-ren etxea b. *Donostia-ren hondartza
 mum-ren house-D *Donostia-ren beach-D
 ‘My mum’s house’

Cf. among many others Euskaltzaindia (1991), de Rijk (2008).

- b. Hamar poeta-tik zazpik esna amets egiten dute.
 ten poet-abl seven-erg awake dream do aux
 ‘Seven out of ten poets daydream’

A third possibility is to have the nominal expression in the first position of the constituent with the genitive marker *-en*. In this case, the ablative case *-tik* attaches to the first numeral (to the one that expresses the totality). Again, the meaning we get parallels the meanings of (127a–127b).

- c. Poeten hamarr-e-tik zazpik esna amets egiten dute.
 poet-gen ten-ep-abl seven-erg awake dream do aux
 ‘Seven out of ten poets daydream’

Fraction expressions are also created by adding the genitive marker *-en* to the cardinal:

- (128) a. *seiren* ‘sixth (part)’
 b. *zazpiren* ‘seventh (part)’
 c. *hamarren* ‘tenth (part)’
 d. *ehunen* ‘hundreth (part)’
 etc.

Small fractional numerals are formed in an irregular way: *erdi* ‘half’, *heren* ‘third’, *laurden* ‘fourth’.

To all these fractional numerals we add numerals to get fraction expressions.

- (129) a. *erdi bat* ‘one-half’
 b. *heren bat* ‘one-third’
 c. *laurden bat* ‘one-fourth’
 d. *bosten bat* ‘one-fifth’
 e. *seiren bat* ‘one-sixth’

Note that fractional numerals are basically nouns since just like nominal expressions they can combine with numerals as well as with quantifiers.

- (130) a. *tarta erdi bat* ‘one half of a cake’
 b. *tarta erdi asko* ‘many half-cakes’
 c. *bi heren* ‘two thirds’
 d. *hiru laurden* ‘three quarters’

It is possible to add a nominal to the fraction expressions in (129), with the noun marked with the genitive case *-en*.

- (131) a. *Ikasleen heren bat berandu etorri zen.*
 student-D.pl.gen third one late come aux
 ‘One-third of the students came late’

- b. Liburuaren laurden bat irakurri nuen.
 book-D.sg.gen quarter one read aux
 ‘I read a quarter of the book’

The fractional numeral *erdi* ‘half’ typically appears with the plural version of the D as in (132a); in this case, the speaker would be talking about one part of a totality with different unities.⁴⁴ However, when the speaker is talking about one part of a unique totality *erdi* ‘half’ can also appear with the singular version of the D, as in (132b).

- (132) a. Ikasleen erdi-ak berandu etorri zen.
 student-D.pl.gen half-D.pl late come aux
 ‘Half of the students came late’
- b. Martxelek laranjaren erdi-a jan zuen.
 Martxel-erg orange-gen half-D.s eat aux
 ‘Martxel ate half of the orange’

There are two other very interesting properties that *erdi* ‘half’ shows: First, when the nominal expression it combines with is a mass term, the singular D is needed and the noun bears genitive case (133).⁴⁵

- (133) azukrearen/esnearen erdi*(-a)
 sugar-D.gen/milk-D.gen half-D.sg
 ‘half of the sugar/milk’

Second, when the nominal expression *erdi* ‘half’ combines with is count, the genitive marker appears to be optional; this optionality has an effect on the interpretation.

- (134) a. sagarraren erdi*(-a) b. sagar erdi*(-a)
 apple-D.sg-gen half-D.sg apple half-D.sg
 ‘half of the apple’ ‘half apple’

⁴⁴ According to some speakers, both the plural and the singular D are equally grammatical in (131a) with no change in meaning.

(i) Ikasleen erdi-a berandu etorri zen.
 student-D.pl.gen half-D.sg late come aux
 ‘Half of the students came late’

The construction in (i) parallels the construction of languages like Spanish (*la mitad de los N* ‘lit.: the.sg half of the N’) or French (*la moitié des N* ‘lit.: the half of the N’).

⁴⁵ In Basque, mass terms must appear with the D. Etxeberria (2005, 2010a) argue that mass terms are number neutral in that they do not bear number morphology at all and that the singular agreement with the verb and with other elements is the result of the default status of the singular (see Delfitto and Schrotten 1991, Doetjes 1997, Dayal 2004, Krifka 2004 among others).

Finally, both *erdi* ‘half’ and *laurden* ‘fourth, quarter’ are usually used with no D when expressing measures: *ordu erdi* ‘lit.: hour half’, *ordu laurden* ‘lit.: hour quarter’, *metro erdi* ‘lit.: meter half’, etc.

Among fraction expressions should also be mentioned *gehiengo* ‘majority’. This fraction expression needs to appear with the singular D or with *bat* ‘one’ and the noun that combines with *gehiengo* ‘majority’ must bear genitive case *-en*. Basque also has a word for ‘minority’: *gutxiengo* (135c,d).

- (135) a. *Ikasleen gehiengo-ak ezezkoa bozkatu zuen.*
 student-D.pl.gen majority-D.sg.erg negative vote aux
 ‘The majority of the students voted no’
- b. *Ikasleen gehiengo (handi) batek ezezkoa bozkatu zuen.*
 student-D.pl.gen majority big one-erg negative vote aux
 ‘A (great) majority of the students voted no’
- c. *Ikasleen gutxiengo-ak bozkatu zuen ezezkoa.*
 student-D.pl.gen minority-D.sg.erg vote aux negative
 ‘The minority of the students voted no’
- d. *Ikasleen gutxiengo (handi) batek bozkatu zuen ezezkoa.*
 student-D.pl.gen minority big one-erg vote aux negative
 ‘A (great) minority of the students voted no’

3.4.2 A-Quantifiers

In order to express *mostly* in Basque the inessive is attached to the proportional quantifier *gehien-ak* ‘most’: *gehienetan* ‘mostly, most of the times’.

- (136) *Nire laguna berandu iristen da gehienetan.*
 my friend-D.sg late arrive aux most-D.pl-in
 ‘My friend arrives late mostly/most of the time’

Now, in order to express the meaning of *mostly* in sentences such as ‘women voted mostly for Obama’, Basque uses *gehienbat* ‘lit.: most-one’, as shown in (137).⁴⁶

- (137) *Emakumeek gehienbat Obamaren alde bozkatu zuten.*
 women-D.pl most-one Obama-gen side vote aux
 ‘Women voted mostly for Obama’

⁴⁶ *Gehiengo-a* ‘majority-D’ could replace *gehienbat* in (137).

- (i) *Emakumeen gehiengo-ak Obamaren alde bozkatu zuten.*
 women-D.pl-gen majority-D.sg-erg Obama-gen side vote aux
 ‘Women voted mostly for Obama’

However, as we have already seen in the previous section, *gehiengo* is not an adverb.

It is possible to create other A-quantifiers by using the inessive as in (138a) (cf. Section 3.2.4 for other frequency adverbs). One other way to create adverbs is by adding the adverbializing suffix *-ki*, (138b,c).

- (138) a. *Gizonezkoak normalean emakumezkoak baino altuagoak dira.*
 men-D.pl usually women-D.pl than tall-comp-D.pl are
 ‘Men are usually taller than women’
- b. *Javi normalki iruzkin laburren zale da.*
 Javi normally/usually comment short fan is
 ‘Javi is normally/usually fan of short comments’
- c. *Martxel ez da eskuarki etxetik urruntzen.*⁴⁷
 Martxel no is usually home-abl move-away
 ‘Martxel does not usually move away from home’

To express *occasionally*, Basque has a very large number of adverbial expressions built by using *noiz* ‘when’, *behin* ‘once’, *edo* ‘or’ combined in various ways and by making use of various case markers. The suffix *-ka* is the iterative suffix.

- (139) a. *noiz behin* ‘lit.: when once’
 b. *noiz behin-ka* ‘lit.: when once-ka’
 c. *noiz-ean behin* ‘lit.: when-ines once’
 d. *noiz-ean behin-ka* ‘lit.: when-ines once-ka’
 e. *noiz-ik behin* ‘lit.: when-part once’
 f. *noiz-ik behin-ean* ‘lit.: when-part once-ines’
 g. *noiz-ik behin-ka* ‘lit.: when-part once-ka’
 h. *noiz edo behin* ‘lit.: when or once’
 i. *noiz edo noiz* ‘lit.: when or when’
 j. *noiz-ean noiz* ‘lit.: when-ines when’
 k. *noiz-ik noiz-era* ‘lit.: when-part when-allat.’
 l. *noiz-etik noiz-era* ‘lit.: when-abl when-allat.’
 m. *behin edo behin* ‘lit.: once or once’
 n. *behin edo beste* ‘lit.: once or other’
 o. *aldi-an behin* ‘lit.: occasion-ines once’

To express *rarely* there are three options in Basque.

⁴⁷ *Eskuarki* can also be used as the equivalent of English *certainly* or *surely*.

- (i) *Futbolari hau ez da ligako onena izango eskuarki.*
 football-player this no is league-rel best-D.sg be surely/certainly
 ‘This football player will certainly/surely not be the best of the league’

- (140) a. *inoiz edo behin* ‘lit.: ever or once’
 b. *neke-z* ‘lit.: tiredness-inst’
 c. *oso gutxi-tan* ‘lit.: very few-loc’

We get a similar expression with: *ozta-ozta* ‘hardly’, *ia(-ia)* ‘hardly, rarely (lit.: almost-almost)’; in both negative and positive contexts *apenas*, borrowed from Spanish, can also be used with the *hardly* meaning: (i) *Ez du apenas irakurtzen* ‘S/he hardly reads’; (ii) *Apenas irakurtzen du* ‘S/he hardly reads’.

3.5 Follow Up Questions

3.5.1 Definite NPs

3.5.1.1 Definite Determiner

The Basque D is a bound morpheme that takes the phonetic forms [-a] (when singular) and [-ak] (when plural) and which is historically derived from the distal demonstrative (see below).⁴⁸ In western varieties there is also a proximate plural D *-ok*.⁴⁹

- (141) a. *gizon-a* b. *gizon-ak*
 man-D.sg man-D.pl
 ‘the man’ ‘the men’
- c. *gizon txiki-a* d. *gizon txiki-ak*
 man small-D.sg man small-D.pl
 ‘the small man’ ‘the small men’

One very interesting property of Basque is that bare nouns cannot appear as arguments and the overt presence of the Basque D is obligatory for sentences to

⁴⁸ Some authors argue that the plural form of the Basque D [-ak] is a single element (cf. Goenaga 1978, 1991, Euskaltzaindia 1993, Artiagoitia 1997, 1998, 2002, 2003, 2004, Rodriguez 2003, Trask 2003). Etxeberria (2005, in prep.), on the other hand, defends that singular [-Ø] and plural markers [-k] and D are base-generated in different syntactic positions; see also Eguren (2006b). Be that as it may, for ease of exposition, I will refer to [-a] and [-ak] as the singular and the plural D respectively.

⁴⁹ Although there is no proximate singular in modern Basque, *-ori*, *-or*, *-au* or *o* are attested in early texts; it is still possible to find *-o* in actual Bizkaian in *hemen bertan* ‘right here’, along with *hemen bertan*.

be grammatical, as the examples in (142–143) show (cf. Laka 1993, Artiagoitia 1997, 1998, 2002, Etxeberria 2005, 2010a among others).^{50,51,52}

Subject position:

- (142) a. Irakasle*(-a) berandu etorri zen b. Irakasle*(-ak) berandu etorri ziren
 teacher-D.sg late come aux teacher-D.pl late come aux
 ‘The teacher came late’ ‘The teachers came late’

Object position:

- (143) a. Anek baloi*(-a) hartu zuen b. Anek baloi*(-ak) hartu zituen
 Ane.erg ball-D.sg take aux Ane.erg ball-D.pl take aux
 ‘Ane took the ball’ ‘Ane took (the) balls’

3.5.1.2 Demonstratives

The standard use of the actual Basque adnominal demonstrative system is the following:

⁵⁰ It is important to note that the presence of an indefinite determiner or a value judgment cardinal or any other weak quantifier (cf. Section 3.2.4) also makes the sentence grammatical.

- (i) Mutil bat/asko/batzuk berandu iritsi zen.
 boy one/many/some late arrive aux.past
 ‘A/Many/Some boy(s) arrived late’

⁵¹ When Basque definite DPs (plurals and masses) fill the direct object slot, the definite DP can but need not make reference to a specific set and can obtain the so-called existential interpretation (i) (cf. the gloss in (143b)).

- (i) a. Amaiak goxoki-ak jan ditu
 Amaia-erg candy-D.pl-abs eat aux
 ‘Amaia has eaten (the) candies’
 b. Izarok ardo-a edan du
 Izaro-erg wine-D.sg-abs drink aux
 ‘Izaro has drunk (the) wine’

The examples in (i) are ambiguous between a specific and an existential interpretation: (ia) ‘Amaia has eaten *the candies*’ or ‘Amaia has eaten *candies*’; (ib) ‘Izaro has drunk *the wine*’ or ‘Izaro has drunk *wine*’. (Cf. Etxeberria (2005, 2010a, in prep.), for extensive discussion on this and a possible analysis)

⁵² Note that in Souletin (most eastern Basque dialect) BNs can appear in object position (only).

- (ii) a. Bortüan ikusi dut behi, ardi eta mando (Coyos 1999: 232)
 mountain.D-in see aux cow sheep and mule
 ‘I’ve seen cows, sheeps, and mules in the mountain’
 b. Manexek hur edan dizü. Peiok ogi jan dizü.
 Manex-erg water drink aux Peio-erg bread eat aux
 ‘Manex has drunk wine. Peio has eaten bread’

This paper will not consider this usage and will assume that the absence of the D makes the sentence ungrammatical; cf. Etxeberria (in prep.) for a possible analysis.

(144)	<i>singular</i>	<i>plural</i>
Proximal:	(h)au(r) 'this'	haiek 'these'
Medial:	(h)ori 'that' (just there)	horiek 'those' (just there)
Distal:	(h)ura 'that' (over there)	haiek 'those' (over there)

- a. Proximal:
Mutil hau berandu etorri zen.
boy this late come aux.past
'This boy came late.'
- b. Medial:
Neska gazte hori ez dut ezagutzen.
girl young that (just there) no aux.pres. know
'I don't know that young girl.'
- c. Distal:
Neska hura Txinara joan zen bigarren mundu gerran.
girl that (over there) China-to go aux.past 2nd world war-in
'They sent that woman to Russia during the 2nd WW.'

In general, the proximal demonstrative demonstrates proximity to the speaker, the medial demonstrative illustrates proximity to the addressee, and the distal demonstrative shows remoteness from both the speaker and the addressee. Sometimes, both the medial and the distal demonstratives can be used to indicate differing degrees of remoteness from the speaker. The three demonstratives make use of stem-suppletion for the oblique cases.

(145) Oblique cases:

	<i>singular</i>	<i>plural</i>
Proximal:	(h)on-	(h)ae-
Medial:	(h)or-	(h)orie-
Distal:	(h)ar-	(h)haie-

- a. Proximal:
Lagun honekin joan nintzen hondartzara.
friend this-with go aux.past beach.D-to
'I went to the beach with this friend.'
- b. Medial:
Hegazkin zahar horretara ez naiz igoko.
airplane old that-to no aux.pres. get on
'I won't get on that old airplane.'

c. Distal:

Urte hartan gauza guztiak gaizki atera ziren.
 year that-in thing all-D.pl wrong go out aux.past
 ‘That year, everything went wrong.’

Note that excluding the absolutive case (examples (144a–c)), the rest of the cases take *hon-*, *hor-*, and *har-* as stems (examples (145a–c)).

In Bizkaian, and only in this dialect, the demonstratives may occur either preceding the nominal expression or in both positions (preceding and following) simultaneously. Thus, Bizkaian has constructions like *hori mutila* ‘lit.: that boy-D.sg’ or *hori mutilori* ‘lit.: that boy that’ to mean ‘that boy (just there)’ and *a mutila* ‘that boy (over there)’ (cf. Artiagoitia 1998, Zuazo 2008). These take double case-marking, as in *horrek mutilorrek* (ergative) ‘lit.: that.erg boy that.erg’ and *honeri mutilori* (dative) ‘lit. that.dat boy.that.dat’. Note also that the plural forms use the proximate article *-ok*, not a form of the demonstrative: *hónek mutilok* ‘lit.: these boy-D.prox’.⁵³ None of these are possible in other varieties. It is also only in Bizkaian where the demonstrative can appear preceding the noun plus the D: *ori mutila* ‘lit.: that boy.D.sg’.

3.5.1.3 Proper Nouns

Proper nouns in Basque can be both monomorphemic (e.g. *Xabier*, *Aritz* ‘oak’, *Urtzi* ‘sky, firmament’, *Nikolas*, etc.) or multimorphemic (e.g. *Aizpea* ‘lit.: rock below’, *Maitagarri* ‘charming; lit.: beloved-incentive suffix’ (cf. de Rijk 2008: 335), *Eneko* ‘lit.: my-diminutive suffix’, *Joxe Mari* ‘m. Joseph Mary’, *Mari Joxe* ‘f. Mary Joseph’, etc. The last two names are borrowed from Spanish.

On the other hand, Basque surnames can be said to be generally multimorphemic (and mostly geographical in nature): *Etxeberri(a)* ‘lit.: house new (the)’, *Etxepare* ‘lit.: house in front of’, *Iturriotz* ‘lit.: spring cold’, *Oyharzabal* ‘lit.: wood wide’, *Uralde* ‘lit.: water beside’, *Gibelalde* ‘lit.: liver (back) side’, etc. It is also possible to find monomorphemic surnames: *Zabala* ‘the broad one’, *Urruti* ‘far’, etc.

3.5.2 Generic NPs

As already shown at the beginning of Section 3.5.1 Basque does not accept bare nouns as arguments. Generic NPs are not an exception and as a consequence, they need to appear with the D. Thus, so-called characterizing sentences are normally (and more naturally) expressed by using the plural version of the D (146), although the singular D can also be used (147) in some situations.

⁵³ Thanks to an anonymous reviewer for pointing this out to me.

- (146) a. Txakurrek zaunka egiten dute.
dog-D.pl.erg bark do.prog aux
'Dogs bark'
- b. Medikuek gaixotasunak ikertzen dituzte.
doctor-D.pl.erg disease-D.pl.abs investigate aux
'Doctors investigate diseases'
- (147) a. Txakurrak zaunka egiten du.
dog-D.sg.erg bark do.prog aux
'Dogs bark'
- b. Medikiak gaixotasunak ikertzen ditu. [only specific]
doctor-D.sg.erg disease-D.pl.abs investigate aux
'The doctor investigates diseases'

The sentence in (147a) can be used with a generic interpretation, whereas the one in (147b) can only get a specific reading.

In order to get the kind interpretation, i.e. when nominals are combined with kind-level predicates (e.g. *evolve*, *become extinct*, *be common*, etc.; cf. Carlson 1977; cf. also Krifka et al. 1995), the presence of the D is again obligatory.

- (148) a. Dinosauruak aspaldi desagertu ziren.
dinosaur-D.pl long time ago disappear aux
'Dinosaurs disappeared a long time ago'
- b. Arrainak orain duela 390 milioi urte agertu ziren.
fish-D.pl now million year appear aux
'Fishes appeared 390 million years ago'

The D in both the examples in (148) is plural, but it is also possible to use the singular version of the D to get the kind reading, as in Romance languages or in English.⁵⁴

- (149) Lehoia desagertu egingo da.
lion-D.sg disappear do.fut aux
'The lion will become extinct'

⁵⁴ The question that immediately arises is why a language accepts two different ways of expressing kinds. The most common answer is that singular and plural kind-denoting expressions are not alike (see Kleiber (1990), Krifka et al. (1995), Chierchia (1998), Dayal (2004) and references therein).

3.5.3 Morphological Complexity of Quantifiers

3.5.3.1 A-Quantifiers

These are the Basque monomorphemic A-quantifiers:

(150)	<i>beti</i>	‘always’
	<i>asko</i>	‘many times, a lot’
	<i>ugari</i>	‘many times, a lot’
	<i>maiz</i>	‘often’
	<i>sarri</i>	‘often’
	<i>ardura</i>	‘often’
	<i>usu</i>	‘often’
	<i>gutxi</i>	‘few times’

All the rest of the Basque A-quantifiers can be said to be multimorphemic. They are created by adding the indefinite locative marker *-tan*, by adding the noun *aldi* ‘time, occasion’ (plus the instrumental, or the locative), or by adding a weakened form of the quantifier *oro* ‘all’, the suffix *-ero*; in all these cases, they are multimorphemic but just one phonological word. The A-quantifiers created by means of combining the noun *behin* ‘once’ with other nouns such as *beste* ‘other’, *noiz* ‘when’, etc. are multimorphemic.

3.5.3.2 D-Quantifiers

Among the monomorphemic Basque D-quantifiers we can list the following:

- (151) a. Universal Qs (cf. §2.3):
oro ‘all’, *guzti* ‘all’, *den* ‘all’⁵⁵
- b. Value judgment cardinals (cf. §2.4):
asko ‘many’, *ugari* ‘abundant, copious’, *franko* ‘many’, *anitz* ‘many’,
hainbat ‘quite a few’, *gutxi* ‘few’
- c. Proportional Qs:
erdi ‘half’⁵⁶

Among multimorphemic Basque D-quantifiers that are phonologically one word I include those quantifiers that cannot appear by themselves; this is the reason why *guzti*, *den*, and *bakoitz* are also included here:

- (152) a. Universal Qs:
bakoitz ‘each’ (cf. note 55)

⁵⁵ Note that except for *oro*, the rest of Basque universal Qs need to appear with the D (cf. Section 3.3).

⁵⁶ The fraction word *erdi* ‘half’ can never appear by itself in Basque and it needs the presence of the D or of some other quantifier or numeral (cf. Section 3.4).

- b. Existential Qs:
batzuk ‘some’, *zenbait* ‘some’, *hainbat* ‘some’
- c. Proportional Qs (cf. §4):
gehi-en-ak ‘most’, *gehiengo-a* ‘majority’, *gutxiengo-a* ‘minority’,
heren ‘third’, etc.

Multimorphemic Basque D-quantifiers that are not phonologically one word:

- (153) a. Value judgment cardinals:
pila bat ‘a lot’, *gutxi batzuk* ‘a few’, *pixka bat* ‘a little’,
apur bat ‘a little’

Some extra information:

- Monomorphemic *all*: *oro*, *guzti*, *den*.
- Monomorphemic *one*: *bat* (identical to the numeral *bat* ‘one’ and probably originated from it. It is possible to differentiate these two through accentuation; when we focus *bat* the interpretation we get is that of the numeral).
- Basque has several monomorphemic Qs translating as *many* (cf. Section 3.2.4).
- Basque does not have a monomorphemic equivalent to English ‘no’ (cf. end of Section 3.2.3).
- Universal D-quantifiers: *oro*, *guzti*, *den*.
- D-quantifiers are morphologically simpler than the A-quantifiers, although some of the latter are also monomorphemic (see above).

3.5.4 Selectional Restrictions

The two existential quantifiers that we have treated in Section 3.2.1, i.e. *batzuk* ‘some’, and *zenbait* ‘some’ are unable to combine with mass nouns. When they combine with a possibly mass noun, the mass noun is coerced into a count term and the construction can only make reference to different types or glasses of beer (in (154)). So, it is possible to conclude that these quantifiers are count quantifiers.

- (154) a. Ane-k garagardo batzuk dastatu zituen.
 Ane-erg beer some-abs taste aux.pl
 ‘Ane tasted (different types of/glasses of) beers’
- b. Ane-k zenbait garagardo dastatu zituen.
 Ane-erg some beer-abs taste aux.pl
 ‘Ane tasted (different types of/glasses of) beers’

Another property shown by *bakoitz* is that it cannot combine with mass nouns. In case it is combined with a possibly mass noun, the mass noun is coerced into a count term.

- (158) Jonek ur bakoitzari ardo tanta bat bota zion.
 Jon.erg water each.D.sg.dat wine drop one throw aux
 ‘Jon threw a drop of wine to each (bottle, glass, etc.) water’

3.5.5 Decreasing NPs

Basque decreasing NPs are formed by using the value judgment cardinal *gutxi* ‘few’; except for *gutxi batzuk* ‘a few’.

- (159) a. Ikasle gutxi etorri ziren.
 student few come aux.pl
 ‘Few students came’
 b. Bost ikasle baino gutxiago etorri ziren.
 five student than less come aux.pl
 ‘Less than five students came’

As opposed to what happens in English, Basque decreasing NPs do not license NPIs as the ungrammaticality of the following examples show.

- (160) a. *Ikasle gutxi izan da/dira inoiz Errusian
 student few be aux.sg/aux.pl ever Russia.in
 b. *Bost ikasle baino gutxiago izan dira inoiz Errusian
 five student than less be aux.pl ever Russia.in

3.5.6 Boolean Compounds

Boolean compounds created by D-quantifiers were described in Section 3.2.6. In what follows, I provide some examples of boolean compounds of A-quantifiers.

- (161) a. Gutxienez bi aldiz eta gehienez hamar aldiz
 at.least two time.inst and at most ten time.inst
 izan naiz jatetxe horretan.
 be I.am restaurant that-loc
 ‘I’ve been to that restaurant at least two and at most ten times.’
 b. Klasea huts egin du gutxienez bi aldiz baina ez bost aldiz
 class fail do aux.at.least two time.inst but no five time.inst
 baina gehiagotan.
 than more.loc
 ‘S/he missed class at least twice but not more than five times’

Note that the instrumental case added to the noun *aldi* ‘time, occasion’ can be changed by the indefinite locative marker *-tan* in both the examples in (161).

3.5.7 *Exceptives*

The most common way to form exception phrases in Basque is by means of the word *ezik* ‘except’ (created by adding the suffix *-(r)ik* to the negation *ez* ‘no’) to which we can add the copula *izan*, the word *salbu* ‘except; lit.: save’, or the participial *kenduta* ‘taken off’ (created by adding the suffix *-ta* to the verb *kendu* ‘take off’).

- (162) a. *Ikasle guztiak etorri ziren festara, Jon (izan) ezik/salbu/kenduta.*⁵⁸
 student all-D.pl come aux party-to Jon be except
 ‘All of the student came, except for Jon’
- b. *Jon (izan) ezik/salbu/kenduta ikasle guztiak etorri ziren festara.*
 Jon be except student all-D.pl come aux party-to
 ‘All of the student came, except for Jon’
- c. **?Ikasle guztiak, Jon (izan) ezik/salbu/kenduta etorri ziren festara.*⁵⁹
 student all-D.pl Jon be except come aux party-to

The examples in (162) clearly show that exception expressions in Basque do not form a constituent with the quantifier.

One other form, which is frequently used in both written and spoken Basque, has a more complex structure: [DP + *ez* ‘no’ + *beste* ‘other’ + NP-*guztiak* ‘NP-all’].

- (163) *Jon ez beste ikasle guztiak etorri ziren festara.*
 Jon no other student all-D.pl come aux party-to
 ‘All the students but John came to the party’

There is also another exceptive form which is not so much used in present day Basque: [DP-instr. + *beste* ‘other’ + NP-part].⁶⁰

⁵⁸ The universal quantifiers *den* ‘all’ and *oro* ‘all’ could replace *guzti* in (162) with no change in meaning. *Bakoitz* ‘each’ gives an ungrammatical result.

⁵⁹ The sentence in (162c) becomes grammatical when the exceptive phrase is moved from the focus position (cf. fn. 1 and end of Section 3.2.4); in (i) the element that occupies the focus position is *festara* ‘to the party’.

(i) *Ikasle guztiak Jon (izan) ezik/salbu/kenduta, festara etorri ziren.*
 student all-D.pl Jon be except party-to come aux

I don’t have anything interesting to say about it right now and will leave it for future research.

⁶⁰ Thanks to an anonymous reviewer for pointing this out me.

- (164) Guk Jainkoaz beste aitarik ez dugu. (Sarasola 2007: 213)
 we.erg God.instr other father.part no have
 ‘We do not have a father, except for God’

Note that Basque doesn’t have an equivalent form for English exception constructions such as: *No student but John*. This makes complete sense considering that Basque does not have a monomorphemic ‘no’ (cf. end of Section 3.2.3).

3.5.8 *Only*

There are three ways to express the equivalent of ‘only’ in Basque: (i) by means of *bakarrik* ‘alone’, created from the combination of *bakar* ‘unique’ and the suffix *-ik* (165); (ii) by means of *besterik ez* ‘lit.: other.part no’ (166); and (iii) by means of *soilik* ‘only’, created from the combination of *soil* ‘bare’ and the suffix *-ik* (167).

- (165) a. Martxel bakarrik etorri zen.
 Martxel alone come aux
 ‘Only Martxel came’
 b. Ikasleak bakarrik agertu ziren bilerara.
 student-D.pl alone appear aux meeting.to
 ‘Only students attended the meeting’
- (166) a. Martxel besterik ez zen etorri.
 Martxel other.part no aux come
 ‘Only Martxel came’
 b. Ikasleak besterik ez ziren agertu bilerara.
 student-D.pl other.part no aux appear meeting.to
 ‘Only students attended the meeting’
- (167) a. Martxel soilik etorri zen.
 Martxel only come aux
 ‘Only Martxel came’
 b. Ikasleak soilik agertu ziren bilerara.
 student-D.pl only appear aux meeting.to
 ‘Only students attended the meeting’

3.5.9 *Partitives*

Basque partitive quantifiers are syntactically complex. Proportional quantifiers, fractional expressions as well as percentage expressions were described

in Section 3.4. Now, apart from the proportional expressions shown in Section 3.4, the most typical way to express partitivity in Basque is by means of the plural version of D plus the ablative marker *-tik* ‘of’. The quantifier in a partitive construction can be cardinal (168a), interrogative (168b), or negative (168c) (although remember there is no monomorphemic *no* in Basque). There is no equivalent of the English ‘all of the NP’.⁶¹

- (168) a. *Ikasle-etatik asko/gutxi/batzuk/hamar berandu iritsi ziren.*
 student-D.pl.abl many/few/some/ten late arrive aux.pl
 ‘Many/few/some/ten of the students arrived late.’
- b. *Ikasle-etatik zein iritsi zen berandu?*
 student-D.pl.abl which arrive aux late
 ‘Which of the students did arrive late?’
- c. *Ikasle-etatik batere ez zen iritsi berandu.*
 student-D.pl.abl one even no aux arrive late
 ‘None (lit.: not even one) of the students arrived late’

Note that the negation that appears in (168c) can be separated from *batere* ‘lit.: one even’ and moved to the sentence initial position: *Ez zen ikasleetatik batere etorri berandu*. This would show that in opposition to the partitives formed with cardinals and interrogatives the negative does not form a single constituent with *batere* (cf. end of Section 3.5.10).

Now, one may ask: where is the D that we see in the English ‘of the’ in its Basque equivalent *-etatik*? As evidence for the fact that D is included in the partitive form *-etatik*, note that in Basque, case is marked by means of suffixes and it is possible to distinguish between the indefinite and the definite paradigms morphologically. *Etxe* means ‘house’.

(169)

	indefinite	definite sg.	definite pl.
ergative	<i>etxe-k</i>	<i>etxe-ak</i>	<i>etxe-ek</i>
ablative	<i>etxe-ta-tik</i>	<i>etxe-tik</i>	<i>etxe-eta-tik</i>

⁶¹ Etxeberria (2005, 2009), Etxeberria and Giannakidou (2010) argue that QP internal D is a contextual domain restrictor; partitives also behave as contextual restrictors. Now, the reason why (i) in Basque is ungrammatical is due to the fact that double contextual restriction yields ungrammaticality.

(i) **Ikasleetatik guztiak berandu iritsi ziren.*
 student-D.pl-abl all-D.pl late arrive aux

The reason these sentences are ungrammatical is that domain restriction is already fulfilled by means of the D that composes with the Q and additional contextual restriction is *redundant*.

It is known that partitive constructions like the ones we are considering denote the set of all contextually relevant houses (in this case) and the presence of the *D* is assumed to be obligatory for such constructions. Now, in principle it would seem possible to create a partitive with the indeterminate form of the ablative, but this is completely impossible.

- (170) a. *etxe-ta-tik asko
house-pl-abl many
b. etxe-eta-tik asko
house-D.pl-abl many

Thus, *-eta* should be taken as a portmanteau morpheme that marks both number and definiteness features in a single morpheme.⁶²

3.5.10 NPIs

NPIs in Basque are built by adding the prefix *e-* (related to negation) to *wh*-words:

- (171) a. *i-nor* ‘anybody’
b. *e-zer* ‘anything’
c. *i-noiz* ‘ever’
d. *i-non* ‘anywhere (location)’
e. *i-nora* ‘anywhere (direction)’

Despite the presence of a negative element, for most speakers, these NPIs do not have a negative value by themselves and need the presence of an independent clausemate negation.

- (172) a. Nor ikusi zuen? Inor *(ez).
who see aux anybody not
‘Who did s/he see? Noone’
b. Zer erosi zenuen? Ezer *(ez)
what buy aux anything not
‘What did you buy? Nothing’

The behaviour of Basque NPIs is then different from English *any-* forms in that they cannot be used as ‘free-choice’ items: **Ezer edango nuke* ‘I would eat anything (intended)’.⁶³ In order to get a free-choice reading, the prefix *edo-* ‘or’ or

⁶² Cf. Etxeberria (2005) for an extended explanation of these facts.

⁶³ Some Basque speakers accept Basque NPIs with a free choice reading, provided certain conditions are met: if the matrix verb is in the future, if modals are added, and also if the matrix verb is focalized (cf. Laka 1990: 206). Example from Laka 1990: (48)).

the noun *nahi* ‘desire’ must be added to wh-elements *zer* ‘what’, *nor* ‘who’ and *zein* ‘who, which’: *edozer/zernahi* ‘anything/ whatever’, *edonor/nornahi* ‘anyone/whoever’, *edozein/zeinnahi* ‘anyone/whoever’ (cf. Etxeberria in prep. for discussion).

There is another inanimate negative word almost equivalent to *ezer*: *deus*. They both can appear in exactly the same context when negation is present (173a). However, *deus*, in opposition to *ezer* (see (172b)) does not need the presence of a negative element (173b).

- (173) a. Ez dut ezer ikusi = Ez dut deus ikusi
 no aux see no aux see
 ‘I haven’t seen anything’
- b. Zer erosi zenuen? Deus.
 what buy aux nothing
 ‘What did you buy? Nothing’

Polarity items have a different shape in eastern dialects (Mitzelena 1961: 304), where they can directly convey a negative meaning (174a).

- | | | | |
|-------|--------------|---------------|------------------------|
| (174) | Western | Eastern | |
| | <i>inor</i> | <i>nehor</i> | ‘anybody’ |
| | <i>inoiz</i> | <i>nehoiz</i> | ‘ever’ |
| | <i>inon</i> | <i>nehon</i> | ‘anywhere’ |
| | <i>inora</i> | <i>nihora</i> | ‘anywhere’ (direction) |
- a. Nor joan da? Nehor.
 who go aux anyone
 ‘Who left? No one’

One other element that is used as an NPI is the partitive marker *-(r)ik* (cf. Larramendi 1927, Azkue 1905, 1923; cf. de Rijk 1972 for historical references; cf. also Etxeberria 2010b). The partitive marker only attaches to DOs (175) or to subjects of intransitives (176).

- (175) a. Anek ez du baloi-rik ekarri
 Ane.erg not aux ball.part bring
 ‘Ane didn’t bring any ball’
- b. Maiak ez du ardo-rik edan
 Maia.erg not aux wine.part drink
 ‘Maia didn’t drink any wine’

(i) Lekukoek ukatu egingo lukete nik esandako ezer.
 witness-D.pl-erg deny aux.fut would I-erg say anything
 ‘The witnesses would deny anything that I would say’

In general, however, most speakers would use other variants (see above) to express free choice.

- c. *Katu-rik ez du xagu-rik jan
 cat.part no aux mouse.part eat
- (176) a. Mendian ez da hildako animalia-rik azaldu
 mountain-D.sg.in no aux dead animal.part appear
 ‘No dead animal appeared in the mountain’
- b. Bilerara ez da irakasle-rik etorri
 meeting.to no aux teacher.part come
 ‘No teacher came to the meeting’

And it behaves as a polarity item in that it appears in polarity contexts: e.g. negative contexts (175–176), interrogative clauses (177a), conditional clauses (177b), etc. (cf. de Rijk 1996, Etxepare 2003b, Etxeberria 2010b, in prep.).

- (177) a. Goxoki-rik nahi al duzu?
 candy.part want aux
 ‘Do you want any candy?’
- b. Taxi-rik lortu nahi baduzu, hobe duzu ilara honetatik ez mugitu.
 taxi.part get want if.aux better aux queue this.from no move
 ‘If you want to get a(ny) taxi, you better not move from this queue’

Basque possesses another negative word that works as a scalar modifier: *batere* (lit.: one even) ‘at all’. This element is only licensed by negation.

- (178) a. Ez dago batere garbi.
 not is at.all clear
 ‘It is not clear at all.’
- b. *Batere garbi dago.
 at.all clear is

3.5.11 *Quantifiers as Predicates*

In Basque, only cardinal (weak) quantifiers – existentials, value judgment cardinals, numerals – can be predicative (179a,b). Strong quantifiers as well as proportional (partitive) quantifiers are not allowed in this context as shown by (179c,d).

- (179) a. Gonbidatu-ak [ikasle asko/gutxi/batzuk] ziren.
 guest-D.pl student many/few/some be.pl
 ‘The guests were many/few/some students.’
- b. Gonbidatu-ak [bost ikasle] ziren.
 guest-D.pl five student be.pl
 ‘The guests were five students.’

- c. *Gonbidatu-ak [mutil guztiak/denak/bakoitza/oro/gehienak] ziren/zen.
 guest-D.pl [boy all-D.pl/all-D.pl/each-D.sg/all/most-D.pl] be.pl/be.sg
- d. *Gonbidatuak [ikasle-eta-tik asko/gutxi/batzuk/bost] ziren.
 guest.D.pl [student-D.pl-abl many/few/some/five] be.pl
 ‘*The guests were many of the students/some of the students/few of the students.’

3.5.12 *Determiners Functioning as NPs*

Now, when instead of the sequence [weak quantifier + noun] what we have is just the weak quantifier by itself, that is, when the common noun is made silent, not all of the (so-called) Basque weak quantifiers behave alike and some differences emerge.

Thus, the examples in (180) are completely grammatical and the only possible interpretation is the predicative one; the proportional interpretation is, as predicted, completely out.

- (180) Gonbidatuak [asko/gutxi/bost/bost baino gehiago] ziren.
 guest.D.pl [many/few/five/more than five] be.past
 ‘The guests were many/few/five/more than five’

Things change when we use the existential weak quantifiers *batzuk* ‘some’ and *zenbait* ‘some’. With these quantifiers the sentences with the common noun silent become ungrammatical.⁶⁴

⁶⁴ The same behaviour can be observed in languages such as English or Spanish as the following examples show.

English:

- (i) a. The guests were many/few students. b. The guests were many/few.
 (ii) a. The guests were some students. b. *The guests were some.

Spanish:

- (iii) a. Los invitados eran muchos/pocos estudiantes.
 the.pl guest.pl be.past many/few students
 ‘The guests were many/few students.’
 b. Los invitados eran muchos/pocos.
 the.pl guest.pl be.past many/few
 ‘The guests were many/few.’
- (iv) a. Los invitados eran algunos/unos estudiantes.⁶⁴
 the.pl guest.pl be.past some/some students
 ‘The guests were some students.’
 b. *Los invitados eran algunos/unos.
 the.pl guest.pl be.past some/some
 ‘The guests were some.’

Cf. Etxeberria (2005, in prep.) for an extensive presentation of the data and for a possible analysis.

- (181) a. *Gonbidatuak [batzu(e)k] ziren.⁶⁵
 guest.D.pl [some] be.past
 b. *Gonbidatuak [zenbait] ziren.
 guest.D.pl [some] be.past

Universal quantifiers as well as the proportional *gehien* ‘most’ follow their well-established pattern and continue being ungrammatical in these contexts.

- (182) *Gonbidatuak [guzti-ak/den-ak/bakoitz-a/oro/gehienak] ziren/zen.
 guest.D.pl all-D.pl/all-D.pl/each-D.sg/all/most-D.pl be.pl/be.sg
 ‘The guests were all/all/each/all/most’

3.5.13 Distribution

Quantified nominal expressions can occur in all grammatical functions:

- (183) a. Peruk hiru galdera erantzun zituen.
 Peru.erg three question answerg aux
 ‘Peru answered three questions’
 b. Peruk galdera guztiak/gehienak erantzun zituen.
 Peru.erg question all-D.pl/most-D.pl answer aux
 ‘Peru answered all of the/most of the questions’
 c. Peruk galderen hiru laurdenak erantzun zituen.
 Peru.erg question.gen three quarter-D.pl answer aux
 ‘Peru answered three quarters of the questions’
 d. Bi ikasleren medikuak atxilotuak izan ziren.
 two student.gen doctor-D.pl arrest be aux
 ‘Two student’s doctors were arrested’
 e. Ikasle bakoitzaren medikua aditua da.
 student each-D.sg.gen doctor-D.sg expert-D.sg is
 ‘Each student’s doctor is well qualified’

⁶⁵ It might seem at first sight that the sentences in (181) are grammatical since sentences with the same word order in the overt syntax can be grammatical.

- (i) Gonbidatuak, batzuk/zenbait ziren.
 guest-D.pl some/some aux.past
 ‘Some were guests.’

Note however that for the sentence to be grammatical a pause after *gonbidatuak* is always necessary (as in the example in (i)), and on the other that in this kind of examples the element that is the predicate is *gonbidatuak*, and not *batzuk*. In fact, *gonbidatuak* in (i) has been moved to the front from sentence final position, and the natural word order is (ii).

- (ii) Batzuk/Zenbait ziren gonbidatuak.
 some/some aux.past guest-D.pl
 ‘Some were the guests.’

- f. Anek ikasle gehienen/denen medikuak lagundu zituen.
Ane.erg student most-D.pl.gen/all-D.pl.gen doctor-D.pl help aux
'Ane helped most of the/all of the students' doctors'
- g. Anek ikasle guztiei/orori goxoki bat eman zien/zion.
Ane.erg student all-D.pl.dat/all.dat candy one give aux.pl/aux.sg
'Ane gave a candy to all of the students'

There is one exception: *bakoitz* 'each'. Quantified expressions formed with *bakoitz* 'each' can appear neither in the subject position of intransitive sentences (184a) nor in the object position of transitive sentences (184b), nor in the direct object position that appears syntactically below the indirect object (184c).

- (184) a. *Ikasle bakoitz-a berandu etorri zen.
student each-D.sg.abs late come aux.sg
'Each student came late.'
- b. *Ikasle batek liburu bakoitz-a irakurri zuen.
student one-erg book each-D.sg.abs read aux.sg
'One student read each book.'
- c. *Irakasleak ikasle bati liburu bakoitz-a eman zion.
teacher-D.sg-erg student one-dat book each-D.sg.abs give aux.sg
'The teacher gave one student each book.'

3.5.14 Scope Ambiguities

In general, Basque speakers interpret sentences with two quantifiers unambiguously with the leftmost quantifier having wide scope (cf. Etxeberria 2001, in prep.). However, as soon as different intonation patterns are used, scope ambiguities seem to be more plausible (in Basque, and crosslinguistically; cf. Etxeberria and Irurtzun 2004, in prep.). The way different intonation patterns affect the way in which sentences with two or more quantifiers are interpreted will not be treated in this paper, and the reader is referred to Etxeberria and Irurtzun (in prep.).

To begin with, the sentence in (185), with an indefinite existential in subject position and a universal D-quantifier in object position can only be interpreted with SWS.^{66,67}

⁶⁶ As the attentive reader will have already noticed, Basque does not have a universal D-quantifier parallel to English *every*, *oro* does not behave as such either. This, one may think, can have an effect on the unambiguous readings that we obtain in Basque, however, (and maybe unexpectedly) *bakoitz*, the equivalent of *each* also doesn't force ambiguous interpretations; see below, cf. also Section 3.3.

⁶⁷ I will not talk about the scopal behaviour shown by the universal D-quantifier *oro* 'all' due to the fact that the data that I've collected are not conclusive. Thus, I'll leave both the collection of more data as well as a possible conclusion about the scopal behaviour for future research. However, the first impression that I have is that [NP *oro*] – plus agreement with the

- (185) Argitaratzailereren batek eskuizkribu guztiak irakurri zituen.
 editor-gen one-erg manuscript all-D.pl read aux
 ‘Some editor read all of the manuscripts’

In (186), with numerals in both subject and object position, the group reading and the SWS reading are the more prominent readings. The OWS interpretation is also possible, although much more difficult to get.

- (186) Hiru irakaslek ehun azterketa zuzendu zituzten.
 three teacher.erg 100 exam correct aux
 ‘Three teachers corrected 100 exams’

Group: there is a group of 3 teachers who corrected a group of 100 exams

SWS: there are 3 teachers each of whom corrected 100 exams

OWS: there are 100 exams such that 3 teachers each corrected them

Now, as soon as we introduce *artean* ‘between’ – the NP that accompanies this adverb needs to appear in genitive case – the only possible interpretation is the collective one, i.e. the group reading (187a). Of course, we get exactly the opposite interpretation when we introduce the distributive marker *-na* (which attaches to the numeral) on the object (187b) (cf. Section 3.5.15).

- (187) a. Hiru irakasleren *artean* hamar azterketa zuzendu zituzten.
 three teacher.erg among 10 exam correct aux
 ‘Three teachers corrected 10 exams between them’
- b. Hiru irakaslek hamar-*na* azterketa zuzendu zituzten.
 three teacher.erg 10-dist exam correct aux
 ‘Three teachers corrected 10 exams each’

Just like in English, modified numerals in object position force narrow scope readings. Thus, whereas in (188a) the object *Atxagaren liburu bat* ‘one Atxaga book’ can be interpreted in a specific (wide scope) and a non-specific (narrow scope) way, the modified numeral in (188b) can only get a narrow scope interpretation. *Bakoitz* ‘each’ shows a different behaviour from *guztiak* and *denak* (see below).

- (188) a. Ikasle guztiak Atxagaren liburu bat irakurri zuten.
 student all-D.pl Atxaga.gen book one read aux
 ‘All the students read one Atxaga book’
- b. Ikasle guztiak gutxienez Atxagaren liburu bat irakurri zuten.
 student all-D.pl at least Atxaga.gen book one read aux
 ‘All the students read at least one Atxaga book’

verb in singular – behaves almost like *bakoitz*, i.e. like a distributive Q, and that [NP-D oro] – plus agreement with the verb in plural – behaves like *guzti* and *den*.

Decreasing quantified expressions are interpreted in situ.

- (189) a. Politikari bakar batek ere ez zituen ume guztiak musukatu.
 politician single one.erg even no aux child all-D.pl kiss
 ‘Not even one politician kissed all of the children’
- b. Politikari guztiek ez zuten ume bakar bat ere musukatu.
 politician all-D.pl no aux child single one even kiss
 ‘All the politician kissed not even one baby’

As mentioned, different quantifiers lend themselves to different judgments of scope (non-)ambiguity. While (190a) – repeated from (185) – is grammatical and gives us a SWS reading, the sentence in (190b), with *bakoitz* ‘each’ is completely ungrammatical.

- (190) a. Argitaratzailearen batek eskuizkribu guztiak irakurri zituen.
 editor-gen one-erg manuscript all-D.pl read aux
 ‘Some editor read all of the manuscripts’
- b. *Argitaratzailearen batek eskuizkribu bakoitza irakurri zuen.
 editor-gen one-erg manuscript each-D.pl read aux
 ‘Some editor read all of the manuscripts’

In fact, *bakoitz* ‘each’ has been described as the Basque inherently distributive quantifier (cf. Etxeberria 2001, 2002, 2008, in prep.) and in opposition to the other Basque universal quantifiers *bakoitz* ‘each’ always forces SWS distributive interpretations (191b).

- (191) a. Ikasle guzti-ek/den-ek abesti bat abestu zuten.
 student all-D.pl.erg/all-D.pl.erg song one-abs sing aux.pl
 ‘All/all of the students sang a song.’
 ✓ distributive ✓ collective
- b. Ikasle bakoitz-ak abesti bat abestu zuen.
 student each-D.sg-erg song one-abs sing aux.sg
 ‘Each student sang a song.’
 ✓ distributive * collective

In fact, QPs formed with *bakoitz* ‘each’ can appear neither in the subject position of intransitive sentences (192a) nor in the object position of transitive sentences (192b) – see example (190) – nor in the direct object position, that following the basic Basque word order [S-IO-DO-V] appears below the indirect object (192c) (cf. de Rijk 1969, Ortiz de Urbina 1989, Elordieta 2001).⁶⁸

⁶⁸ According to some Basque speakers, the sentences in (192) are grammatical if *bakoitz* ‘each’ is interpreted as ‘each and every one of the students’. However, most Basque speakers agree with the judgement given for (192).

- (192) a. *Ikasle bakoitz-a berandu etorri zen.
 student each-D.sg.abs late come aux.sg
 ‘Each student came late.’
- b. *Ikasle batek liburu bakoitz-a irakurri zuen.
 student one-erg book each-D.sg.abs read aux.sg
 ‘One student read each book.’
- c. *Irakasleak ikasle bati liburu bakoitz-a eman zion.
 teacher-D.sg-erg student one-dat book each-D.sg.abs give aux.sg
 ‘The teacher gave one student each book.’

What seems to be going on is that *bakoitz* ‘each’ is grammatical only in those situations where it has an element syntactically deeper in the structure over which to distribute; and this element cannot possibly be the event variable (cf. Etxeberria 2001, 2002). Thus, the intransitive sentence in (192a) with no element to be distributed over cannot be recovered. However, a change in the word or a change in the object (IO or DO) that contains *bakoitz* ‘each’ does correct the ungrammaticality of both the sentences in (192b) and (192c).⁶⁹

- (193) a. Liburu bakoitz-a, ikasle batek irakurri zuen.
 book each-D.sg.abs student one-erg read aux.aux
 ‘Lit.: Each book, one student read.’
- b. Irakasle-a-k ikasle bakoitz-a-ri liburu bat eman zion.
 teacher-D.sg-erg student each-D.sg-dat book one-abs give aux.sg
 ‘The teacher gave each student one book.’

Note also that *bakoitz* cannot occur with **collective predicates**, in opposition to what happens with other universal D-quantifiers.

- (194) a. *Ikasle bakoitza tabernan elkartu da.
 student each-D.sg bar.in gather aux
 ‘*Each student gathered in the bar’
- b. Ikasle guztiak/denak tabernan elkartu dira.
 student all-D.pl/all-D.pl bar.in gather aux
 ‘All of the students gathered in the bar’

⁶⁹ According to some Basque speakers, the sentence in (i) – where the subject *ikasle batek* ‘one student’ appears in (preverbal) focus position and *liburu bakoitz* ‘each book’ is part of the ‘theme’ (cf. Vallduvi 1993 and references therein) – makes the sentence in (192b) grammatical and gives us a OWS reading.

(i) *Ikasle batek irakurri zuen liburu bakoitz-a.*
 student one-erg read aux.sg book each-D.sg.abs
 ‘One student read each book.’

I don’t have anything interesting to add right now; the reader is referred to Etxeberria and Irurtzun (in prep.).

Furthermore, while in (195a) we expect to find as many pictures as there are students, in the most salient interpretation of (195b) we will look for a single picture with all the students in it (although the distributive reading is also available, although much less salient).

- (195) a. *Ikasle bakoitzaren argazki bat zegoen mahai gainean.*
 student each-D.sg.gen picture one be.egon table over
 ‘A picture of each student (was on the table)’
- b. *Ikasle guztien argazki bat zegoen mahai gainean.*
 student all-D.pl.gen picture one be.egon table over
 ‘A picture of all students (was on the table)’

The following examples show the scope possibilities in **wh-questions**.

- (196) a. *Zein ikaslek erantzun zituzten galdera gehienak.* √SWS *OWS
 which student.erg answer aux qesiton most-D.pl
 ‘Which student answered most of the questions?’
- b. *Zein ikaslek erantzun zituzten galdera guztiak.* √SWS *OWS
 which student.erg answer aux qesiton all-D.pl
 ‘Which student answered all of the questions?’
- c. **?Zein ikaslek erantzun zuen galdera bakoitza?* *SWS *OWS⁷⁰
 which student.erg answer aux qesiton each-D.sg
 ‘Which student answered each question?’
- (197) a. *Zein galdera erantzun zuen ikasle bakoitzak?* √SWS *OWS
 which question answer aux student each-D.sg.erg
 ‘Which question did each student answer?’
- b. *Zein galdera erantzun zuten ikasle guztiak?* *SWS √OWS
 which question answer aux student all-D.pl.erg
 ‘Which question did all of the students answer?’

In **self-embedding QNPs**, the scopings we obtain depend on the quantifier that appears on the possessor.

- (198) a. *senatari bakoitzaren lagun bat*
 senator each-D.sg.gen friend one
 ‘a friend of each senator’
 [√/distributive: many friends / *collective]

⁷⁰ According to some Basque speakers (the author included), this question becomes grammatical when the object *galdera bakoitza* ‘each question’ appears in topic position (left dislocated), as in (i). The only possible reading for (i) is OWS.

- (i) *Galdera bakoitza, zein ikaslek erantzun zuen?*
 question each-D.sg which student.erg answer aux
 ‘Each question, which student answered?’

- b. senatari guztien lagun bat
 senator all-D.pl.gen friend one
 ‘a friend of all senators’
 [??distributive / $\sqrt{\text{collective}}$: same friend]

3.5.14.1 Ambiguity Between Nominal and Verbal Quantifiers

- (199) Bi mutilek hiru aldiz abestu zuten.
 two boy-D.pl.erg three time.inst sing aux
 ‘Two boys sang three times’
 $\sqrt{\text{SWS}}$: there are two boys who sang three times each
 *OWS: on three occasions there were two boys who sang

3.5.14.2 Quantifier-Negation Interaction

No matter whether negation appears syntactically above or below the universal D-quantifier, negation always take wide scope (recall that Basque does not have an equivalent of *not every*).

- (200) a. Nere gelako ikasle guztiak ez dute erretzen.
 my class.gen student all-D.pl no aux smoke.prog
 ‘All the students in my class do not smoke’
 $\sqrt{\text{neg}} > \text{all}$ *all > neg
- b. Ez dute nere gelako ikasle guztiak erretzen.
 no aux my class.gen student all-D.pl smoke.prog
 ‘Not all the students in my class smoke’
 \approx ‘It is not the case that all the students in my class smoke’
 $\sqrt{\text{neg}} > \text{all}$ *all > neg

With other quantifiers: Imagine a situation in which there are 14 teachers, exactly 6 of whom sign the petition. Then (201a) is true, since the number that did not sign is 8, which is more than 4. But (201b) is false since more than 4 signed, in fact 6 did.

- (201) a. Lau irakasle baino gehiagok ez zuten sinatu eskaria.
 four teacher than more.erg no aux sign petition-D.sg
 ‘More than four teachers did not sign the petition’
- b. Ez zuten lau irakasle baino gehiagok sinatu eskaria.
 no aux four teacher than more.erg sign petition-D.sg
 ‘Not more than four teachers signed the petition’
 \approx ‘It is not the case that more than four teachers signed the petition’

3.5.15 *Distributive Numerals*

Distributive numerals in Basque are formed by suffixing the distributive particle *-na* to any cardinal numeral. The sequence [numeral+*na*] occupies the same syntactic position (with respect to the nominal) as the corresponding numeral.

- (202) a. liburu bat → liburu ba-na
 book one → book one-dist
 ‘one book’ → ‘one book each’
- b. lau liburu → lau-na liburu
 four book → four-dist book
 ‘four books’ → ‘four books each’
- c. hamazazpi liburu → hamazazpi-na liburu
 seventeen book → seventeen-dist book
 ‘seventeen books’ → ‘seventeen books each’

When the numeral the particle *-na* combines with is *bat*, the distributive numeral can only appear in direct object position and it will not be able to appear in subject or indirect object position.⁷¹

- (203) a. Ikasleek irakasleari lan ba-na aurkeztu zioten.
 student-D.pl.erg teacher-D.sg.dat work one-na.abs present aux.sg
 ‘The students presented one work each to the teacher.’
- b. *Ikasle ba-na-k irakasleari lan bat aurkeztu zioten.
 student one-na.erg teacher-D.sg.dat work one.abs present aux.sg
- c. *Ikasleek irakasle ba-na-ri lan bat aurkeztu zioten
 student-D.pl.erg teacher one-na.dat work one.abs present aux.sg

However, when the distributive particle *-na* combines with any other numeral, the distributive numeral is able to appear in direct object position or in indirect object position, although never in subject position.

- (204) a. Ikasleek lagunari zazpi-na lan aurkeztu zizkioten.
 student-D.pl.erg friend-D.sg.dat seven-na work.abs present aux.pl
 ‘The students presented seven works each to the friend.’
- b. *Zazpi-na ikaslek lagunari lan bat aurkeztu zioten.
 seven-na student.erg friend-D.sg.dat work one.abs present aux.sg
- c. Ikasleek zazpi-na laguni lan bat aurkeztu zioten
 student-D.pl.erg seven-na friend.dat work one.abs present aux.sg
 ‘The students presented one work to seven friends each.’

⁷¹ When the ergative marker attaches to the plural D *-ak*, the resulting form is *-ek*.

We can form adverbs adding the suffixes *-ka* or *-n* (the second one asks for reduplication) to these distributive numerals: e.g. *bina-ka* or *binan-binan* ‘two at a time’.

The suffix *-na* can also attach to fractional expressions or to the interrogative *zenbat* ‘how many’.⁷²

- (205) a. *zenbat* → *zenba-na*
 how many how many-dist
- b. *erdi bat* → *erdi ba-na*
 half one half one-dist

3.5.16 *Mass vs. Count Quantifiers*

Mass and count quantifiers were described in Section 3.5.4.

3.5.17 *The ‘Indexing’ Function of Universal Quantifiers*

The domain of the universal D-quantifier *guzti* ‘all’, *den* ‘all’, *bakoitz* ‘each’ and the universal A-quantifier formed with the weakened form of the quantifier *oro* ‘all’, the suffix *-ero* (cf. Section 3.3, A-quantifiers) can be used as an index set for another set we are enumerating.

- (206) a. *Urtero (geroz eta) jende gehiagok erosten ditu Toyota autoak.*
 year-every later and people more.erg buy.prog aux Toyota car-D.pl
 ‘More people buy Toyotas every year’
- b. *Euri-tanta bakoitzeko lore bat hazten da.*
 rain-drop each-gen flower one grow.prog aux
 ‘For every drop of rain a flower grows’
- c. *Landatu genituen ezkur guztiak/denak haritz ederrak*
 plant aux.rel acron all-D.pl/all-D.pl oak beautiful
izan arte hazi ziren.
 be until grow aux
 ‘Every acorn we planted grew into a beautiful oak tree’

It is important to note that these universal D/A-quantifiers cannot be interchanged. Thus, no universal D-quantifier can be used instead of the A-quantifier *urtero* ‘every year’ in the example in (206a); *bakoitz* is the

⁷² The interrogative *zenbat* loses its mass interpretation ‘how much’ due to the fact that *-na* is a distributive suffix and as a consequence can only attach to count term.

only D-quantifier that can be used in (206b); *guztiak* and *denak* are the D-quantifiers that need to be used in (206c).

3.5.17.1 Rate Phrases

- (207) a. Tren hori orduko laurehun kilometroan doa.
train that hour.gen four.hundred km.ines goes
'This train goes at 400 kms per hour'
- b. Eguneko hogeï kilometro korri egiten ditut.
day.gen twenty km run do.prog aux
'I run twenty kms a day'
- c. Jonek bere aurpegia egunean bitan/bi aldiz/bi alditan (cf. §2.10)
Jon.erg his face-D.sg day-D.sg.in two.loc/two time.inst/two time.loc
egunero/egun guztietan (cf. §3)
day-every/day all-D.pl-in
garbitzen du.
clean.prog aux
'Jon cleans his face twice a day/every day'

3.5.18 Type (2) Quantifiers

In Basque, wh-quantifiers as well as adjectives which imply 'different' or 'similar' are possible: *berdin* 'same', *ezberdin* 'different; lit.: not same', *kontrako* 'opposite, rival', etc.

- (208) a. Zein ikaslek erantzun zituzten zein galdera?
which student.erg answer aux.pl which question
'Which students answer which questions?'
- b. Ikasle guztiek galdera berdinak erantzun zituzten azterketan.
student all-D.pl.erg answer same-D.pl answer aux exam.in
'All the students answered the same questions on the exam'
- c. Ikasle bakoitzak galdera ezberdin bat erantzun zuen azterketan.
student each-D.sg.erg answer different one answer aux exam.in
'Each student answer a different question on the exam'
- d. Ikasle ezberdinek galdera ezberdinak erantzun zituzten.
student different-D.pl.erg question different-D.pl answer aux
'Different students answered different questions'
- e. Peruk eta Jonek kontrako alderdi politikoei babesten die.
Peru.erg and Jon.erg opposite side political-D.pl.dat support aux
'Peru and Jon support rival political parties'

- f. Eraikuntza berdineko apartamentu ezberdinetan bizi dira.
building same.gen apartment different.loc live aux
'They live in different apartments in the same building'
- g. Partehartzaile guztiak kolore berdineko gorbata zeramaten.
participant all-D.pl.erg color same.gen tie bring
'All the participants wore the same color necktie'
- h. Peruk Mirenekin dantza egin zuen baina beste inork
Peru.erg Miren.with dance do aux but other anyone.erg
ez zuen beste inorekin dantza egin.
no aux other anyone.with dance do
'Peru dance with Miren but no one else danced with anyone else'
- i. Margoak gela ezberdinetan edo gela bakar bateko horma
painting-D.pl room different.loc or room single one.gen wall
ezberdinetan zintzilikatu beharko lirateke.
different.loc hung must.rel aux.irrealis
'The paintings should be hung in separate rooms or on different walls
of the same room'
- j. Epaimahaikide ezberdinek ondorio ezberdinak atera zituzten
juror different.erg conclusion different-D.pl take.out aux
argudio berdinetatik.
arguments same-D.pl.abl
'Different jurors drew different conclusions from the same arguments'

3.5.19 Type (1, (1, 1))

3.5.19.1 Comparative D-Quantifiers

Basque comparative D-quantifiers do not have exactly the same distribution as other quantificational expressions and in some contexts, comparative quantification is expressed in the predicate by making use of something like 'the quantity is more/less numerous'.

Thus, we can have comparative D-quantifiers as:

- (209) a. *Subject:* Irakasle baino ikasle gehiago etorri zen festara.
teacher than student more come aux party.to
'More students than teachers came to the party'
- b. *Subject:* Gutxienez irakasle bezainbat ikasle etorri zen
at least teacher as many as student come aux
festara
party.to
'At least as many students as teachers came to the
party'

- c. *DO*: Irakasle baino ikasle gehiago ezagutzen dut.
teacher than student more know.prog aux
'I know more students than teachers'
- d. *Obj Prep*: Irakasle baino ikasle gehiagorekin lan egin dut.
teacher than student more.with work do aux
'I have worked with more students than teachers'
- e. *Raising*: Iduritzen zait emakume baino gizon gehiagok sinatu
seem aux woman than man ore.erg sign
dutela eskaera.
aux.that petition
'It seems to me that more women than men signed the
petition'

In possessive NPs, Basque uses comparatives in the predicate.

- (210) a. Lapurtutako bizikletetan ikasleen eta irakasleen
stolen bicycle-D.pl-loc student-D.pl.gen and teacher-D.pl.gen
kopurua berdina da.
quantity-D.sg same is
'Lit.: When it comes to stolen bicycles, the quantity of bicycles stolen
from students and from teachers is the same'
'Just as many students' as teachers' bicycles were stolen'

It is important to note that there is a tendency among Basque speakers to express comparative quantification in the predicate (by means of relative clauses) even in cases such as those in (209).

- (209') a. Festara etorri ziren ikasleen kopurua irakasleena
party.to come aux student-D.pl.gen quantity teacher-D.pl.gen
baino handiagoa zen.
than more aux
'The quantity of students that came to the party is bigger than that
of teachers'
- b. Festara etorri ziren ikasleen kopurua gutxienik
party.to come aux student-D.pl.gen quantity at least
irakasleena bezainbatekoa zen.
teacher-D.pl.gen as many as.gen aux
'The quantity of students that came to the party is at least as many
as that of teachers'
- c. Ezagutzen dudan ikasleen kopurua irakasleena
know.prog aux.comp student-D.pl.gen quantity teacher-D.pl.gen
baino handiagoa zen.
than more aux
'The quantity of students that I know is bigger than that of teachers'

- d. Nerekin lan egiten duten ikasleen kopurua
 I.gen.with work do.prog aux.comp student-D.pl.gen quantity
 irakasleena baino handiagoa zen.
 teacher-D.pl.gen than more aux
 ‘The quantity of students that work with me is bigger than that of students’
- e. Iduritzen zait eskaera sinatu duten gizonen kopurua
 seem aux petition sign aux.comp man-D.pl.gen quantity
 emakumeena baino handiagoa dela
 woman-D.pl.gen than bigger aux.that
 ‘It seems to me that the quantity of men that signed the petition is bigger than that of women’

3.5.19.2 Combination with Conjunction

- (211) a. Gizon, emakume eta ume guztiek/denek/orok uretara
 man woman and child all-D.pl.erg/all-D.pl.erg/all.erg water.to
 jauzi egin zuten.
 jump do aux
 ‘Every man, woman and child jumped into the water’
- b. Gizon emakume eta ume bakoitzak salbamendu-jaka bat
 man woman and child each-D.sg.erg life-jacket one
 jantzi zuten.
 wear aux
 ‘Each man, woman and child wore a life-jacket’
- (212) Gizon, emakume edo ume-ren batek lan egiten du asteburuetan.
 man woman or child.gen one.erg work do.prog aux weekend.loc
 ‘Some man, woman or child works on weekends’

3.5.19.3 Predicates

Again, comparative quantification is expressed in the predicate by making use of something like ‘the quantity is more/less numerous’

- (213) Festara etorri ziren ikasleen kopurua ikasten gelditu
 party.to come aux student-D.pl.gen quantity study.prog stop
 zirenena baino handiagoa da.
 aux.comp than bigger aux
 ‘Lit.: The quantity of students that came to the party is bigger than (the quantity of students) that stayed at home to study’
 ‘More students came to the party than stayed at home to study’

3.5.20 Floating Quantifiers

As a general rule, Basque can be said not to allow floating quantifiers, except for (a concrete use of) *oro* ‘all’ (cf. Artiagoitia 2003, Duguine 2003, to appear). Recall that *oro* is the only Basque universal D-quantifier that can appear without the D (214) or with the D combined with the nominal expression – not with the quantifier itself – (215a, b). The rest of universal D-quantifiers need to appear combined with the D in order to be grammatical (cf. Section 3.3). Examples repeated from (103c), and (108a, b).

- (214) Ikasle oro-k lan bat egin zuen ikasgaia gaindi-tze-ko.
 student all-erg work one-abs make aux.sg subject-D.sg-abs pass-nom-gen
 ‘All of the students must write a paper to pass the subject.’
- (215) a. [Ikasle-ek oro-k] lan bat egin zuten ikasgaia
 student-D.pl.erg all-erg work one-abs make aux.pl subject-D.sg
 gaindi-tze-ko.
 pass-nom-gen
 ‘All the students must write a paper to pass the subject.’
- b. *[Ikasle oro-ek] lan bat egin zuten ikasgaia gaindi-tze-ko.
 student all-erg work one-abs make aux.pl subj.-D.sg pass-nom-gen

The D in (215) can be replaced by a demonstrative (216), repeated from (109).

- (216) a. [Ikasle hauek oro-k] lan bat egin zuten ikasgaia
 student these.erg all.erg work one-abs make aux.pl subj-D.sg
 gaindi-tze-ko.
 pass-nom-gen
 ‘All these students must write a paper to pass the subject.’
- b. [Lagun hauek-in oro-rekin] joango naiz.
 friend these-com all-com go.fut aux.sg
 ‘I’ll go with all these friends.’

A similar construction is also available to the Q *guzti* ‘all’ and *den* ‘all’. The difference between these two Qs and *oro* ‘all’ is that the former must necessarily appear with the D.

- (217) [Ume hauek guzti-ak/den-ak] berandu iritsi ziren.
 child these.abs all-D.pl.abs late arrive aux.pl
 ‘All these children arrived late.’

One very interesting property of the universal quantifiers that can combine with a [NP+dem] or [NP+D] sequence is that they behave as floating quantifiers, not adjacent to the N.

- (218) a. *Ikasle hauek lan bat egin beharko dute orok.*
 student these.erg work one make must aux all-erg
 ‘These students must write a paper to pass the subject all.’
- a’. *Ikasleek lan bat egin beharko dute orok.*
 student-D.pl.erg work one make must aux all-erg
 ‘These students must write a paper to pass the subject all.’
- b. *Ume hauek berandu iritsi ziren guzti-ak.*
 child these.abs late arrive aux.pl all-D.pl.abs
 ‘These children arrived late all.’
- c. *Politikari hauek gezurrak esan zituzten den-ek.*
 politician these.erg lie-D.pl-abs say aux.pl all-D.pl.erg
 ‘These politicians told lies all.’

Apart from these universal D-quantifiers, there is no other quantificational element that can be floated in Basque.⁷³

- (219) a. *Ikasle asko/batzuk etorri dira gaur.*
 student many/some come aux today
 ‘Many/Some students came today’
- b. **Ikasle gaur asko/batzuk etorri dira*
 student today many/some came aux
- c. **Ikasle gaur etorri dira asko/batzuk*
 student today came aux many/some
- (220) a. *Bost ikasle etorri dira gaur.*
 five student come aux today
 ‘Five students came today’

⁷³ Artiagoitia (2003) claims that there are a few non-standard uses of floating *asko* ‘many, much’.

- (i) *Perretxikoak mendian asko ikusi ditut.*
 mushroom-D.pl mountain-in many see aux
 ‘I have seen many mushrooms in the mountain’

I fully agree with the data offered by Artiagoitia, however, the ‘floating’ use of *asko* is restricted to some syntactic positions, a restriction that does not affect *oro*’s floated use.

- (ii) a. **Ikasleek askok ikusi dute hori.*
 student-D.pl-erg many-erg see aux that
 b. **Ikasleek hori askok ikusi dute.*
 student-D.pl-erg that many-erg see aux
 c. **Ikasleek hori ikusi dute askok.*
 student-D.pl-erg that see aux many-erg

I do not have anything interesting to say about these cases right now, and I will leave it for future research.

- b. *Ikasle gaur bost etorri dira
student today five came aux
- c. *Ikasle gaur etorri dira bost
student today came aux five

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Chapter 4

Garifuna Quantification

Jena Barchas-Lichtenstein

4.1 Introduction

Garifuna is an Arawak language spoken primarily in Belize and Honduras. Word order is VSO, although there are some grammatical quirks that are not typical of VSO languages, such as auxiliaries that come after the verb. These auxiliaries can express things like tense, aspect, focus, and transitivity. Furthermore, definite and indefinite arguments display almost entirely different syntax; a transitive sentence with an indefinite object looks like an intransitive sentence in its use of both auxiliaries and agreement markers. Focused constituents are fronted into the preverbal position, obscuring the basic VSO order.

The language is known for incorporating a tremendous number of loanwords, many of which are phonologically assimilated. Vocabulary items come from Arawak, Carib, English, French, Spanish, and other sources.

Garifuna has an extensive agreement system; there are at least seven series of agreement markers (Munro 1997: 459n5) for each of seven agreement categories (first singular, second singular, third feminine singular, third masculine singular, first plural, second plural, third plural). While linguists have a solid understanding of which constructions use which markers, the motivation for each series of markers remains obscure.¹

Garifuna quantification is, like most aspects of the language, highly complex. D-quantifiers can be classified by typical syntactic position: they may function as predicates, NP modifiers, or possessed nouns. Furthermore, the relationship between partitive and conclusive² constructions (see Sections 4.6.1.6 and

¹ See the work of Pamela Munro (1997) for some discussion of this issue, as well as the extensive writings of Douglas Taylor (especially 1951b).

² This term comes from Taylor (1952: 165). Elsewhere, he calls this construction ‘completive’ (Taylor 1956a: 13).

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4.6.1.7) parallels that of indefinite and definite noun phrase. Complicating the picture still more, some quantifiers can appear in both partitive and conclusive constructions (as well as alone); these constructions best demonstrate differences in agreement. In short, there appears to be no unifying syntax that links these various types of quantifier constructions.

However, it is worth emphasizing that partitives are particularly common in a variety of quantifier constructions. These use a preposition meaning ‘from’ or ‘out of’.

Meanwhile, most A-quantifiers appear in constructions that parallel other adverbial constructions. These are somewhat more syntactically complex, as they appear never to be monomorphemic. Instead, nearly all A-quantifiers have internal noun phrase structure.

4.2 Some Basic Facts About Garifuna Syntax and Agreement

As I noted above, Garifuna has an extensive agreement system. Predicates agree with both their subjects and their objects³:

- (1) *Éiha n-umu-tibu.*
 see P1SG-AUX.TR.NFUT-T2SG
 ‘I see you.’

Similarly, demonstratives agree with the nouns they modify:

- (2) a. *hiyánru tó*
 woman 3F.PROX
 ‘this woman’
 b. *iyénri lé*
 man 3M.PROX
 ‘this man’
 c. *surúsiya há*
 doctor 3PL.PROX
 ‘these doctors’

Prepositions also agree with their objects, and agreement is found in various other constructions as well. My goal here is not to catalog the uses of agreement but simply to highlight its prevalence, since understanding Garifuna data requires recognition of just how frequent agreement is. Munro (1997) gives a much fuller discussion of these issues.

³ All examples are presented in a modified version of the standard Garifuna orthography (Cayetano 1993); the largest difference between the two orthographies is that I mark stress in all words. Following Munro (2007), I have normalized the presentation of auxiliaries; they are written as separate unstressed words. I also write long vowels, and do not indicate stem differences for verbs. All abbreviations used in glosses are presented at the end of this chapter.

4.2.1 Animacy and Plural Agreement

Inanimate nouns cannot trigger plural agreement in Garifuna. This is true for all categories where agreement is triggered, including both subjects and objects of predicates, demonstratives, prepositions, etc. Since there are three third-person agreement categories (feminine, masculine, and plural), inanimate nouns agree for gender but not for number.

- (3) a. Brí-ti báalu.
 be.good-T3M ball
 ‘The ball is good’ or ‘The balls are good.’
- b. *Brí-tiyan báalu.
 be.good-T3PL ball
 ‘The balls are good.’ (intended)
- (4) a. Éiha t-umu-tu Máry barúru tó.
 see P3F-AUX.TR.NFUT-T3F Máry plantain 3F.PROX
 ‘Mary saw this plantain’ or ‘Mary saw these plantains.’
- b. *Éiha t-umu-tiyan Máry barúru há.
 see P3F-AUX.TR.NFUT-T3PL Máry plantain 3PL.PROX
 ‘Mary saw these plantains.’ (intended)

In example (3a), the verb is marked for a singular subject regardless of whether the meaning is singular or plural. In sentence (4a), the transitive auxiliary *-umu-* is marked for a singular object, and the demonstrative *tó* is singular. This sentence can also refer either to one plantain or to many. However, neither of these sentences is grammatical with plural agreement marking, even with plural meaning. The lack of plural marking for inanimate nouns has an additional consequence: since (grammatical) gender is marked for the third-person singular but not plural, inanimates agree for gender in places where animates do not.⁴

Both of these examples, then, are ambiguous with regard to number. Quantifiers are sometimes used to disambiguate; when I asked for a plural immediately following a singular, my consultant Mr. Lopez often used *báandi* ‘many’ or *súngubei* ‘all’ to indicate a difference.

- (5) a. Éiha n-umu-tu warúguma.
 see P1SG-AUX.TR.NFUT-T3F star
 ‘I saw the star’ or ‘I saw the stars.’

⁴ See Munro (1997) for a fuller discussion of Garifuna gender.

- b. Éiha-tina báandi warúguma.
 see-T1s a.lot star
 ‘I saw many stars.’

Sentence (5a) is itself ambiguous with regards to number. (There are other differences between sentences (5a) and (5b) resulting from the use of *báandi*, which does not trigger object agreement on the verb; a construction with *síngubei* would, however, have shown singular object agreement as in (5a).) Compare example (6) with example (5a), where the verb takes singular object agreement even though the word *síngubei* is used here to disambiguate for number.⁵ Here, I had asked for ‘I ate the plantains’ immediately following ‘I ate the plantain’.

- (6) Hóu n-umu-tu sún-gubei barúru.
 eat P1SG-AUX.TR.NFUT-T3F all-CONCL plantain
 ‘I ate all the plantains.’

Animate nouns, on the other hand, take obligatory plural agreement. Compare the following. Note especially that (7c) cannot have a plural reading, although the syntactically parallel (5a) can.

- (7) a. *Éiha n-umu-tiyan fulúri.
 see P1SG-AUX.TR.NFUT-T3PL flower
 ‘I saw the flowers.’ (intended)
- b. Éiha n-umu-tiyan óunli.
 see P1SG-AUX.TR.NFUT-T3PL dog
 ‘I saw the dogs.’
- c. Éiha n-umu-ti óunli.
 see P1SG-AUX.TR.NFUT-T3M dog
 ‘I saw the dog’; *‘I saw the dogs.’

Animates can also be pluralized using *báandi*, taking the same agreement pattern shown in (5b):

- (8) Éiha-tina báandi óunli.
 see-T1s a.lot dog
 ‘I saw a lot of dogs.’

⁵ Sentence (6) is, itself, ambiguous for number. It can also mean ‘I ate all of the plantain’ (i.e. ‘I ate the whole plantain’), as discussed in Section 4.4.1.

Animacy is typically hierarchical (Silverstein 1976). First person pronouns are the most likely to be considered animate, then second person pronouns, third person pronouns, proper names, kin terms, human terms, animals (in decreasing order by size), plants, natural forces, concrete objects, and abstractions. Natural forces do not seem to be considered animate in Garifuna; neither ‘mountains’ nor ‘stars’ triggers plural agreement.⁶ Nor do plants: ‘trees’ and ‘flowers’ cannot replace ‘dogs’ in a sentence like (7b) above. In Garifuna, the dividing line between animates and inanimates lies between animals and plants. ‘Fish’, ‘worms’, ‘rats’, ‘mosquitos’, ‘lizards’, ‘snakes’, ‘birds’, and ‘cockroaches’ can all take plural agreement; so can ‘eggs’, at least for some speakers.⁷

Finally, animates take plural marking even if their referents are not currently living:

- (9) a. Heidi afríduha ba-nei ûdüru.⁸
 Heidi fry AUX.BA-N3M fish
 ‘Heidi is the one who fried the fish (sg.).’
- b. Heidi afríduha ba-niyan ûdüru.
 Heidi fry AUX.BA-N3PL fish
 ‘Heidi is the one who fried the fish (pl.).’

Oddly, some inanimate nouns alternate gender agreement in some constructions to express a distinction between singular and plural:

- (10) a. Gurú t-umu-ti Holly dábula.
 touch P3F-AUX.TRANS.NFUT-T3M Holly table
 ‘Holly touched the table.’
- b. Gurú t-umu-tu Holly dábula.
 touch P3F-AUX.TRANS.NFUT-T3F Holly table
 ‘Holly touched the tables.’
- (11) a. Éiha n-umu-ti sínduru.
 see P1SG-AUX.TRANS.NFUT-T3M lemon
 ‘I saw the lemon.’

⁶ According to Taylor (1951a: 44), ‘star’ is one of two non-animate nouns that can take plural agreement; ‘name’ is the other. In Mr. Lopez’s speech, neither of these nouns *does* take plural agreement regularly, although sentences with ‘star’ and plural agreement are occasionally judged to be grammatical.

⁷ During one elicitation session, Mr. Lopez did not use plural agreement for ‘worms’, but in subsequent sessions he did so. Note additionally that nouns denoting animates have ‘common’ gender: one gender may be felt to be less marked, but these can agree as either gender depending on the gender of their referent (Munro 1997, Taylor 1951c).

⁸ The *ba* morpheme – here used to indicate a focus construction – is enormously complex. See Eculona (2000).

- b. Éiha n-umu-tu sínduru.
 see P1SG-AUX.TRANS.NFUT-T3F lemon
 ‘I saw the lemons.’

This seems to occur only with definite noun phrases as objects. It does not occur with subjects, and it does not occur consistently when the noun phrases are quantified. Furthermore, only grammatically masculine nouns seem to behave in this way; there may also be semantic or lexical restrictions.

4.2.2 Plural Marking on Nouns

Those nouns at the top of the animacy hierarchy – that is, those that refer to humans – take plural marking on the noun itself. There are at least three ways that plural marking is displayed.

First, those nouns that are derived from verbs⁹ form their plurals similarly to verbal predicates. Their singular forms are inflected for gender using the t-series suffixes *-ti* (m) and *-tu* (f.), while the plural shows the (non-gendered) t-series suffix *-tiyan*. A few non-deverbal nouns also seem to pluralize in the same fashion (see Table 4.1).

Second, a number of other nouns that refer to humans are pluralized using a plural morpheme; this may be entirely irregular, or it may have allomorphs *-yu*, *-yan*, *-yün*, *-nu* (compare Taylor 1952: 152). Suazo (1991: 39–41) suggests that *-yan* may form the plural for nouns of Carib origin, while *-yün* and *-yun* may be of Arawak origin (see Table 4.2).

Table 4.1 Plurals of deverbal nouns

	Singular	Plural
‘fisherman’	óuchahati	óuchahatiyan
‘writer’	abûrûhati	abûrûhatiyan
‘singer’	gerémuhati	gerémuhatiyan
‘my grandfather’	náruguti	nárugutiyan

Table 4.2 Examples of plural morphemes

	Singular	Plural
‘man’ (F speaker)	iyénri	iyénruyu
‘man’ (M speaker)	wugûri	wugûriyan
‘child’	râhû	râhiyün
‘woman’ (F speaker)	hiyánru	hiyánruyu

⁹ Nouns of this sort, like ‘writer’, ‘singer’, and ‘fisherman’, are segmentable, but their segmentation is beyond the scope of this paper. See Taylor (1952: 156) for some discussion of these types of forms.

Other nouns that form plurals in similar way include a number of kin terms,¹⁰ such as *nagûtü* ‘my grandmother’, *nudüha* ‘my cousin’, *nibugaya* ‘my older brother’.

Still other nouns are pluralized with collective *-gu*, which ‘is employed to the exclusion of the nominal pluralizer with nouns denoting inanimate objects, although not with them alone’ (Taylor 1956a: 13). This suffix is used to pluralize *méisturu* ‘teacher’, *surúsiya* ‘doctor’, *Miritagaachalu* ‘Chinese person’, *anímaalu* ‘animal’ and others.

A few nouns have irregular plurals. The plural of *Garífuna* ‘Garifuna person’ is *Garínagu*. (This *-gu* is, presumably, the collective.)

There may also be other ways of forming plurals that remain to be seen. The only nouns I know of that describe human referents yet do not seem to take some pluralizing morpheme are *leskuélana* ‘student’,¹¹ *máduhun* ‘sailor’, *mútu* ‘person’, and *gurígiya* ‘person’.

4.2.3 Definite and Indefinite Syntax

Definites and indefinites have almost wholly separate syntax in Garifuna. Since some quantified noun constructions look definite and others look indefinite, a discussion of definite and indefinite syntax is necessary to understand Garifuna quantifiers.

Indefinite objects do not trigger agreement on transitive verbs, while definite objects typically do (see also Munro 1997: 444–450). Transitive verbs with indefinite objects, then, inflect like intransitive verbs. Animacy does not seem to affect this property, nor does the difference between mass and count nouns. The difference between definite and indefinite is typically not marked in any other way; compare the following minimal pairs.

- (12) a. Hóu-tina sùgara.
eat-T1s sugar
‘I ate sugar.’
- b. Hóu n-umu-ti sùgara.
eat P1SG-AUX.TR.NFUT-T3M sugar
‘I ate the sugar.’
- (13) a. Éiha-tina óunli.
see-T1s dog
‘I saw dogs.’ (Much less commonly: ‘I saw a dog’)
- b. Éiha n-umu-tiyan óunli.
see P1SG-AUX.TR.NFUT-T3M dog
‘I saw the dogs.’

¹⁰ All kin terms are given here with first person singular possessor.

¹¹ This word is morphologically complex, from *leskuéla* ‘school’.

- (14) Óumuga-tina.
 sleep-T1s
 'I slept.'

The verbs in both (12a) and (13a) agree only with their subjects, as their objects are indefinite; correspondingly, (12b) and (13b) mark both subject and object directly on the verb. These pairs of sentences look quite different: in the sentences with indefinite objects, the subject is marked with a t-series suffix directly on the verb as in the intransitive (14), and the object is unmarked. Meanwhile, in the sentences with definite objects, we find the transitive non-future auxiliary *-umu-*, the subject is marked with a prefix, and the object is marked with a t-series suffix. When an object is indefinite, *ába* 'one' is almost always required if it is singular. A sentence like (13a) can be interpreted to mean 'I saw a dog', but it is rare.

In subject position, on the other hand, *ába* is used to indicate indefiniteness, but it is not obligatory. For example:

- (15) a. Éibagua-ti óunli.
 run-T3M dog
 'The dog runs.' or 'A dog runs.'
- b. Éibagua-ti ába óunli.
 run-T3M one dog
 'One dog runs.' or 'A dog runs.'

Demonstratives are also often used to indicate definiteness (Holly Farless, personal communication).

Another way in which definite and indefinite syntax differs is in the placement of modifiers. Garifuna only has what looks like adjectives modifying indefinites; definites are modified by what look like relative clauses:

- (16) a. Busíye-tina ába harú-ti óunli.
 need-T1s one be.white-T3M dog
 'I need a white dog.'
- b. Busíye n-umu-ti óunli lé
 need P1SG-AUX.TR.NFUT-T3M dog 3M.PROX
 harú be-i.¹²
 be.white AUX.BA-R3M
 'I need the white dog.' ('I need the dog that is white.')

¹² *ba-i* and *ba-u* become *bei* and *bou* through phonological processes outside the scope of this paper; *yan-i* and *yan-u* become *yein* and *youn*.

In the indefinite case, the adjective appears before the noun (against typological expectations), while in the definite case, it appears after it. Furthermore, the agreement markers are different. In the indefinite case, the modifier agrees with what is modified by means of a t-series suffix; the definite case looks like a sentence with a focused subject. In both cases, however, an attributive adjective has predicate-like morphology. Modifiers maintain this distinction between definite and indefinite syntax even when they modify a subject.

4.3 Generalized Existential (Intersective) Quantifiers

4.3.1 D-Quantifiers

Most of the quantifiers in this semantic class are what I call modifier quantifiers. They appear in constructions that look like the indefinite adjectival constructions described above. Unlike adjectives, however, the quantifiers themselves do not take agreement markers of any sort. As Taylor (1956b: 146) notes, '[s]ome numeratives (including all numerals) . . . function as attributes when placed BEFORE the head of a nominal phrase.'

Quantifiers in this semantic group with this syntax include *báandi* 'a lot', *sarágu* 'a lot,' *dúseenu* 'a dozen' (presumably from French), *féru* 'a pair' (presumably an English or French borrowing) and all of the cardinal numbers. *Báandi* and *sarágu* are often used interchangeably, but they sometimes contrast:

- (17) a. Abúduha-tiyan báandi mútu l-uwágu McCain.
 vote-T3PL a.lot person P3M-on McCain.
 'A lot of people voted for McCain.'
- b. Sarágu mútu abúduha-tiyan l-úwagu Obama.
 lots person vote-T3PL P3M-on Obama
 'Most people voted for Obama.'

Féru 'a pair' has some semantic restrictions. *Féru* is limited to things that come in sets of two, and cannot be used in the more general sense of 'two'.

- (18) Būrûba séidü féru há-dagiya sún anímaalu-gu harúma-tiyan.¹³
 take seven pair P3PL-from all animal-COLL be.clean-T3PL
 'Take seven pairs of animals that are clean.' (Genesis 7:2)

¹³ All Bible citations are based on the Sociedades Bíblicas Unidas Garifuna Bible translation, *Sandu Būrütu* (2001). Forms given here were checked with Maurice Lopez, occasionally changed, and retranslated.

One can have a pair of socks, but not a pair of children. It has, in short, the more constrained use of English ‘a pair’ as opposed to ‘a couple’.

Finally, all of the cardinal numbers fall into this syntactic group.

- (19) Éiha-tina séngü óunli.
 see-T1SG five dog
 ‘I saw five dogs.’

Only the numbers *ába* ‘one’, *biyáma* ‘two’, and *úrüwa* ‘three’ appear to be native to Garifuna; all larger numbers were borrowed from French and phonologically nativized (see Suazo (1991: 75–79) for an exhaustive list). Some of these, like *biyáma wéin* ‘forty’ (lit, ‘two twenties’) may be calques from an earlier Garifuna number system similar to Mesoamerican vigesimal systems.

4.3.1.1 Interrogative Quantifiers

Garifuna has two interrogative quantifiers, *átiri* ‘how many? how much?’ and *ká* or *káta* ‘which? what? who?’

Átiri is almost always followed by an auxiliary (*ba* or *yan*, indicating future and non-future, respectively) and a reduced d-series agreement marker, and then a question particle.

- (20) *Átiri* yo-un (sá) budéin l-atu?
 how.many AUX.YAN-R3F (Q) bottle P3M-drink
 ‘How many bottles did he drink?’

However, it appears without the auxiliary and agreement marker in the questions ‘How old are you?’ and ‘How much does it cost?’ Both of these constructions lack any explicit verbal element, however, as do their answers (see also (Taylor 1956b: 147)):

- (21) a. *Átiri* sá t-uwágu sabádu?
 how.many Q P3F-on shoe?
 ‘How much for the shoes?’
 b. *Átiri* sá b-áu?
 how.many Q P2SG-with?
 ‘How old are you?’

Unlike *átiri*, *káta* does not use an auxiliary, although it also requires an r-series agreement marker. The shortened form *ká*, on the other hand, requires no agreement. Taylor (1956a: 16, 1956b: 140) suggests that the free form *ká*

underlies bound *káta-*, which also serves as a noun meaning ‘thing’. In the data I have seen, *ká* is much more frequent than *káta-* in contexts where it means ‘which?’, while *káta-* seems to be more frequently used to mean ‘what?’ or ‘who?’ However, both forms are used in both types of questions:

- (22) a. Káte-i sá l-ídagiya béna l-abúlei-du be-i
 what-R3M Q P3M-from door P3M-not.know-INC AUX.BA-R3M
 Wán l-ún l-adóuru-ni?
 John P3M-to P3M-open-N3M
 ‘Which door did John forget to open?’
 (Lit. ‘Which of the doors...?’)¹⁴
- b. Ká t-ídagiya gáfu l-abúlei-du bo-u
 what P3F-from box P3M-not.know-INC AUX.BA-R3F
 Wán l-ún l-adóuru-nu?
 John P3M-to P3M-open-N3F
 ‘Which box did John forget to open?’
 (Lit. ‘Which of the boxes...?’)
- c. Ká sá óunli harú be-i?
 what Q dog be.white AUX.BA-R3M
 ‘Which dogs are white?’

The following examples illustrate the differences in the two constructions described above. Note the placement of the auxiliary before the particle *sá*.

- (23) a. Átiri ya-yan sá leskuélana yán?
 how.many AUX.YAN-R3PL Q student here
 ‘How many students are here?’
- b. Káte-yan sá leskuélana yán ba-yan?
 what-D3PL Q student here AUX.BA-R3PL
 ‘Which students are here?’

4.3.1.2 Value Judgment Quantifiers

In Garifuna, as in many languages, the value judgment quantifiers are syntactically complex. These quantifiers take the form of predicates, including

¹⁴ These ‘which’ questions in (22a) and (22b) use partitive constructions, although these questions do not always do so (22c). See Section 4.6.1.6 for a description of Garifuna partitives.

burídügü- ‘be enough’,¹⁵ *gibe-* ‘be many/much’, *gibeya-* ‘be too many/much’, *inófu-* ‘be enough’, *lóguwa-* ‘not be enough’, and *mibe-* ‘not be many/much’.¹⁶

- (24) a. Burídügü-tu barúru tó n-éigi bo-u.
 be.enough-T3F plantain 3 F.PROX P1SG-eat AUX.BA-R3F
 ‘I ate enough plantains.’ (Lit. ‘The plantains I ate are enough.’)
- b. G-íbe-tu féin.
 AFF-be.much-T3F bread
 ‘There is a lot of bread.’
- c. G-íbe-ya-ti l-ebéigi.
 AFF-be.much-INTS-T3M P3M-cost
 ‘It costs too much.’ (Lit. ‘Its cost is too much.’)
- d. Mégei-tina séinsu inófu-ti¹⁷ l-ubá
 need-T1SG money be.enough-T3M P3M-before
 n-adûgü-ni n-uwéyasun.
 P1SG-make-N3M P1SG-trip
 ‘I will need enough money before I make my trip.’ (from Suazo 1991: 181)
- e. Lóguwa-tuwa yündü-tiyan leskuéla.¹⁸
 NEG.be.enough-T1PL go-T3PL school
 ‘Not enough of us went to school.’
- f. M-íbe-ti n-éigi.
 NEG-be.much-T3M P1SG-eat
 ‘I don’t eat much.’ (Lit. ‘My eating isn’t much.’)

¹⁵ *The People’s Garifuna Dictionary* (Cayetano 1993) lists this word as *búidürügü-*, suggesting a derivation:

buidü -rügü
 be.good -only

¹⁶ While *mibe-* is the regularly derived negative form of *gibe-*, I include it in this list because the other forms are not negatable in this way (see Munro and Gallagher in press). Similarly, while *gibeya-* is transparently related to *gibe-*, the exact meaning of *-ya* remains unclear. Suazo (1991: 180–181) suggests that *gibe-* means ‘be much/many’, and translates *-ya-* as ‘too much, very’. While this explains a number of cases, *gibe-* is often used too mean ‘too many’.

¹⁷ While Mr. Lopez begrudgingly accepted this sentence, he is often quite resistant to many transparent English loanwords and refused to use the word *inófu-* in any other sentence. Presumably, its distribution is the same as that of *burídügü-*.

¹⁸ The third-person marking on *yündü-*, as opposed to first-person, most likely indicates the indeterminate nature of this construction. That is, one does not know exactly who among ‘us’ went to school.

All of these quantifiers typically occur sentence-initially, in keeping with VSO order. Even when in the English translation the quantifier is a dependent of a verb (24c, f), these forms are nominalized and thus syntactically equivalent to (24d).

While Mr. Lopez accepted sentences with non-initial predicate quantifiers from other sources (24d, 25), he rarely volunteered any. These sentences were taken from textbooks and the Bible, and may not be commonly used in a conversational register.

- (25) Há siyán be-i h-anûgü g-íbe-ti
 3PL.PROX be.unable AUX.BA-R3M P3PL-bring AFF-be.much-T3M
 ába h-eréderun l-áu h-álama.
 then P3PL-stay P3M-with P3PL-hunger
 ‘Those that couldn’t bring a lot stayed with their hunger.’ (I Corinthians 11:21)

The cases where Mr. Lopez did accept non-clause-initial predicate quantifiers are telling, because these quantifiers do not have perfectly equivalent syntax. Consider the following:

- (26) Mégei-tina **g-íbe-ti** séinsu l-ubáragiya n-adûgü-ni
 need-T1SG AFF-be.much-T3M money P3M-before P1SG-make-N3M
 n-uwéyasun.
 P1SG-trip
 ‘I need a lot of money before I make my trip.’
- (27) a. *Mégei-tina brídügü-ti séinsu l-ubáragiya
 need-T1SG be.enough-T3M money P3M-before
 n-adûgü-ni n-uwéyasun.
 P1SG-make-N3M P1SG-trip
 ‘I need enough money before I make my trip.’ (intended)
- b. Mégei-tina l-ún brídügü l-á
 need-T1SG P3M-to be.enough P3M-COMP
 n-iséinsu l-ubáragiya n-adûgü-ni n-uwéyasun.
 P1SG-money P3M-before P1SG-make-N3M P1SG-trip
 ‘I need enough money before I make my trip.’ (Lit. ‘I need for there to be enough money before I make my trip.’)

In (26), *gíbe-* appears syntactically parallel to indefinite attributive adjectives (compare (28)). Meanwhile, *brídügü-* cannot appear in this position. Instead, it can only appear as a predicate in a subordinate clause, parallel to (29).

- (28) Busíye-tina ába harú-ti óunli.
 want-T1SG one be.white-T3M dog
 ‘I need a white dog.’
- (29) Mégei-tina l-ún n-éigi.
 need-T1SG P3M-to P1SG-eat
 ‘I need to eat.’

Yet the distribution of *gibe-* does not include all of the positions that attributive adjectives can take. More work remains to be done on this question.

Many of the examples of non-initial predicate quantifiers that Mr. Lopez did provide used *úwa-* ‘not exist, be none’ to negate predicates that are not negatable by other means (see Munro and Gallagher in press). Some of these cases are discussed in Section 4.3.1.3.

4.3.1.3 *Úwa-* ‘Not Exist, Be None’

Constructions with ‘no’ are expressed with the predicate quantifier *úwa-*, which also functions as a negative existential. The range of uses of *úwa-* illustrate some of the complexities of the syntax of predicate quantifiers; like *bridügü-*, it cannot function as an attributive adjective. However, it seems unlikely that *úwa-* falls into the class of value judgment quantifiers for semantic reasons.

The uses of *úwa-* overlap. It may be a negative existential or locative predicate:

- (30) a. **Úwa** ba-dibu t-ída múna.
 NEG.EXST AUX.BA-D2SG P3F-in house
 ‘You won’t be in the house.’
- b. **Úwa-tiyan** óunli t-ída múna.
 NEG.EXST-T3PL dog P3F-in house
 ‘There are no dogs in the house.’

When *úwa-* appears in perfective aspect, it can be used to mean something like ‘there’s no more of it’ (Taylor 1956b: 150). If there are no plates, one says (31a), but if all the plates are dirty because you’re late to the party, you’ll be told (31b):

- (31) a. **Úwa-ti** isíyedu.
 NEG.EXST-T3M plate
 ‘There are no plates.’
- b. **Úwa-a-li** isíyedu.
 NEG.EXST-PRF-D3M plate
 ‘There are no more plates.’ (‘The plates are done.’)

Úwa- also has a more clearly negative quantificational meaning in many contexts:

- (32) a. **Úwa-ti** erémuha-ti brídu.
 NEG.EXST-T3M sing-T3M well
 ‘Nobody sings well.’
- b. **Úwa-tiyan** ní ába h-ádagiya g-erémuha-dii-tiyan.
 NEG.EXST-T3PL not.even one P3PL-from AFF-sing-POT-T3PL
 ‘None of them can sing.’
- c. **Úwa-tiyan** n-éihi.
 NEG.EXST-T3PL P1SG-see
 ‘I saw none.’
 (in response to a question like ‘How many dogs did you see?’)
- d. **Úwa-tiyan** busiye-tiyan l-ún t-amáredu
 NEG.EXST-T3PL want-T3PL P3M-to P3F-marry
 h-aráü l-úma ába óuchahati.
 P3PL-child P3M-with one fisherman
 ‘Nobody wants their daughter to marry a fisherman.’

In all of these related uses, *úwa-* appears clause-initially.

Úwa- can also be used to negate quantifiers that cannot otherwise be negated (Munro and Gallagher in press), including predicate quantifiers:

- (33) a. **Úwa-gubei-ti** éigi-ni brídügü-ti hó-un
 NEG.EXST-CONCL-T3M eat-NMZ be.enough-T3M P3PL-to
 sún mútu.
 all person
 ‘There was not enough food for everyone.’
- b. **Úwa-ti** brídügü t-a barúru n-éigi.
 NEG.EXST-T3M be.enough P3F-AUX.A plantain P1SG-eat
 ‘I don’t eat enough plantains.’

4.3.2 A-Quantifiers

There are quite a few existential A-quantifiers, including many constructions using *wéikaasu* ‘time’ (in the sense of ‘occasion’, possibly from Spanish *veces*): *ába wéikaasu* ‘once’, *biyáma wéikaasu* ‘twice’, etc., *sarágu wéikaasu* ‘many times’. Other A-quantifiers include *sarágu* ‘often, a lot’, *súnwan dán* ‘all the time, often, always’,¹⁹ *ságü dán* ‘often, always’, and *máma ságü dán* ‘not often, rarely’.

¹⁹ Probably from French *souvent temps* (Taylor 1956b: 149), and later reanalyzed as containing *sún* ‘all’. I have normalized the spelling of this word as *súnwan* following the suggestion of Pamela Munro; the stress on this word is not consistent. Stress on the second syllable supports

- (34) a. Hóu-tu sùgara **ába** **wéikaasu** ságü háti.
eat-T3F sugar one time all month
'She eats sugar once a month.'
- b. **Máma**²⁰ **ságü**²¹ **dán** guwá-tuwa duwéin.
NEG all time drink-T1PL wine
'We drink wine once in a while.' (Lit. 'It's not all the time we drink wine'.)
- c. **Sarágu wéikaasu** t-abúdaha Háli l-uwágu
lots time P3F-vote Holly P3M-on
ába wügüri, **máma yan** **súnwan** **dán.**
one man, NEG AUX.YAN always time
'Most of the time Holly has voted for a man, but not always.'
- d. **Súnwán dán** n-árügüdü-nu bóguwatu péro
always time P1SG-take-N3F bus but
súnwan dán n-éibugu.
always time P1SG-walk
'I often take the bus, but usually I walk.'
- e. Gátsby éigi be-i ûdürü **sarágu.**
Gatsby eat AUX.BA-R3M fish lots
'Gatsby eats fish often.'

Typically, these quantifiers appear either sentence-initially or sentence-finally, much like other adverbials.

There are no A-quantifiers that express value judgments. This semantic issue is handled by D-quantifiers and nominalized forms rather than verbal ones:

- (35) a. **G-íbe-ya-ti** n-éigi.
AFF-be.much-INTS-T3M P1SG-eat
'I ate too much.'
(Lit. 'My eating was too much.')
- b. **Bridügü-ti** n-arúmugu.
be.enough-T3M P1SG-sleep
'I slept enough.'
(Lit. 'My sleep was sufficient.')

Taylor's impression that this is from the French, while stress on the first syllable may support the idea that it has been reanalyzed as a variant of *sún*.

²⁰ I gloss a variety of negative elements as 'NEG'; Munro and Gallagher (in press) have an excellent analysis that treats this issue in much greater detail.

²¹ Although I use the same gloss 'all' for *ságü* and *sún*, *ságü* can only be used in temporal constructions.

Negative A-quantification, like negative D-quantification, is syntactically different from other intersective A-quantifiers. In Garifuna, expressing ‘never’ requires negating the verb and inserting the conclusive morpheme *-gubei* (see also Sections 4.2.1 and 4.6.1.7), which functions as a negative polarity item in these contexts:

- (36) a. M-erémuha-**gubei**-tina.
 NEG-sing-CONCL-T1SG
 ‘I never sing.’
- b. M-éigi-**gubei**-tina gamáru.
 NEG-eat-CONCL-T1SG shrimp
 ‘I never eat shrimp.’

4.4 Generalized Universal (Co-intersective) Quantifiers

4.4.1 D-Quantifiers

Quantifiers meaning ‘all’, ‘every’, or ‘each’ take the form of invariant modifiers and appear before the nouns they quantify. Such noun phrases always pattern as definites. The two variants of ‘all’ are *sún* and *súngubei*. While Taylor (1952: 153, 165) suggests that *sún* means ‘every or all’ while *súngubei* means ‘all (of a number of distinct entities)’, countability does not seem to explain the variation, since both forms occur with mass and count nouns.

- (37) a. Éiha n-umu-tiyan **sún-gubei** óunli.
 see P1SG-AUX.TR.NFUT-T3PL all-CONCL dog
 ‘I see all the dogs.’
- b. Hóu n-umu-ti **sun** sùgara.
 eat P1SG-AUX.TR.NFUT-T3M all sugar
 ‘I eat all the sugar.’
- c. **Sún** mútu busíye-tiyan l-ún t-amáredu
 all person want-T3PL P3M-to P3F-marry
 h-aráü l-úma ába surúsiya.
 P3PL-child P3M-with one doctor
 ‘All people want their daughter to marry a doctor.’
- d. Guwá n-umu-tu **sún-gubei**.
 drink P1SG-AUX.TR.NFUT-T3F all-CONCL
 ‘I drank all of it.’

Súngubei consists of *sún* and conclusive *gubei*, which functions not only as a negative polarity item (Section 4.3.2) but also makes constructions with cardinal numbers definite (Section 4.6.1.7).

Some speakers use *sún* to mean ‘whole’, while others use *súngubei*, in sentences like ‘I drank the whole bottle of milk’ or ‘I ate the whole plantain’. Due to the lack of number agreement with inanimate noun phrases, these constructions are often ambiguous, with other potential readings ‘I drank all the bottles of milk’ or ‘I ate all the plantains’.

Sún mútu ‘all people’ (often translated ‘everybody’) is a fixed phrase; *súngubei mútu* is not used. Note that *sún mútu* takes plural agreement.

The uses of *sún* are not purely quantificational. *Sún* also has a broader inclusive meaning, often translated ‘even’.

- (38) a. **Sún** Jéna sándi-tu.
all Jena be.sick-T3F
‘Even Jena is sick.’
- b. **Sún** óunli wéinamuha-yan frése-ti h-éibagu.
all dog be.old-R3PL be.fast-T3M P3PL-run
‘Even old dogs run fast.’

Sún and *súngubei* are also sometimes used to express the distributive ‘each’:

- (39) Ú-ti gárada ha-ún **sún-gubei** wagiya.
give-T2M book P3PL-to all-CONCL 1PL.PRON
‘He gave a book to each of us.’

There are, however, two other ways to express ‘each’: *kára ába* (from Spanish *cada*), and *ábaneina*. Neither one seems to be used as frequently as *sún* and *súngubei*. The uses of *kára ába* are straightforward:

- (40) **Kára ába** h-ádagiya gúndaa-tiyan.²²
each one P3PL-from be.happy-T3PL
‘Each one (of them) is happy.’

While *ábaneina* is sometimes translated as ‘each’, its usage seems to be more restricted. Sometimes it is better translated as ‘one at a time’ (see Section 4.9):

- (41) a. Alíha-tiyan **ába-neina** w-ádagiya dimí
read-T3PL one-DISTR P1PL-from half
sán gárada.
hundred book
‘Each of us read fifty books.’
- b. **Ába-neina** w-ebéleru t-ída múna.
one-DISTR P1PL-enter P3F-in house
‘We entered the house one by one.’

²² This construction is partitive. See Section 4.6.1.6.

Meanwhile, ‘whoever’ is expressed by a relative clause. *Fúnaguwarügu* ‘whoever’ is almost certainly related to *fúna* ‘maybe’²³; it remains unclear how much the inclusion of this word affects the meaning of the sentence, since a similar meaning can be expressed without it:

- (42) a. **Tó** gúndaa-tu ába hamúga t-abínaha.
 3F.PROX be.happy-T3F then should P3F-dance
 ‘Anybody (f.) who is happy should dance.’
 (Lit. ‘She who is happy should dance.’)
- b. **Fúnaguwa-rügü** lé áfaru-tibu hilá-gubei
 whoever-only 3M.PROX hit-T2SG die-CONCL
 l-abéichu ba séidü wéiyaaasu.
 P3M-punish AUX.BA seven time
 ‘Anybody who kills you dead will be spanked seven times.’
 (Genesis 4:15)

4.4.2 A-Quantifiers

The basic universal A-quantifiers in Garifuna, *ságü dán* and *súnwan dán* ‘always, all the time’, are based on the word *dán* ‘time, when’ (from French *temps*). *Súnwan* almost certainly comes from French *souvent*, although it seems to have been reanalyzed as containing *sún*; some speakers say *sún dán*).

- (43) **Súnwan dán** l-afáyeiru-nina.
 always time P3M-pay-N1SG
 ‘He always pays me.’

Similarly, *ságü* ‘all, every’ is only used with units of time: *ságü wéiyu* ‘every day’, *ságü háti* ‘every month’, *ságü wámbaaweyu* ‘every afternoon’, etc.

- (44) Hóu-tina ûdürü **ságü wánderadi**.
 eat-t1sg fish all Friday
 ‘I eat fish every Friday.’

Ságü can also be used alone to mean ‘whenever’ or ‘every time’:

- (45) **Ságü** n-éihi-nibu, gúndaa-tina.
 all P1SG-see-N2SG be.happy-T1SG
 ‘Every time I see you, I am happy.’

²³ This word is listed in The People’s Garifuna Dictionary (Cayetano 1993) as *furumieg-uáriügü*. If the form I have is correct, the most likely derivation is:
fúna -guwa -rügü
 maybe -MID -only

‘Whenever’ can also be expressed by *dán* ‘time, when’, *lé*, or *dán lé* (Taylor 1956b: 149, 1958: 38–39). This ‘whenever’ often has the sense of ‘at the time when’ rather than ‘every time’, but it sometimes has a more universal reading:

- (46) a. Gúndaa-tibu **dán** b-éihi-nina.
 be.happy-T2SG when P2SG-see-N1SG
 ‘You are happy whenever you see me.’
- b. Bûi-tiyan ába chugúlaadi **lé** máma
 take-T3PL one chocolate when NEG
 l-á w-éihi yan.
 P3M-COMP P1PL-see AUX.YAN
 ‘They take a chocolate whenever we are not looking.’

4.5 Proportional Quantification

4.5.1 D-Quantifiers

Most simple proportional quantifiers take the form of possessed nouns, but at least two are noun modifiers (*sarágu* ‘most,’ *besáfu* ‘most’). The two most frequently occurring ones are *-amída* ‘half (of)’²⁴ and *-ibiri* ‘a portion (of), the rest’. Although *-ibiri* is often translated ‘some’, it behaves as definite.

- (47) a. M-agúndaa-tiyan **h-ibiri** óunli,
 NEG-be.happy-T3PL P3PL-portion dog
 gúndaa-tiyan **h-ibiri**.
 be.happy-T3PL P3PL-portion
 ‘Some dogs are not happy, but the rest are happy.’
- b. Hóu n-umu-tu **t-amída** barúru.
 eat P1SG-AUX.TR.NFUT-T3F P3F-half plantain
 ‘I ate half of the plantains.’

There do not appear to be simple ways of saying ‘a third’, ‘a quarter’, and so on.

More complex proportional constructions, including partitives, are discussed in Sections 4.6.1.4 and 4.6.1.6.

4.5.2 A-Quantifiers

It remains unclear to me if there are proportional A-quantifiers in Garifuna. Even ‘half the time’ was difficult for Mr. Lopez and other consultants.

²⁴ Spanish *la mitad* ‘half’ was likely borrowed as *lamída* and then reanalyzed.

- (48) ? Gúndaa-tibu **I-amída** **dán.**
 be.happy-T2SG P3M-half time
 ? ‘You are happy half the time.’

4.6 Morphosyntactically Complex Quantifiers

4.6.1 Complex D-Quantifiers

4.6.1.1 Modified Cardinal Quantifiers

The notions of ‘more’ and ‘less’ are expressed using the prepositions *-óugiya* (with spatial meaning ‘over’) and *-ábugiya* (with spatial meaning ‘under’).²⁵

- (49) a. A<yán>hayan **h-óugiya** séingü gürígiya
 EXST.PROX<I3PL> P3PL-over five person
 yán.
 here
 ‘There are more than five people here.’
- b. **H-óugiya** ya-yan séingü hiyánru-yu
 P3PL-over AUX.YAN-R3PL five woman-PL
 yán.
 here
 ‘More than five women are here.’²⁶
- c. **L-ábugiya** séingü fiyádü l-afáyeiru-nina.²⁷
 P3M-under five dollar P3M-pay-N1SG
 ‘He pays me less than five dollars.’

‘Less than’ can also be expressed using *ní* ‘not even’ (from Spanish *ni*), which often co-occurs with another negative element, although not necessarily so:

²⁵ These are segmentable, most likely as -au -giya; -abu -giya
 -with -from; -behind -from

²⁶ Discussing the syntax of this sentence in any detail is beyond the scope of this paper, but it is parallel to other sentences in which a prepositional phrase serves as a predicate. For example:
 L-uwágu ye-in isíyedu lé dingu be-i éifi.
 P3M-on AUX.YAN-R3M plate 3M.PROX be.blue AUX.BA-R3M bean
 ‘The beans are on a blue plate.’

²⁷ Speakers disagree about whether this sentence is acceptable.

- (50) a. **Ní** gádürü gurígiya úwa-tiyan l-ída abínaha-ni.
 not.even four person NEG.EXST-T3PL P3M-in dance-NMZ
 ‘There weren’t even four people at the party.’
- b. **Ní** biyáma h-ádagiya g-erémuha-dii-tiyan.
 not.even two P3PL-from AFF-sing-POT-T3PL
 ‘Not even two of them can sing.’

‘Almost’ is expressed by *yaráfa –ún* ‘next to, close to’:

- (51) Hóu-tina **yaráfa t-ún** ûrúwa barúru.
 eat-T1SG close P3F-to three plantain
 ‘I ate almost (close to) three plantains.’

Kéibüri ‘about’ is related to *kéi* ‘like, as’ (Taylor 1956b: 146). Like *–óugiya*, *–ábugiya*, and *yaráfa –ún*, *kéibüri* appears before the quantifier it modifies. Unlike these others, it is invariant.

- (52) A<yán>hein **kéibüri** séingü óunli l-ídan bürû
 EXST.DIST<I3PL> about five dog P3M-in yard
 líra.
 3M.DIST
 ‘There are about five dogs in that yard.’

4.6.1.2 Modified Value Judgment Quantifiers

The value judgment quantifiers described in Section 4.3.1.2 appear not to afford significant modification. One possible exception may be the relationship between *gibe-* and *gibeya-*, although **mibeya-* is not a word.

4.6.1.3 Exception Modifiers

Exception is expressed using the preposition *–uwéidigiya* ‘except’.

- (53) a. Sún leskuélana sándi-tiyan **t-uwéidigiya**
 all student be.sick-T3PL P3F-except
 Háli.
 Holly
 ‘Every student but Holly is sick.’
- b. Yündü-tiyan sún leskuélana leskuéla
 go-T3PL all student school
h-awéidigiya biyáma.
 P3PL-except two
 ‘All but two students went to class.’

- c. Sarágu óunli éibagua-tiyan **h-awéidigiya** há
 lots dog run-T3PL P3PL-except 3PL.PROX
 magúwali ba-yan.
 be.lazy AUX.BA-R3PL
 ‘Most dogs, except lazy ones, run.’

4.6.1.4 Proportional Quantifiers

Modified proportional quantifiers look similar to modified cardinal quantifiers. Compare the following examples with those in Section 4.6.1.1:

- (54) a. Hóu-tina **l-óugiya** l-amída údürü.
 eat-T1SG P3M-more P3M-half fish
 ‘I ate more than half the fish.’
- b. Hóu-tina **yaráfa l-ún** l-amída údürü.
 eat-T1SG close P3M-to P3M-half fish
 ‘I ate almost (close to) half the fish.’

Another subset of complex proportional quantifiers requires the use of partitive constructions (see also Section 4.6.1.6). To make generalizations like ‘X out of every Y’ requires the use of a preposition, *-ídagiya* ‘from, out of’ or *-agánaguwa* ‘among’. As in English, both ‘one student in ten’ and ‘one in ten students’ are acceptable.

- (55) a. **Néfu** **h-ádagiya** **dísi** Garínagu Kotólíka.
 nine P3PL-from ten Garifuna.PL Catholic
 ‘Nine out of ten Garifunas are Catholic.’
- b. **Ába-gü** **ye-in** leskuélana
 one-only AUX.YAN-R3M student
h-agánaguwa **dísi** subúsi-ti óunabügülei
 P3PL-among ten know-T3M answer
 l-ún.
 P3M-to
 ‘Only one student in ten knows the answer.’²⁸
- c. **Ní** **ába** **h-ádagiya** **dísi** leskuélana
 not.even one P3PL-from ten student
 subúsi-ti óunabügülei hó-un.
 know-T3M answer P3PL-to
 ‘Not one student in ten knows the answer.’

²⁸ This example contains an oblique subject construction. See Munro (2007).

- d. **Ní** **ûrûwa** leskuélana **h-agánaguwa** dísi
 not.even three student P3PL-among ten
 yûndû-tiyan leskuéla.
 go-T3PL school
 ‘Not even three students in ten went to school.’

These constructions appear fully productive.

4.6.1.5 Boolean Compounds

Compounds like ‘not all’ are expressed with negative *máma* preceding the quantifier:

- (56) **Máma sún** óunli éibagua-tiyan.
 NEG all dog run-T3PL
 ‘Not all dogs run.’
 (Lit. ‘It’s not all dogs who run.’)

This example sentence is compatible with a situation where some dogs do run. Other Boolean compounds also use *máma*:

- (57) a. **Chú-ti** ha-ún **báandi** leskuélana, **máma**
 be.smart-T3M P3PL-to a.lot student NEG
sún-gubei **hagiya.**
 all-CONCL 3PL.PRON
 ‘Most but not all students are smart.’
 (Lit. ‘A lot of students are smart, but they’re not all of them.’)
- b. **Ariha-tina** óunli péro **máma** **sarágu.**
 see-T1SG dog but NEG lots
 ‘I saw just a few dogs.’
 (Lit. ‘I saw dogs but they weren’t a lot.’)

In all of these cases, Boolean connectives do not combine QNPs; instead, a second (elliptical) clause is added. These clauses are copular sentences, which take the form N N and are negated with *máma* (Munro and Gallagher in press).

4.6.1.6 Partitive Constructions

The preposition *-idagiya* ‘from, out of’ is used in partitive constructions²⁹; *-idagiya* takes an agreement prefix that agrees in person and number with the thing being quantified. These constructions indicate that the sentence refers to

²⁹ Although I have glossed *-idagiya* as a single morpheme to avoid confusion, it is actually a complex preposition (Rodríguez, ms):
 -ida -giya
 -in -from

some, but not all of, the thing being quantified. When used without another quantifier, this type of construction can best be glossed ‘some of.’

- (58) Hóu-tina **l-ídagiya** sùgara.
 eat-T1SG P3M-from sugar
 ‘I eat some of the sugar.’

Partitive subjects must always take third person subject agreement on the verb, even when they appear to be in the first or second person; they do, however, agree in number and gender. In sentence (59a), *lídagiya* is third person singular masculine, as is the verb, agreeing with *báalu*, which as an inanimate cannot be plural (and thus shows gender agreement). Sentence (59b) shows the same pattern with a feminine subject:

- (59) a. Brídubi-**ti** l-idagiya báalu.
 be.beautiful-T3M P3M-from ball
 ‘Some of the balls are beautiful.’
 b. Brí-**tu** t-ídagiya barúru.
 be.good-T3F P3F-from plantain
 ‘Some of the plantains are good.’

In sentence (60a), although *wádagiya* ‘some of us’ shows first person plural agreement, the verb is in the third person plural. *Wádagiya* ‘some of us’, cannot appear with a first person verb, nor can *hídagiya* ‘some of y’all’ appear with a second person verb.³⁰

- (60) a. Éibagua-**tiyan** **wá-dagiya**.
 run-T3PL P1PL-from
 ‘Some of us ran.’
 b. *Éibagua-**tuwa** **wá-dagiya**.
 run-T1PL P1PL-from
 ‘Some of us ran.’ (intended)

³⁰ There are at least three ways to explain this construction. Either a. ‘prepositions’ are actually ‘a preposition-like word with a person-marker prefix (morphologically a noun)’ (Taylor 1956a: 6), but nouns that are unspecified for gender and number, and so these raise from the possessor; b. ‘prepositions’ are true prepositions (Munro 2007), but since verbs need to agree with their subjects, subject prepositional phrases take their number and gender from their objects; or c. verbs only agree for gender and number but not person in order to constructionally indicate, e.g., the indeterminate nature of ‘some of us’ with regard to person since the speaker may or may not be included in the referent. All of these explanations have some truly odd consequences. For the moment, I remain agnostic.

One additional characteristic of partitives is that they can trigger verbal agreement for semantic gender. As noted earlier, only third person singulars agree in gender; Siewierska notes that ‘gender oppositions are characteristic of third rather than first or second person’ (2004: 107). However, partitive constructions, even those with first and second person referents, do agree in gender. As in many languages, the masculine gender is used as the default, and so sentence (61a) has a general meaning, while (61b) can only be used if the speaker is reasonably certain that the person is female.

- (61) a. Éibagua-**tí** ába wá-dagiya.
 run-T3M one P1PL-from
 ‘One (m.) of us ran.’
- b. Éibagua-**tu** ába wá-dagiya.
 run-T3F one P1PL-from
 ‘One (f.) of us ran.’

Interestingly, *nídagiya* ‘part of me’ and *bídagiya* ‘part of you’ always trigger masculine agreement, even when the person in question is female. Neither ‘I’ nor ‘you’ specifies gender, and body parts do not have social gender (although the words for them may have grammatical gender). In other words, from a semantic point of view, it is logical that these take (default) masculine agreement.

- (62) a. Sarágu **n-ídagiya** l-ábugei³¹ **ye-in**
 lots P1SG-from P3M-under AUX.YAN-R3M
 dúna.
 water
 ‘Most of me is underwater.’
- b. Sarágu **t-ídagiya** múna l-ábugei
 lots P3F-from house P3M-under
 yo-un dúna.
 AUX.YAN-R3F water
 ‘Most of the house is underwater.’

In sentence (62b), the auxiliary agrees with (*tídagiya*) *múna*, which is feminine; the auxiliary in sentence (62a) must always be masculine. Similarly, *tídagiya Háli* ‘most of Holly’ also takes masculine agreement on a verb in a sentence like (62a).

³¹ *Lábugei* is almost certainly a phonological variant of *lábugiya*.

Note that (65c) has exclusively partitive meaning. That is, this sentence can only be used when there are more than three dogs.

In positions other than subject or object, the agreement facts are comparable. For example, when a partitive is the object of a preposition, the preposition takes third-person agreement.

- (66) Ú-ti gárada **hó**-un wá-dagiya.
 give-T3M book P3PL-to P1PL-from
 ‘He gave books to some of us.’

4.6.1.7 Conclusive Constructions

Taylor (1952: 165) describes the morpheme *gubei* as ‘conclusive’. It functions (a) as a negative polarity item with meaning similar to English ‘ever’ or ‘at all’ (see Section 4.3.2), and (b) in conclusive (totality) constructions.³²

- (67) a. Éiha-tina ûrüwa há-dagiya óunli.
 see-T1SG three P3PL-from dog
 ‘I saw three of the dogs.’
 b. Éiha n-umu-tiyan ûrüwa-**gubei** hagiya.
 see P1SG-AUX.TR.NFUT-T3PL three-CONCL 3PL.PRON
 ‘I saw the three (of them).’

As discussed above, sentence (67a) does not show object agreement on the verb. However, sentence (67b) contains the transitive auxiliary *-umu-* and third person plural object marking. A sentence like (67a) can only be used in a context where the total number of dogs is more than three; (67b) can only be used where the total number is exactly three. In other words, the partitive construction typically does not trigger object agreement on the verb, while the conclusive construction does. Furthermore, the partitive construction does not agree for person, while the conclusive construction does. Compare:

- (68) a. Éibagua-**tiyan** ûrüwa h-ídagiya.
 run-T3PL three P2PL-from
 ‘Three of you ran.’
 b. Éibagua-**türü** ûrüwa-gubei hugúya.
 run-T2PL three-CONCL 2PL.PRON
 ‘All three of you ran.’

³² It may also be used as an A-quantifier meaning ‘completely’, as suggested tantalizingly by Taylor (1952: 165); the only example I have seen of this usage is in example (42b) of this paper.

The verb in sentence (68a) takes third person plural object agreement, while the verb in (68b) takes second person plural object agreement. This fact suggests that the subject of (68a) is indeterminate for person while the subject of (68b) is headed by *hugúya* ‘y’all’. Sentence (68a) can only be used in a context where ‘you’ includes at least four people; sentence (68b) can only be spoken when there are exactly three of ‘you’. That the partitive construction patterns like an indefinite noun phrase in certain positions, and that the conclusive construction patterns like a definite noun phrase, follows classical notions of definite- and indefiniteness. We can paraphrase sentence (68a) as ‘Some three of you ran’, and (68b) as ‘The three of you ran’.

4.6.2 Complex A-Quantifiers

4.6.2.1 Cardinal Quantifiers

Cardinal quantifiers are modifiable:

- (69) a. Hóu-ti séngü wéikaasu l-uwágu wéiyu l-ída
 eat-T3M five time P3M-on day P3M-in
 ába dimáansu.
 one week
 ‘He ate five times a day for a week.’
- b. Hóu-ti Johnü ûrüwa barúru biyáma wéikaasu
 eat-T3M John three plantain two time
 l-uwágu wéiyu séngü wéiyu l-ída dimáansu.
 P3M-on day five day P3M-in week
 ‘John eats three plantains twice a day, five days a week.’
- c. Hóu-tina ûrüwa wéikaasu, ságü wéiyu.
 eat-T1SG three time all day
 ‘I eat three times a day, every day.’
- d. Hóu-tina séidü wéikaasu l-úwagu wéiyu,
 eat-T1S seven time P3M-on day
 l-úwagu ába dán.
 P3M-on one time
 ‘I ate seven times a day once.’

4.6.2.2 Boolean Compounds

Like with D-quantifiers, Boolean compounds of A-quantifiers are not attested. Expression of corresponding meanings requires adding an extra clause:

- (70) a. **Sarágu weíkaasu** t-abúdaha Háli l-uwágu
 lots time P3F-vote Holly P3M-on
 ába wügûri, **máma yan** **súnwan dán.**
 one man NEG AUX.YAN always time
 ‘Most of the time Holly has voted for a man, but not always.’
 (Lit. ‘Most times Holly has voted for a man, but it’s not always.’)
- b. **Súnwan dán** n-árügüdü-nu bóguwatu péro
 always time P1SG-take-N3F bus but
súnwan dán n-éibugu.
 always time P1SG-walk
 ‘I often take the bus, but usually I walk.’

4.7 Comparative Quantifiers

In ordinary comparatives, Garifuna expresses the concept of ‘more than’ in many cases using *-uwéi* ‘more than’, which typically occurs with another quantifying element, often *-tuma* ‘more’.

- (71) a. **Hóu-tuma**-tina b-uwéi.
 eat-more-T1SG P2SG-than
 ‘I eat more than you.’
- b. **Lóguwa-ti** n-éigi **b-uwéi.**
 NEG.be.enough-T3M P1SG-eat P2SG-than
 ‘I eat less than you.’
- c. **Frése-tuma**-ti t-éibagu Háli **l-uwéi**
 be.fast-more-T3M P3F-run Holly P3M-than
 l-éigi Gátsby.
 P3M-eat Gatsby
 ‘Holly runs faster than Gatsby eats.’
- d. **Hínsie-tiyan** mésu n-ún **h-awéi** óunli.
 love-T3PL cat P1SG-to P3PL-than dog
 ‘I love cats more than dogs.’

A similar construction is used for comparative quantifiers. A quantifier precedes the first noun, while the second quantifying element precedes the second noun, which occurs sentence-finally. These comparative constructions do not form a constituent; when they are focused (72b), only the first quantifier-noun pair moves, and other arguments can appear between the first quantifier-noun pair and the second (73c).

- (72) a. **G-íbe-tiyan** hiyánru-yu **h-awéi** wügûri-yan.
 AFF-be.much-T3PL woman-PL P3PL-than man-PL
 ‘There are more women than men.’
 (Lit. ‘There are a lot of women, more than men.’)
- b. **Sarágu** leskuélana gúndaa-tiyan **h-awéi**
 lots student be.happy-T3PL P3PL-than
 méisturu.
 teacher
 ‘More students than teachers are happy.’
 (Lit. ‘A lot of students are happy, more than teachers.’)

These constructions can also use *-óugiya* ‘more than’ and *kéigubeigü* ‘as many as, just like’, but the argument structure is the same:

- (73) a. **Éiha-tina** **sarágu** wûri-yan **h-óugiya**
 see-T1SG lots woman-PL P3PL-more
 wügûri-yan.
 man-PL
 ‘I saw many more women than men.’
 (Lit. ‘I saw a lot of women, more than men.’)
- b. **Abúduha-tiyan** **sarágu** wügûri-yan **kéi-gubei-gü**
 vote-T3PL lots man-PL as-CONCL-only
 wûri-yan.
 woman-PL
 ‘As many men as women voted.’
 (Lit. ‘A lot of men voted, just like the women.’)
- c. **A<yán>hein** **h-óugiya** **sísi** wügûri-yan
 EXST.PROX<I3PL> P3PL-more six man-PL
 t-ída leskuéla h-óugiya wûri-yan.
 P3F-in school P3PL-more woman-PL
 ‘More than six more men than women are in the class.’
 (Lit. ‘More than six men are in the class more than women.’)

4.8 Type (2) Quantifiers

Garifuna has at least two words meaning ‘other’ or ‘another’, *ábayan* (probably *ába* ‘one’ and a plural morpheme), and *ámu*. *Ábayan* may mean ‘another’ or ‘the other’ in the sense of ‘one more’, while *ámu* may mean ‘another’ in the sense of ‘different’ (Taylor 1952: 143). This claim is supported by the following examples:

- (74) a. *Éiha-tina ába-yan óunli.*
 see-T1SG one-PL dog
 ‘I saw another dog.’
- b. *Éiha n-umu-ti lé ámu*
 see P1SG-AUX.TR.NFUT-T3M 3M.PROX other
óunli.
 dog
 ‘I saw the other dog.’

Additionally, while *ámu* sometimes appears to operate as a binary quantifier, *ábayan* does not.

- (75) *Ámu éigi-ni h-éigi be-i ámu gurígiya.*
 other eat-NMZ P3PL-eat AUX.BA-R3M other person
 ‘Different people eat different food.’

The predicate *ámiyaguenügü* ‘be different’³³ is also often used:

- (76) a. *Sún leskuélana amíyaguenügü erému lé*
 all student be.different song 3M.PROX
h-erému há be-i.
 P3PL-SING 3PL.PROX AUX.BA-R3M
 ‘All the students sang different songs.’
 (Lit. ‘As for all the students, the songs they sang were different.’)
- b. *Ámíyaguenügü l-ikálaa h-ádiburu*
 be.different P3M-color P3PL-hair
n-agûbüri-gu.
 P1SG-parent-COLL
 ‘My parents have different color hair.’
 (Lit. ‘My parents’ hair colors are different.’)
- c. *Ámíyaguenügü ubúru yéin l-ube-i*
 be.different city there P3M-AUX.BA-R3M
h-agánawa n-íbugayan t-úma
 P3PL-live P1SG-older.brother P3F-with
l-úmari amáreda.
 P3M-wife married
 ‘My brother and his wife live in different cities.’

³³ Pamela Munro (personal communication) suggests that this word has some sort of distributive meaning.

- d. Sún n-íbugayan-gu ámiyaguenügü ubúrugú
 all P1SG-older.brother-COLL be.different city
 yéin l-ubéi h-agánawa.
 there P3M-where P3PL-live
 ‘All my brothers live in different cities.’

However, ‘the same’ is typically expressed using *ába* ‘one’:

- (77) Dún-tiyan sún wúri-yan ába kaláru.³⁴
 wear-T3PL all woman-PL one color
 ‘All of the women wore the same color.’
 ‘All of the women wore one color.’

- (78) Sún mútu hóu-tiyan ámiyagueina éigi-ni,
 all person eat-T3PL be.different eat-NMZ
 úwa-tiyan éigi-tiyan ába l-uwíyei.
 NEG.EXST-T3PL eat-T3PL one P3M-type
 ‘Everyone ate two dishes, but nobody ate the same thing.’

Multiple *wh*-questions seem not to be possible. Two different Garifuna speakers volunteered the following possibilities for ‘Who danced with whom?’, neither of which actually contains multiple *wh*- words:

- (79) a. Ká sá abínaha ba-yan h-áma-guwa?
 what Q dance AUX.BA-R3PL P3PL-with-MID?
 ‘Who danced with who?’
 (Lit. ‘Who danced with each other?’)
- b. Káte-yan sán abínaha ba-yan yágüta
 what-R3PL Q dance AUX.BA-R3PL yonder
 t-ídan abínaha-gu lé?
 P3F-in dance-LOC 3M.PROX
 ‘Who were dancing in the hall?’

4.9 Distributive Numerals and Binomial ‘Each’

Garifuna is capable of making a clear distinction between distributive and collective readings:

³⁴ As in English, Mr. Lopez recognizes that this sentence is potentially ambiguous. However, he finds this the most natural way of expressing ‘the same’.

- (80) a. Alíha-tiyan méisturu-gu dimí sán gárada.
 read-T3PL teacher-COLL half hundred book
 ‘The teachers read fifty books.’
- b. Alíha-tiyan **ába-neina** méisturu-gu dimí
 read-T3PL one-DISTR teacher-COLL half
 sán gárada.
 hundred book
 ‘The teachers read fifty books each.’
- c. Alíha-tiyan méisturu-gu dimí sán gárada
 read-T3PL teacher-COLL half hundred book
h-agánaguwa.
 P3PL-among
 ‘The teachers read fifty books between them.’

Ábaneina ‘each’, described in Section 4.4.1, typically has a distributive meaning:

- (81) a. Hóu-tiyan **ába-neina** h-ádagiya ába
 eat-T3PL one-DISTR P3PL-from one
 barúru.
 plantain
 ‘Each of them ate one plantain.’
- b. **Ába-neina** wagíya adímaha-tuwa biyáma
 one-DISTR 1PL.PRON speak-T1PL two
 násiyün.
 language
 ‘Each of us speaks two languages.’
- c. **Ába-neina** w-ebéleru t-ída múna.
 one-DISTR P1PL-enter P3F-in house
 ‘We entered the house one by one.’

While *ábaneina* is the most commonly used word with the distributive suffix *-neina*, it can also combine with other numerals. Mr. Lopez is most comfortable using this morpheme with the numbers one through three, and told me on one occasion that it stops making sense at all past about five.

- (82) Sún mútu alíha-tiyan **ûrúwa-neina** gárada.
 all person read-T3PL three-DISTR book
 ‘All the people read three books each.’

- (83) Alíha-tiyan sún mútu **biyáma-neina** gárada,
 read-T3PL all person two-DISTR book
ámu-neina gárada h-alíha.
 different-DISTR book P3PL-read
 ‘Everyone read two books, but all the books were different.’

However, this morpheme may not be able to be used in all distributive contexts; it seems not to afford a paired meaning. While Mr. Lopez sometimes suggested this kind of paired reading, he was not certain that these sentences were fully logical.

- (84) ? **Ába-neina** iyénri ábinaha-ti t-úma
 one-DISTR man dance-T3M P3F-with
ába-neina hiyánru.
 one-DISTR woman
 ? ‘Each man danced with each woman.’

Kára (*ába*) ‘each’ can also be used in these contexts:

- (85) a. **Kára** wügûri abínaha-ti h-áma **sún**
 each man dance-T3M P3PL-with all
 wûri-yan.
 woman-PL
 ‘Each man danced with all the women.’
- b. **Kára** wügûri abínaha-ti t-úma **kára** wûri.
 each man dance-T3M P3F-with each woman
 ‘Each man danced with each woman.’

There are cases where *kára* can be used with distributive *-neina*; I have heard this word uttered spontaneously exactly once:

- (86) A<yán>heiyán **kára-neina** gurígiya hó-un
 EXST.DIST<I3PL> each-DISTR person P3PL-to
 sún mútu.
 all person
 ‘There’s someone for everyone.’

However, a better way—perhaps the most natural way—to express paired meanings is with universal quantifiers. Instead of ‘Each man loves his wife’ or ‘Every man loves his wife’, Mr. Lopez prefers ‘All men love their wives’:

- (87) **Sún** wügûri-yan hínse-tu³⁵ h-ámari hó-un.
 all man-PL love-T3F P3PL-wife P3PL-to
 ‘All men love their wives.’

There are at least three other ways to express concepts like ‘NUMBER by NUMBER’. One can use the preposition *-ída* ‘in’, which may be a calque from English; one can also use *-guwa* with a numeral (Suazo 1991: 80–81); and one may use reduplication.³⁶

- (88) a. **L-ída úrüwa** h-éibagu-wa.
 P3M-in three P3PL-walk-MID
 ‘They ran in threes.’
- b. **Úrüwa-guwa** ya-duwa.
 three-MID AUX.YAN-D1PL
 ‘There are three of us.’
- c. Belú-tiyan sún ánimaalu-gu hagiya
 enter-T3PL all animal-COLL 3PL.PRON
 l-úma Nowá **biyán biyán**.
 P3M-with Noah two two
 ‘All the animals got in with Noah, two (by) two.’ (Genesis 7.15)

4.10 Mass Quantifiers and Noun Classifiers

A few count quantifiers can also be used with mass nouns, including *sún* (*gubei*) ‘all, every’, and *báandi* ‘a lot’. *Féru* ‘a pair’, *sarágu* ‘a lot, lots, most’, and cardinal numbers cannot be used directly with mass nouns.

- (89) a. Hóu n-umu-ti **sún-(gubei)** sùgara.
 eat P1SG-AUX.TR.NFUT-T3M all-(CONCL) sugar
 ‘I ate all the sugar.’
- b. Hóu-tina **báandi** sùgara.
 eat-T1SG a.lot sugar
 ‘I ate a lot of sugar.’

³⁵ This verb takes an oblique subject. See Munro (2007) for more discussion.

³⁶ Suazo (1991: 81) also lists *gauba gauba*, meaning something like ‘to walk in pairs’; I have never heard this form.

Another quantifier that occurs in invariant form immediately before what is quantified is *murúsu* ‘a little, a piece’. *Murúsu* is only used with mass nouns; it can also be used with nouns we ordinarily think of as count nouns, but only when they are used in a mass sense, as in (90b).

- (90) a. A<ní>hein **murúsu** sùgara l-ída éigi-ní.
 EXST.DIST<I3M> a.little sugar P3M-in eat-NMZ
 ‘There is a little sugar in the food.’
- b. Hóu-tina **murúsu** barúru.
 eat-T1SG a.little plantain
 ‘I ate a piece of plantain.’

Murúsu behaves differently from many other quantifiers, as it can be used in both indefinite (91a) and definite (91b) noun phrases, co-occur with numerals and other quantifiers (91c, 91d), and be otherwise modified (91e).

- (91) a. Hóu-tina **murúsu** ûdürü.
 eat-T1SG a.little fish
 ‘I ate a little fish.’ (This does *not* mean ‘I ate a small fish.’)
- b. Hóu n-umu-tu **murúsu** féin.
 eat P1SG-AUX.TR.NFUT-T3F a.little bread
 ‘I ate the piece of bread.’
- c. Hóu-tina **séingü** **murúsu** féin.
 eat-T1SG five a.little bread
 ‘I ate five pieces of bread.’
- d. Hóu n-umu-tu **sún** **murúsu** féin.
 eat P1SG-AUX.TR.NFUT-T3F all a.little bread
 ‘I ate all the pieces of bread.’
- e. Busíye-tina **ába** **wéi-ti** **murúsu** fuláanso.
 want-T1SG one be.big-T3M a.little lumber
 ‘I want a big piece of lumber.’

However, since *murúsu* takes the form of a modifier rather than a possessed noun, it does not appear to be a classifier. For the most part, Garifuna only uses classifiers in a number of possessive constructions. Some of these classifiers, like *úwi* ‘meat’, are commonly used nouns in their own right; others, like *ilügü* ‘pet’, are almost never used except as classifiers. Since these forms only appear in possessive constructions, the classifiers are prefixable and agree with the possessor.

- (92) a. Hóu n-a n-úwi ùdürü.
eat P1SG-AUX.A P1SG-CLF.meat fish
'I ate my fish.'
- b. Busíye-ti sùgara l-ída l-uniya tii.
want-T3M sugar P3M-in P3M-CLF.drink tea
'He prefers sugar in his tea.'
- c. Hóu n-a n-éiga barúru.
eat P1SG-AUX.A P1SG-CLF.food plantain
'I ate my plantain.'
- d. Éibagua-ti l-ilúgü óunli.
run-T3M P3M-CLF.pet dog
'His dog runs.'

That *múrusu* is not such a classifier is illustrated by the following example, in which it co-occurs with one:

- (93) Ká sá wágu b-éigo-u murúsu n-éiga
what q why P2SG-eat-R3F a.little P1SG-CLF.food
kéki?
cake
'Why did you eat my piece of cake?'

Mass nouns are typically quantified using container and measure phrases rather than classifiers. Container phrases take the form of modifiers; that is, although they are nouns, they appear before the quantified noun in an invariant form rather than in possessed form:

- (94) a. Agányan-tina ába budéin sénte.
buy-T1SG one bottle perfume
'I bought a bottle of perfume.'
- b. Guwá-tina ába gáfu míligi.
drink-T1SG one box milk
'I drank a carton of milk.'

Furthermore, for some speakers (although not all), the gender of what is quantified raises and overrides the gender the container usually has as a noun. *Budéin* 'bottle' is masculine when used on its own; *gáfu* 'box' is feminine. However, since *míligi* 'milk' is masculine, while *duwéin* 'wine', is feminine, both 'a bottle of milk' and 'a carton of milk' take masculine agreement, while both 'a box of wine' and 'a bottle of wine' take feminine agreement:

- (95) a. Guwá n-umu-ti sún-gubei gáfu
 drink P1SG-AUX.TR.NFUT-T3M all-CONCL box
 míligi.
 milk
 ‘I drank the whole carton of milk.’
- b. Agáiha n-umu-tu gáfu duwéin.
 buy P1SG-AUX.TR.NFUT-T3F box wine
 ‘I bought the box of wine.’
- (96) a. Guwá n-umu-ti sún budéin míligi.
 drink P1SG-AUX.TR.NFUT-T3M all bottle milk
 ‘I drank the whole bottle of milk.’
- b. Átiri yo-un budéin duwéin l-átu?
 how.many AUX.YAN-R3F bottle wine P3M-drink
 ‘How many bottles of wine did he drink?’

The gender raising can occur even when the quantified noun is not overtly specified. In the context of a discussion of wine, a question like ‘How many bottles?’ will often show feminine agreement.

Íburu ‘pound’, takes a different form than the container phrases described above. Instead of an invariant modifier, *íburu* behaves like a possessed noun. Most likely, *íburu* was borrowed as *liburu* (from either Spanish *libra* or French *livre*) and reanalyzed later, since *l-* is a third person masculine prefix. This may account for the difference in form.

- (97) Hóu-tina séingü **t-íburu** barúru.
 eat-T1SG five P3F-pound plantain
 ‘I ate five pounds of plantains.’

There is a particular quirk of *íburu*. Although it agrees with what is quantified for gender, it is treated as an inanimate and does not agree for number. Example (98b) is simply not an acceptable Garifuna sentence, even if the fishes in question are very, very, small.³⁷

³⁷ Person agreement is difficult to test for:

Hínsiye-ti ába sán íburu lé b-uwágu be-i n-ú.
 like-T3M one hundred pound 3M.PROX P2SG-ON AUX.BA-R3M P1SG-to
 ‘I love all one hundred pounds of you.’
 (Lit. ‘I love all one hundred pounds on you.’)

Unfortunately, ‘all one hundred pounds of you’ is not idiomatically parallel to a construction like ‘one hundred pounds of fish’. Instead, ‘all one hundred pounds of you’ is, literally, ‘one

- (98) a. Yagû-tina ába **l-íburu** ûdürü.
 catch-T1SG one P3M-pound fish
 ‘I caught a pound of fish.’
- b. * Yagû-tina ába **h-íburu** ûdürü.
 catch-T1SG one P3PL-pound fish
 ‘I caught a pound of fishes.’ (intended)

Kuópu ‘cup’ is indeterminate in Garifuna, as it English: it may refer either to a container (99a) or a measure (99b). For both of these meanings, it takes the form of an invariant modifier before the noun.

- (99) a. Guwá-tina ába **kuópu** duwéin.
 drink-T1SG one cup wine
 ‘I had a glass of wine.’
- b. Mégei bo-u kéki biyán **kuópu** sùgara.
 need AUX.BA-R3F cake two cup sugar
 ‘The cake will need two cups of sugar.’

Like other indefinite noun phrases in object position, container and measure phrases almost always require the use of *ába* ‘one’ in the singular:

- (100) a. Agáiha-tina **ába** l-íburu hérüwa.
 buy-T1SG one P3M-pound worm
 ‘I bought a pound of worms.’
- b. * Agáiha-tina l-íburu hérüwa.
 buy-T1SG P3M-pound worm
 ‘I bought a pound of worms.’ (intended)

4.10.1 *Count Quantifiers and Mass Nouns*

Some count quantifiers can combine with certain mass nouns. As in English, ‘a beer’ can mean ‘a (bottle/glass/can) of beer’:

- (101) Busíye-tina ába serbésa.
 want-T1SG one beer
 ‘I want a beer.’

hundred pounds (that you have) on you’, meaning something akin to ‘one hundred pounds that you weigh’.

Several nouns that have mass readings in English have more common count readings in Garifuna.

- (102) a. Hóu-tina séingü awási.³⁸
 eat-T1SG five corn
 ‘I ate five (ears of) corn.’
- b. Agáiha-tina ába sábu.
 buy-T1SG one soap
 ‘I bought a (bar of) soap.’
- c. Busé-tina ûrüwa fúrumaasu.
 want-T1SG three cheese
 ‘I want three (pieces of) cheese.’

4.11 Existential Constructions

All of the predicate quantifiers, including the value judgment quantifiers described in Section 4.3.1.2 and *úwa-* ‘be none’ (described in Section 4.3.1.3), have an existential meaning. However, they are not typically used with existential predicates. Other quantifiers can also be used in existential constructions, with a locative existential predicate:

- (103) a. A<yán>hayan séingü óunli.
 EXST.PROX<I3PL> five dog
 ‘There are five dogs.’
- b. A<yán>hein báandi óunli t-ída múna.
 EXST.DIST<I3PL> a.lot dog P3F-in house
 ‘There’s a lot of dogs in the house.’

4.11.1 Definiteness Effect

In Garifuna, acceptable pivots include both indefinite (104, 105) and definite (106 through 112) quantifiers, as well as predicate quantifiers (113, 114). These last can be used both with and without the existential predicate.

- (104) Má sá a<yán>hein **báandi** wügûri-yan
 NEG Q EXST.DIST<I3PL> a.lot man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) a lot of men in the army?’

³⁸ *Awási* may mean ‘ear of corn’ rather than simply ‘corn’, although the proverb *Móungirauti gáyu awási*, ‘A chicken will not take care of corn’, suggests that a mass reading is possible.

- (105) Má sá a<yán>hein **ába** **sán** wügûri-yan
 NEG Q EXST.DIST<I3PL> one hundred man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) a hundred men in the army?’
- (106) Má sá a<yán>hein **sarágu** wügûri-yan l-ída
 NEG Q EXST.DIST<I3PL> lots man-PL P3M-in
 asúdaraha-ni?
 be.soldier-NMZ
 ‘Aren’t (there) most men in the army?’
- (107) Má sá a<yán>hein **besáfu** wügûri-yan l-ída
 NEG Q EXST.DIST<I3PL> most man-PL P3M-in
 asúdaraha-ni?
 be.soldier-NMZ
 ‘Aren’t (there) most men in the army?’
- (108) Má sá a<yán>hein **sún** wügûri-yan l-ída
 NEG Q EXST.DIST<I3PL> all man-PL P3M-in
 asúdaraha-ni?
 be.soldier-NMZ
 ‘Aren’t (there) all men in the army?’
- (109) Má sá a<yán>hein **sún-gubei** wügûri-yan
 NEG Q EXST.DIST<I3PL> all-CONCL man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) all men in the army?’
- (110) Má sá a<yán>hein **ûrüwa-gubei** wügûri-yan
 NEG Q EXST.DIST<I3PL> three-CONCL man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) all three men in the army?’
- (111) Má sá a<yán>hein **h-íbiri** wügûri-yan
 NEG Q EXST.DIST<I3PL> P3PL-portion man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) the rest of the men in the army?’

- (112) Má sá a<yán>hein **h-amída** wügûri-yan
 NEG Q EXST.DIST<I3PL> P3PL-half man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) half of the men in the army?’
- (113) Má sá a<yán>hein **brídügü-tiyan** wügûri-yan
 NEG Q EXST.DIST<I3PL> be.enough-T3PL man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) enough men in the army?’
- (114) Má sá a<yán>hein **g-íbe-tiyan** wügûri-yan
 NEG Q EXST.DIST<I3PL> AFF-be.much-T3PL man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) a lot of men in the army?’

However, predicates containing a negative element are **not** acceptable as pivots in sentences with existential verbs:

- (115) a. *Má sá a<yán>hein lóguwa-tiyan
 NEG Q EXST.DIST<I3PL> NEG.be.enough-T3PL
 wügûri-yan l-ída asúdaraha-ni?
 man-PL P3M-in be.soldier-NMZ
 ‘Aren’t (there) not enough men in the army?’ (intended)
- b. Má sá lóguwa-tiyan wügûri-yan
 NEG Q NEG.be.enough-T3PL man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) not enough men in the army?’
- (116) a. *Má sá a<yán>hein m-íbe-tiyan
 NEG Q EXST.DIST<I3PL> NEG-be.much-T3PL
 wügûri-yan l-ída asúdaraha-ni?
 man-PL P3M-in be.soldier-NMZ
 ‘Aren’t (there) few men in the army?’ (intended)
- b. Má sá m-íbe-tiyan wügûri-yan
 NEG Q NEG-be.much-T3PL man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) few men in the army?’

- (117) a. *Má sá a<yán>hein úwa-tiyan wügûri-yan
 NEG Q EXST.DIST<I3PL> NEG.EXST-T3PL man-PL
 l-ída asúdaraha-ni?
 P3M-in be.soldier-NMZ
 ‘Aren’t (there) no men in the army?’ (intended)
- b. Má sá úwa-tiyan wügûri-yan l-ída
 NEG Q NEG.EXST-T3PL man-PL P3M-in
 asúdaraha-ni?
 be.soldier-NMZ
 ‘Aren’t (there) no men in the army?’

4.11.2 Negation in Existentials

Negative existentials are formed with *úwa-*. See Section 4.3.1.3 for discussion.

4.11.3 Existential Constructions and Inalienable Possession

Existential constructions can be used to express both alienable (118a) and inalienable (118b) possession:

- (118) a. A<nú>hein báandi bíména h-úma.
 EXST.DIST<I3F> a.lot banana P3PL-with
 ‘You guys have a lot of bananas.’
- b. A<nú>hein ába n-amúlalua.
 EXST.PROX<I3F> one P1SG-younger.sister
 ‘I have a younger sister.’

4.12 Floating Quantifiers

To the best of my knowledge, Garifuna quantifiers are not able to float.

Although quantifiers do not generally float, they may move in one particular construction: when a possessor is a quantified noun, the quantifier sometimes seems to raise, appearing before the possessed noun rather than the possessor:

- (119) A<nú>hein ába-neina h-ayáwü leskuélana
 EXST.DIST<I3F> one-DISTR P3PL-picture student
 l-uwágu dábula.
 P3M-on table
 ‘A picture of each student is on the table.’

Also acceptable, with the same meaning,³⁹ is:

- (120) A<nú>hein h-ayáwü **ába-neina** leskuélana
 EXST.DIST<I3F> P3PL-picture one-DISTR student
 l-uwágu dábula.
 P3M-on table

4.13 Uses of Bare Quantifiers

4.13.1 Bare Quantifiers as Predicates

Numerals can function as existential predicates with an auxiliary, although most other non-predicate quantifiers are not acceptable in this position. In addition to existential predicates, quantifiers can be verbalized using an auxiliary:

- (121) Séidü ya-yan bágasu.
 seven AUX.YAN-R3PL cow
 ‘There are seven cows.’
 (Lit. ‘The cows are seven.’)

This has a purely existential meaning, without the locative meaning of the existential construction.

To the best of my knowledge, all of the cardinal quantifiers can be used as predicates in this way, but at least some other quantifiers cannot:

- (122) * Báandi ya-yan óunli t-ída múna.
 a.lot AUX.YAN-R3PL dog P3F-in house
 ‘There’s a lot of dogs in the house.’ (intended)
 (Lit. ‘The dogs in the house are many.’)

Neither *báandi* ‘a lot’ nor *sarágu* ‘lots, most’ can be used existentially, even in answering a question like ‘How many dogs are there?’ Instead, the predicate *gibe-* ‘be much, be many’ is used.

³⁹ Alternatively, these may be better translated as ‘Each picture of a student is on the table’ (119) and ‘A picture of each student is on the table’ (120), a difficult distinction to make in most contexts (Pamela Munro, personal communication).

4.13.2 Can Bare Quantifiers Function as Arguments?

The quantifiers that can function as objects appear to be the same ones function as pivots in existential constructions, that is, all types except for negative predicates. Indefinite (123a, d, e, f), definite (123b), and predicate (123f) quantifiers are all acceptable as objects of verbs:

- (123) a. Chípo-tu=büga dúnigu agáiha-tina **séingü.**
 be.cheap-T3F=past dress buy-T1SG five
 ‘The dresses were cheap, so I bought five.’
- b. Chípo-tu=büga dúnigu agáiha
 be.cheap-T3F=past dress buy
 n-umu-tu **sún-gubei.**
 P1SG-AUX.TRANS.NFUT-T3F all-CONCL
 ‘The dresses were cheap, so I bought (them) all.’
- c. ? Chípo-tu=büga dúnigu agáiha
 be.cheap-T3F=past dress buy
 n-umu-tu **sún.**
 P1SG-AUX.TRANS.NFUT-T3F all
 ? ‘The dresses were cheap, so I bought (them) all.’⁴⁰
- d. Chípo-tu dúnigu agáiha-tina **t-amída.**⁴¹
 be.cheap-T3F dress buy-T1SG P3F-half
 ‘The dresses were cheap, so I bought half.’
- e. Chípo-tu dúnigu agáiha-tina **sarágu.**
 be.cheap-T3F dress buy-T1SG lots
 ‘The dresses were cheap, so I bought a lot.’
- f. Chípo-tu dúnigu agáiha-tina **báandi.**
 be.cheap-T3F dress buy-T1SG a.lot
 ‘The dresses were cheap, so I bought a lot.’
- g. Chípo-tu dúnigu agáiha-tina **g-íbe-tu.**
 be.cheap-T3F dress buy-T1SG AFF-be.much-T3F
 ‘The dresses were cheap, so I bought a lot.’

Negative predicates, however, are not acceptable as objects. Instead, the main verb itself must be negated:

⁴⁰ Similar sentences have been judged fully ungrammatical; *súngubei* appears to be more acceptable as a bare quantifier than *sún*.

⁴¹ *-amída* ‘half’ is usually but not always definite. As a bare quantifier, it is often indefinite, but when it modifies a noun, it is definite unless the construction is partitive.

- (124) a. * Chípo-tu dúnigu agáiha-tina **m-ibe-tu.**
 be.cheap-T3F dress buy-T1SG NEG-be.much-T3F
 ‘The dresses were cheap, but I (only) bought a few.’ (intended)
- b. Chípo-tu dúnigu m-agáiyaha-tina g-íbe-tu.
 be.cheap-T3F dress NEG-buy-T1SG AFF-be.much-T3F
 ‘The dresses were cheap, but I only bought a few.’

However, many fewer bare predicates can appear in subject position. Cardinal numbers (125a) can appear as subjects, as can *súngubei* ‘all’ but not *sún* (125b, c; compare 123b, c):

- (125) a. Isé gi-u **ûrúwa.**
 be.new AUX.still-R3F three
 ‘Three are new.’
- b. A<nú>hein báandi durúgu n-úma l-ún
 EXST.DIST<13F> a.lot car P1SG-with P3M-to
 n-alúguwaha. Iséi gi-u **sún-gubei.**
 P1SG-sell be.new AUX.still-R3F all-CONCL
 ‘I have a lot of cars to sell. All are new.’
- c. * Iséi gi-u **sún.**
 be.new AUX.still-R3F all
 ‘All are new.’ (intended)

Bare quantifiers that cannot be the subject of a sentence include *báandi* ‘a lot’, *sarágu* ‘lots, most’, *-amída* ‘half’, *-ibiri* ‘the rest, a portion’. Instead, these must appear in partitive constructions.

- (126) a. * Iséi **báandi.**
 be.new a.lot
 ‘Many are new.’ (intended)
- b. Iséi **báandi t-ídagiya.**⁴²
 be.new a.lot P3F-from
 ‘Many of them are new.’
- (127) a. * Iséi **sarágu.**
 be.new lots
 ‘Most are new.’ (intended)
- b. Iséi **sarágu t-ídagiya.**
 be.new lots P3F-from
 ‘Most of them are new.’

⁴² Feminine agreement in this and following examples comes from the prompt given in (125b); *durúgu* ‘car’ is feminine.

- (128) a. * **Isé** **gi-u** **t-amída.**
 be.new AUX.still-R3F P3F-half
 ‘Half are new.’ (intended)
- b. **Isé** **gi-u** **t-amída t-ídagiya.**
 be.new AUX.still-R3F P3F-half P3F-from
 ‘Half of them are new.’
- (129) a. * **T-íbiri** **iséri.**
 P3F-portion be.new
 ‘Some are new.’ (intended)
- b. **T-íbiri** **t-ídagiya** **iséri.**
 P3F-portion P3F-from be.new
 ‘Some of them are new.’

While predicate quantifiers can appear in similar-looking sentences, it remains unclear if the predicate quantifiers are subjects or the main verb of the sentence. All of these quantifiers can appear equally with or without a partitive subject, as in (130a, b):⁴³

- (130) a. **G-íbe-tu** **iséri.**
 AFF-be.much-T3F be.new
 ‘Too many are new.’
- b. **G-íbe-tu** **t-ídagiya** **iséri.**
 AFF-be.much-T3F P3F-from be.new
 ‘Too many are new.’
- (131) **M-íbe-tu** **iséri.**
 NEG-be.much-T3F be.new
 ‘Only a few are new.’
- (132) **Lóguwa-tu** **iséri.**
 NEG.be.enough-T3F be.new
 ‘Not enough are new.’
- (133) **Úwa-tu** **iséri.**
 NEG.EXST-T3F be.new
 ‘None are new.’

⁴³ The syntactic structure of such sentences, however, is far from clear.

4.14 Relations Between Lexical Universal, Existential, and Interrogative Pronouns

Káta ‘what, who’ is both an interrogative and an inanimate indefinite pronoun:

- (134) a. Déiha-tina káte-i l-áru béyu.
 find-T1SG what-R3M P3M-on beach
 ‘I found something on the beach.’
- b. M-éihi-tina **ni-káta**.⁴⁴
 NEG-see-T1SG not.even-what
 ‘I didn’t see anything.’

Káta can not mean ‘somebody’, nor can *nikáta* mean ‘anybody’, although in the interrogative usage *ká* and *káta* mean both ‘what’ (inanimate) and ‘who’ (animate).

Káta appears to be the only such existential pronoun that is related to an interrogative pronoun. To express the notion of ‘someone’, many Garifuna speakers use *ába gurígiya* or *ába mútu* ‘a person’:

- (135) L-árigiya w-ábunu ába gurígiya ába w-aféiduwa.
 P3M-after P1PL-bury one person then P1PL-party
 ‘After we bury somebody, we party.’

Some speakers use the English borrowing *sánbadii*:

- (136) Aríha-tina sánbadii l-áru béya.
 see-T1SG somebody P3M-on beach
 ‘I saw someone on the beach.’

Other pronouns also appear to be unrelated (see Table 4.3):

Table 4.3 Comparison of pronouns

Interrogative	English WH-word	‘...ever’	Literal translation
<i>ká?</i>	who?	lé, tó, há	he/she/they who
<i>káta?</i>			
<i>heliya?</i>	where?	(yéihe) lubei	(there) where
<i>houga?</i>			
<i>ída?</i>	when?	dán (lé)	the time (that)
		lé	that
<i>ída?</i>	how?	kéi	like, as
<i>ká ... wágu?</i>	why?	--	--

⁴⁴ *Nikáta*, like English ‘anything’, appears to be a negative polarity item. Although *ní* ‘not even’ can appear in subjects, as well as in objects of non-negative verbs, *nikáta* cannot appear as either. See also Section 4.15.

4.15 Decreasing D-Quantifiers

There are at least five ways to form decreasing quantifiers in Garifuna. The negative existential *úwa-* (see Section 4.3.1.3) is used to say ‘no’:

- (137) *Úwa-ti* *bálu* *áfaru-ti* *budéin*.
 NEG.EXST-T3M bullet hit-T3M bottle
 ‘No bullets hit the bottle.’

The negative particle *máma* is used to form quantifiers like ‘not all’ and ‘not many’:

- (138) a. *Máma sún-gubei* *iráhü-yün* *h-éigi yan*.
 NEG all-CONCL child-PL P3PL-eat AUX.YAN
 ‘Not all the children are eating.’
 (Lit. ‘It’s not all the children who are eating.’)
- b. *Máma sarágu gurígiya abúgaha-tiyan* *Ferrári*.
 NEG lots people drive-T3PL Ferrari
 ‘Not many people have driven a Ferrari.’
- c. ? *Máma sarágu óunli éibagu ba-yan*.
 NEG lots dog run AUX.BA-R3PL
 ? ‘Not many dogs run.’

A way to say ‘not many’ that is often more natural is *mibe-*, which is also decreasing:

- (139) *M-íbe-tiyan* *óunli* *éibagua-tiyan*.
 NEG-be.much-T3PL dog run-T3PL
 ‘Not a lot of dogs run.’

Lóguwa- ‘be not enough’ is also decreasing:

- (140) *Lóguwa* *ba-yan* *leskuélana* *yündü-tiyan*
 NEG.be.enough AUX.BA-R3PL student go-T3PL
leskuéla.
 school
 ‘Not enough students will go to school.’

Ní ‘not even, neither’ also forms decreasing quantifiers:

- (141) a. Ní biyáma h-ádagiya g-erémuha-dii-tiyan.
 not.even two P3PL-from AFF-sing-POT-T3M
 ‘Not even two of them can sing.’
- b. Ní ûrûwa leskuélana h-agánaguwa dísi
 not.even three student P3PL-among ten
 yûndü-tiyan leskuéla.
 go-T3PL school.
 ‘Not even three students in ten went to school.’

4.15.1 Negative Polarity Items

Garifuna has at least two negative polarity items, *-gubei-* ‘ever’ and *nikáta* ‘anything’ (cf. (36), (134b)). However, the decreasing quantifiers described above do not seem to license *-gubei-*:

- (142) a. Úwa-ti óunli abínaha-ti.
 NEG.EXST-T3M dog dance-T3M
 ‘No dogs dance.’
- b. * Úwa-ti óunli abínaha-gubei-ti.
 NEG.EXST-T3M dog dance-CONCL-T3M
 ‘No dogs ever dance.’ (intended)
- c. * Úwa-gubei-ti óunli abínaha-ti.
 NEG.EXST-CONCL-T3M dog dance-T3M
 ‘No dogs ever dance.’ (intended)
- (143) a. Máma sún leskuélana abínaha-a-yan.
 NEG all student dance-PRF-R3PL
 ‘Not all the students have danced.’
- b. *? Máma sún leskuélana abínaha-gubei-tiyan.
 NEG all student dance-CONCL-T3PL
 *? ‘Not all the students have ever danced.’
- (144) a. M-íbe-tiyan gurígiya abúgaha-tiyan Ferrári.
 NEG-be.much-T3PL person drive-T3PL Ferrari
 ‘Not many people have driven a Ferrari.’
- b. * M-íbe-tiyan gurígiya abúgaha-gubei-tiyan
 NEG-be.much-T3PL person drive-CONCL-T3PL
 Ferrári.
 Ferrari
 ‘Not many people have ever driven a Ferrari.’ (intended)

- (145) a. Lóguwa-tiyan gurígiya atúriha-tiyan Garífuna.
 NEG.be.enough-T3PL person study-T3PL Garífuna
 ‘Not enough people study Garífuna.’
- b. * Lóguwa-tiyan gurígiya atúriha-gubei-tiyan
 NEG.be.enough-T3PL person study-CONCL-T3PL
 Garífuna.
 Garífuna
 ‘Not enough people have ever studied Garífuna.’ (intended)

Ní ‘not even’ is often, although not always, associated with negative concord. That is, verbs following *ní* typically require another negative element. In the following example, the verb is negated, yet still does not license *-gubei-*.

- (146) a. Ní ába w-ádagiya m-ídi gii-duwa
 not.even one P1PL-from NEG-go AUX.still-D1PL
 l-uwágu háti.
 P3M-on moon
 ‘Not even one of us has been on the moon.’
- b. * Ní ába w-ádagiya m-ídi-gubei-tuwa
 not.even one P1PL-from NEG-go-CONCL-T1PL
 l-uwágu háti.
 P3M-on moon
 ‘Not even one of us has ever been on the moon.’ (intended)

Only *úwa-* ‘be none’ consistently licenses *nikáta* ‘nothing, anything’. *Úwa-* is the only negative element in sentence (147).

- (147) Úwa-ti óunli éihi-ti ni-káta.
 NEG.EXST-T3M dog see-T3M not.even-what
 ‘No dogs saw anything.’

The other decreasing quantifiers may or may not license this use. For a number of sentences, including (148), Mr. Lopez was undecided between *nikáta* and *kátei* ‘something’:

- (148) ? Máma sún-gubei leskuélana éihi-tiyan
 NEG ALL-CONCL student see-T3PL
 ni-káta.
 not.even-what
 ? ‘Not all the students saw anything.’

4.16 Distribution

Quantified noun phrases occur in all grammatical roles.

- (149) a. Éibagua-tiyan sún-gubei óunli.
 run- T3PL all-CONCL dog
 ‘Every dog runs.’
- b. Óunabü-ti Jóhñü sún-gubei óunabügülei
 answer-T3M John all-CONCL question
 l-uwéidigiya biyáma.
 P3M-except two
 ‘John answered all but two questions.’
- c. Hóu-tina báandi t-ídagiya barúru.
 eat-T1SG a.lot P3F-from plantain
 ‘I ate most of the plantains.’
- d. Óunaha-ti méisturu gárada hó-un sún
 sent-T3M teacher book P3PL-to all
 leskuélana.
 student
 ‘The teacher sent a letter to all the students.’
- e. Adímaha-tina hó-un ha-surúsiya sún leskuélana.
 talk-T1SG P3PL-to P3PL-doctor all student
 ‘I talked to all the students’ doctors.’
- f. Adímaha-tu Pámü hó-un ha-surúsiya báandi
 talk-T3F Pam P3PL-to P3PL-doctor a.lot
 leskuélana.
 student
 ‘Pam talked to a lot of students’ doctors.’
- g. Biyáma n-agûtu-nu há.
 two P1SG-grandmother-PL 3PL.PROX
 ‘These are my two grandmothers.’

Although quantified noun phrases are not required to be focused, they often are:

- (150) a. Sún mûtu há l-ída be-i
 all person 3PL.PROX P3M-in AUX.BA-R3M
 maríhei abínaha-tiyan t-úma tó
 wedding dance-T3PL P3F-with 3F.PROX
 amáre-du bo-u.
 marry-INC AUX.BA-R3F
 ‘All the people at the wedding danced with the bride.’

- b. Ūrūwa méisturu-gu éiha h-amu-tiyan
 three teacher-COLL see P3PL-AUX.TR.NFUT-T3PL
 leskuélana.
 student
 ‘Three teachers saw the students.’
- c. Sún mútu chú-ti hó-un.
 all person be.smart-T3M P3PL-to
 ‘Everybody is smart.’
- d. Sún-gubei mútu yán wurí-ti h-águ.
 all-CONCL person here be.black-T3M P3PL-eye
 ‘Everyone here has black eyes.’
- e. Ába-neina wagíya, ú-ti ába
 one-DISTR 1PL.PRON give-T3M one
 gárada wó-un.
 book P1PL-to
 ‘He gave each of us a book.’

However, negated quantified noun phrases with *máma* are always focused (151a), because *máma* occurs clause-initially and negates whatever immediately follows it. The same is true for A-quantifiers containing *máma* (151b):

- (151) a. Máma báandi gurígiya abúgaha-tiyan Ferrári.
 NEG a.lot person drive-T3PL Ferrari
 ‘Not many people have driven a Ferrari.’
- b. Máma ságü dán guwá-tuwa duwéin.
 NEG every when drink-T1PL wine
 ‘We drink wine once in a while.’
 (Lit. ‘It’s not all the time we drink wine.’)

When multiple noun phrases containing quantifiers occur in a Garifuna sentence, the subject is almost always focused:

- (152) a. Sún iyén-yu ábinaha-tiyan h-áma sún
 all man-PL dance-T3PL P3PL-with all
 hiyánru-yu.
 woman-PL
 ‘All the men danced with all the women.’

- b. Sún tágüda dún-tiyan biyáma wügûri-yan
 all police arrest-T3PL two man-PL
 ugúyan.
 today
 ‘Every police officer arrested two guys today.’
- c. Ába-neina wágiya adímaha-tuwa biyáma násiyün.
 one-DISTR 1PL speak-T1PL two language
 ‘Each of us speaks two languages.’

4.17 Scope Ambiguities

At least some sentences with multiple quantifiers are ambiguous in Garifuna. The following sentence may mean equally that the students all read the same book, or that they each read a different book:

- (153) Sún leskuélana alíha-tiyan ába gárada.
 all student read-T3PL one book
 ‘All the students read a book.’

However, for other similar sentences, Mr. Lopez provides a different interpretation. While the preferred reading of (154a) is for *sún* to scope over the object, it may be ambiguous; (154b) is not at all ambiguous, and can only refer to a situation in which there are as many boxes as men.

- (154) a. Sún wügûri-yan h-anûgi yan
 all man-PL P3PL-carry AUX.YAN
 ába gáfu.
 one box
 ‘All the men are carrying a box.’
- b. Ába-neina wügûri-yan h-anûgi yan
 one-DISTR man-PL P3PL-carry AUX.YAN
 ába gáfu.
 one box
 ‘Each man is carrying a box.’

In general, *sún* ‘all’ seems to be more ambiguous, while *ábaneina* ‘each’ forces a distributive reading. The more natural reading of (155a) suggests there is one picture with multiple students in it, but it appears to be compatible with multiple pictures as well; (155b) refers to a situation in which there are the same number of pictures as students. (See Section 4.12 for some discussion of word order here.)

- (155) a. A<nú>hein h-ayáwü sún leskuélana
 EXST.DIST<I3F> P3PL-picture all student
 l-uwágu dábula.
 P3M-on table
 ‘A picture of all the students is on the table.’
- b. A<nú>hein ába-neina h-ayáwü leskuélana
 EXST.DIST<I3F> one-DISTR P3PL-picture student
 l-uwágu dábula.
 P3M-on table
 ‘A picture of each student is on the table.’

Wh-questions suggest object-wide scope even for *kára* ‘each’. The question given in (156) is best answered by naming a question, rather than pairs of students and questions, as in (157):

- (156) Ká sá óunabügülei h-óunabu be-i
 what Q question P3PL-answer AUX.BA-R3M
 kára leskuélana?
 each student
 ‘What question did each student answer?’
- (157) Lé richá be-i.
 3M.PROX be.right AUX.BA-R3M
 ‘The right one.’ (Response to (156).)

Negative elements, meanwhile, scope over whatever immediately follows them. Sentence (158a), then, describes a situation in which there are at least some students who do not smoke, while sentence (158b) describes one in which nobody smokes, and sentence (158c) describes a situation in which at least some students smoke.

- (158) a. Máma sún leskuélana agúmulaha-tiyan.
 NEG all student smoke-T3PL
 ‘Not every student smokes.’
- b. M-agúmulahaa-tiyan sún leskuélana.
 NEG-smoke-T3PL all student
 ‘Every student doesn’t smoke.’
- c. Máma sún leskuélana m-agúmulahaa-tiyan.
 NEG all student NEG-smoke-T3PL
 ‘Not every student doesn’t smoke.’

4.18 One to One Dependency

One-to-one relationships are not expressed in any special way; these expressions are roughly parallel to their English equivalents.

- (159) Hó-un sún wûri-yan, a<ní>hein ába wügûri
 P3PL-to all woman-PL EXST.DIST<I3M> one man
 lé brídu be-i.
 3M.PROX be.good AUX.BA-R3M
 ‘For every woman, there’s a perfect man (lit. ‘one man who is good’).’

- (160) A<yán>heiyan kára-neina gurígiya hó-un sún mútu.
 EXST.DIST<I3PL> each-DISTR person P3PL-to all person
 ‘There’s someone for everyone.’

- (161) Sún fiyáadu lé b-ichú be-i
 all dollar 3M.PROX P2SG-give AUX.BA-R3M
 agríyaha-ti ába ráhü.
 feed-T3M one child
 ‘Every dollar you donate feeds one child.’

4.19 Rate Phrases

-ída ‘in’ is often used in rate constructions:

- (162) Séingü-gü ye-in minítu l-asáminara l-ída
 five-only AUX.YAN-R3M minute P3M-think P3M-in
 ába wéiyu.
 one day
 ‘He only thinks for five minutes a day.’

- (163) Yündü-tina New Yorkü úrüwa gádürü wéiyaasu
 go-T1SG New York three four time
 l-ída irúmu.
 P3M-in year
 ‘I go to New York three or four times a year.’

- (164) Óufudaha-tina hó-un séingü leskuélana l-ída ába
 teach-T1SG P3PL-to five student P3M-in one
 irúmu.
 year
 ‘I teach five students a year.’

-úwagu ‘on’ is also sometimes used:

- (165) Hóu-tina ûrüwa wéikaasu l-uwágu wéiyu.
 eat-T1SG three time P3M-on day
 ‘I eat three times a day.’
- (166) Hóu-ti Jóhnü ûrüwa barúru biyáma wéikaasu l-uwágu wéiyu,
 eat-T3M John three plantain two time P3M-on day
 séingü wéiyu l-ída dimáansu.
 five day P3M-in week
 ‘John eats three plantains twice a day five days a week.’

Finally, *-ída* is also used in bounding expressions:

- (167) Nadágumei-ti Édü séingü wéiyu l-ída ába dimáansu,
 work-T3M Ed five day P3M-in one week
 dími sán dimáansu l-ída ába irúmu,
 half hundred week P3M-in one year
 l-ída daráandi irúmu.
 P3M-in thirty year
 ‘Ed worked five days a week, fifty days a year, for thirty years.’

4.20 Concluding Remarks

Garifuna contains the monomorphemic quantifiers *sún* ‘all’, *ába* ‘one’, and *báandi* ‘many’.⁴⁵ However, there is no monomorphemic ‘none’ in Garifuna; instead, it must be expressed by a predicate that agrees with the quantified noun, or else by *ní ába* ‘not even one’.

Garifuna is able to distinguish between distributive and collective universal quantifiers, although this distinction is syntactically complex. The only way that I know of to force a collective reading is to use a prepositional phrase meaning something like ‘between them’; distributive readings require the use of either a lexical quantifier *ábaneina* ‘each’ or the distributive morpheme *-neina*.

Most A-quantifiers are more complex than most D-quantifiers, as nearly all A-quantifiers are adverbial noun phrases with some internal structure. While there is at least one relatively simple A-quantifier, *sarágu* ‘often’, it is not frequently used. (However, *sarágu* is frequently used as a D-quantifier.)

⁴⁵ *Sarágu* ‘many’ is probably not analyzable by most speakers, but it is not historically monomorphemic. Taylor (1956a: 13–14) suggests that *sarágu* probably contains collective *-gu*, possibly deriving from *sara* ‘upright’.

Garifuna expresses ‘only’ with *-rügü*, which is often shortened to *-gü*. Typically, *-gü* is a suffix⁴⁶ on whatever it is intended to limit, which is focused. If this argument is not a predicate, then an auxiliary is used immediately following *-gü*; if this argument is itself a predicate, the appropriate agreement markers follow the *-gü*.

- (168) a. Jóhnü-**gü** ye-in yûbüri l-ída abínaha-ni.
 John-only AUX.YAN-R3M come P3M-in dance-NMZ
 ‘Only John came to the party.’
- b. Séingü-**gü** ya-yan wûri-yan
 five-only AUX.YAN-R3PL woman-PL
 yûbüri-tiyan l-ída abínaha-ni.
 come-T3PL P3M-in dance-NMZ
 ‘Only five women came to the party.’
- c. Biyáma-**gü** ye-in óunabügülei l-óunabu
 two-only AUX.YAN-R3M question P3M-answer
 Jóhn.
 John
 ‘John answered only two questions.’
- d. Erémuha-**gü**-ti Jóhn m-abínahaa-ti.
 sing-only-T3M John NEG-dance-T3M
 ‘John only sang, he didn’t also dance.’
- e. Nówaü-**gü** ye-in h-áma há
 Noah-only AUX.YAN-R3M P3PL-with P3PL.prox
 ebéluru ba-yan l-úma t-ída ugúnei
 enter AUX.BA-R3PL P3M-with P3F-in boat
 erédera nibágari-yan.
 stay alive-R3PL
 ‘Only Noah and those that got in the boat with him stayed alive.’
 (Genesis 7.23)

4.21 Conclusions

Garifuna can express a wide range of quantificational meanings, using a variety of constructions. Quantifiers can be syntactically parallel to either modifiers, predicates, or possessed nouns. Most of the modifier quantifiers seem to be relatively semantically basic, while more complex semantics (such as value judgments) tend to be expressed by predicates. However, quantified noun phrases can and do occur in all grammatical roles.

⁴⁶ The way that *-gü* affects word stress (not noted here) suggests it may be a clitic, but (168d) suggests otherwise.

Abbreviations in Interlinear Glosses

1	First person
2	Second person
3	Third person
A	a-auxiliary
AFF	Affirmative
AUX	Auxiliary
BA	ba-auxiliary
CLF	Classifier
COLL	Collective
COMP	Complementizer
CONCL	Conclusive
D	d-series suffix
DIST	Distal
DISTR	Distributive
EXST	Existential
F	Feminine
FUT	Future
I	Infix
INC	Inceptive
INTS	Intensifier
LOC	Locative
M	Masculine
MID	Middle voice
N	n-series suffix
NEG	Negative
NFUT	Non-future
NMZ	Nominalizer
P	Pronominal prefix
PL	Plural
POT	Potential
PRF	Perfective
PRON	Pronoun
PROX	Proximal
Q	Question
R	Reduced d-series suffix
REFL	Reflexive
S	Short-series suffix
SG	Singular
T	t-series suffix
TR	Transitive
YAN	yan-auxiliary (incomplete/ive)

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Chapter 5

Quantification in German

Gregory M. Kobele and Malte Zimmermann

5.1 Basic Properties of German

German noun phrases (which will be referred to throughout this paper as ‘DPs’) are rigidly ordered, with determiners preceding adjectives preceding nouns preceding their complements and clausal adjuncts.¹ Many (D-)quantifier words in German can co-occur with a (primarily definite) determiner. In this case, they (immediately) follow the determiner. In no case can such a quantifier word be preceded by an adjective in its phrase (but see Section 5.2.1.3 for peculiarities of numeral expressions).

- (1) **(die) meisten Romane*
the most novels
- (2) *(die) viele(n) Wassermelonen*
the many watermelons
- (3) *(die) drei Fragezeichen*
the three question marks

Case, gender and number morphology is indicated on adjectival elements (a small class of nouns inflect as well), but predominantly on determiner elements.

Nouns belong to one of three inflectional classes (genders) in the singular, which are typically called ‘masculine’, ‘feminine’, and ‘neuter’. The declension table for the definite determiner is given below. The plural and feminine singular paradigms differ only in the dative, the neuter and masculine singular

¹ See Pafel (2005) for more discussion as to the structure of DPs, which is largely orthogonal to our purposes here.

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are identical in the dative and genitive, and only the masculine singular distinguishes between nominative and accusative.

	masc	neut	fem	plural
nom	der	das	die	die
acc	den	das	die	die
dat	dem	dem	der	den
gen	des	des	der	der

declining the definite article

At least some quantifying expressions, such as the distributive universal quantifier *jed-* (every/each) to be discussed in Section 5.2.2.1, show a parallel declension paradigm, which suggests that structurally they are determiners in D as well.

	masc	neut	fem
nom	jeder	jedes	jede
acc	jeden	jedes	jede
dat	jedem	jedem	jeder
gen	jedes	jedes	jeder

declining the D-quantifier *jed-*

There are two kinds of inflectional endings; the *weak* (W) endings, which appear on elements which follow a strongly inflected element of another category in their phrase, and *strong* (S) endings, which are borne by the first inflected element in the phrase (but see Section 5.2.1.3 for a systematic class of exceptions). In case there is more than one adjective in a DP, all adjectives carry the same (weak or strong) inflection.

	masc	neut	fem	plural
nom	-e	-e	-e	-n
acc	-n	-e	-e	-n
dat	-n	-n	-n	-n
gen	-n	-n	-n	-n

weak endings

nom	-r	-s	-e	-e
acc	-n	-s	-e	-e
dat	-m	-m	-r	-n
gen	-s	-s	-r	-r

strong endings

The determiner-like paradigm of strong adjectives might suggest that they occupy the structural determiner position D, possibly after syntactic A-to-D movement. Some examples for weakly and strongly inflected adjectives are given below:

- (4) *Oh du kluger schlanker Mann!*
 Oh you clever_{NOM.M.S} slim_{NOM.M.S} man
 ‘Oh, you clever slim man, you!’
- (5) *Der kluge schlanke Mann starb.*
 the_{NOM.M.S} clever_{NOM.M.W} slim_{NOM.M.W} man died
- (6) *Den klugen schlanken Mann hat die*
 the_{ACC.M.S} clever_{ACC.M.W} slim_{ACC.M.W} man has the_{NOM.F.S}
schöne dicke Frau geküsst.
 pretty_{NOM.F.W} plump_{NOM.F.W} woman kissed
 ‘The pretty plump woman kissed the clever slim man.’
- (7) *Ein nettes süßes Mädchen hat der*
 a_{NOM.N} nice_{NOM.N.S} sweet_{NOM.N.S} girl has the_{DAT.F.S}
schönen dicken Frau geholfen.
 pretty_{DAT.F.W} plump_{DAT.F.W} woman helped
 ‘A nice sweet girl helped the pretty plump woman.’

German has three possessive constructions, a prenominal one and two postnominal ones. Prenominal possession does not iterate, and is often felt to be of a more formal register. Whereas one can have a possessive DP (in the genitive case) premodifying a noun, this possessive DP cannot itself be modified by another such.

- (8) *jedes Mannes Vater*
 of every man father
 ‘every man’s father’
- (9) **jedes Mannes Vaters Schwester*
 of every man father sister
 intended: ‘every man’s father’s sister’

There is also a more colloquial but frequent alternative, in which a dative-marked possessor DP precedes a coreferential 3SG possessive pronoun preceding the possessed NP:

- (10) *jedem Mann sein Vater*
 every_{DAT.M.S} man his father
 ‘every man’s father’

The two postnominal possession constructions are individuated by the category of the possessor phrase. In the first, it is a noun phrase in the genitive case,

and in the second, a PP headed by *von* (from). In both constructions, the possessed noun may have a determiner (indeed, must, unless it is a plural or a mass term – see Section 5.2.1.2). The second construction does not iterate well, although it is not felt to be any more formal than the others.

(11) *die Schwester des Vaters jedes Mannes*
 the sister of the father of every man
 ‘every man’s father’s sister’

(12) *der Vater von jedem Mann*
 the father from every man
 ‘the father of every man’

(13) **die Schwester vom Vater von jedem Mann*
 the sister from the father from every man

Traditional grammars of German partition matrix clauses into three ‘topological fields’: the prefield, the midfield, and the postfield, which are separated from each other by two sentential brackets. In declarative main clauses, the left sentential bracket, which corresponds to the complementizer position of X-bar theory, is occupied by the (unique) finite verb, and the right sentential bracket position by all remaining verbs. The string of words occupying the prefield is typically an uncontroversial constituent. The constituent-hood of the prefield gives rise to the verb-second (V2) order of matrix sentences in German. The midfield houses the remaining arguments and adjuncts of the clause, except for certain clausal arguments, adjuncts, and post-posed material, which are canonically located in the postfield, to the right of the non-finite verbal cluster.

(14) prefield V_{fin} midfield V_{1...V_n} postfield

In X-bar theoretical terms, the linear precedence relations between prefield and midfield, and in particular of the various constituents within the midfield correspond to notions of scope and c-command (as evidenced for example by binding possibilities): i.e. in general, material more to the left takes scope over and binds into material more to the right. In a neutral sentence, the prefield is typically occupied by what would be the leftmost element of the midfield. (For more details see Frey (2006).)

German is verb-final in subordinate clauses.² Canonical subordinate clauses can be thought of as structurally identical to main clauses, but with the finite

² This is an approximation. There is a rich literature on so-called ‘embedded verb second’ clauses, see e.g. Vikner (1995). For a good introduction to the issues surrounding an analysis of verbal position in German see Thiersch (1978).

verb remaining in the right sentential bracket together with any additional verbal elements. The first element of subordinate clauses is either a *wh*-phrase, a relative pronoun, or a complementizer, all of which are located in the left sentential bracket or complementizer domain (CP).

- (15) *Maria ist gestern gestorben.*
 Maria is yesterday died
 ‘Maria died yesterday.’
- (16) ... *dass Maria gestern gestorben ist*
 ... that Maria yesterday died is
 ‘... that Maria died yesterday’

In sentence (15), the finite verb *ist* (is) appears after the first clausal constituent – the subject *Maria* – and the other verbal elements (the participle *gestorben*) are clause final. In (16), the finite verb appears at the end of the clause together with the other non-finite verbal elements.³ The verb-second moniker comes from the fact that the choice of the first clausal constituent is relatively free. In the sentences below (which are variants of sentence (15), in the prefield are the adverb *gestern* and the participle *gestorben*, respectively. No other words can occupy the initial position in these sentences.

- (17) *Gestern ist Maria gestorben.*
- (18) *Gestorben ist Maria gestern.*

Word order in the midfield of the German sentence is relatively free. However, as indicated above, and as discussed by Lenerz (1977), there are asymmetries across different word orders with respect to multiple parameters. For example, although both orders ‘indirect object (IO) – direct object (DO)’ and ‘DO – IO’ are permissible, only the first is acceptable if the direct object is indefinite.

- (19) *Ich habe dem Mann das Buch gegeben.*
 I have the man the book given
 ‘I gave the man the book.’
- (20) *Ich habe das Buch dem Mann gegeben.*
 I have the book the man given

³ This clause final verbal cluster is the subject of much descriptive and theoretical work (den Besten and Edmondson 1983, Zwart 1996, Vogel and Schmid 2004, Bader and Schmid 2009).

- (21) *Ich habe dem Mann ein Buch gegeben.*
 I have the man a book given
- (22) *#Ich habe ein Buch dem Mann gegeben.*
 I have a book the man given

In addition, if the IO is focussed (as in the answer to a wh-question), both orders are acceptable, but if the DO is focussed, only the order IO-DO is acceptable.

- (23) *Wem hast du das Geld gegeben?*
 whom have you the money given
 'Who did you give the money to?'
1. *Ich habe dem Kassierer das Geld gegeben.*
 I have the cashier the money given
 2. *Ich habe das Geld dem Kassierer gegeben.*
 I have the money the cashier given
- (24) *Was hast du dem Kassierer gegeben?*
 what have you the cashier given
 'What did you give to the cashier?'
1. *Ich habe dem Kassierer das Geld gegeben.*
 I have the cashier the money given
 2. *#Ich habe das Geld dem Kassierer gegeben.*
 I have the money the cashier given

This asymmetry between IO-DO and DO-IO word order in the midfield can be explained by postulating a structural asymmetry between these two word orders, with the IO-DO order being basic, and the DO-IO order derived. Another difference following from the asymmetry between IO and DO is that an indefinite DO, but not an IO, can occupy the prefield together with a non-finite verb in VP-focus contexts ('VP fronting').

- (25) *Geld gegeben habe ich einem Kassierer.*
 money given have I a cashier
 'I gave money to a cashier.'
- (26) **?Einem Kassierer gegeben habe ich Geld.*
 a cashier given have I money

Furthermore, the observed asymmetries survive passivization, suggesting that they do indeed have something to do with a deep structural asymmetry.

- (27) *Gestern habe ich dem Mann einen tollen Preis gegeben.*
 yesterday have I the man a great prize given
 ‘I gave the man a great prize yesterday.’
- (28) *Gestern wurde dem Mann ein toller Preis gegeben.*
 yesterday became the man a great prize given
 ‘A great prize was given to the man yesterday.’
- (29) **Gestern wurde ein toller Preis dem Mann gegeben.*
 yesterday became a great prize the man given
- (30) *Ein toller Preis gegeben wurde dem Mann gestern.*
 a great prize given became the man yesterday
- (31) **Dem Mann gegeben wurde ein toller Preis gestern.*
 the man given became a great prize yesterday

In configurational accounts, these facts suggest that indirect objects have base positions higher in the structure than do their clausemate direct objects.⁴

In the next Section (5.2), we survey three basic classes of quantifiers; intersective (existential) quantifiers in Section 5.2.1, co-intersective (universal) quantifiers in Section 5.2.2, and proportional quantifiers in Section 5.2.3. Afterwards, we discuss a variety of selected topics (Section 5.3).

5.2 Three Basic Classes of Quantifiers

5.2.1 Generalized Existential Qs

There are three ways of expressing existential quantification in German: (i) D-quantifiers with sg and pl count nouns (Section 5.2.1.1); (ii) bare NPs with pl count nouns and mass nouns (Section 5.2.1.2); (iii) A-quantifiers (Section 5.2.1.6).

5.2.1.1 D-Quantifiers

Existential quantification in German can be expressed using the indefinite determiner *ein* (a/one), or the complex quantifier *manch ein* (many a) with singular count nouns, and *manche*, *einige* and – particularly in colloquial spoken German – *(ei)n paar* (some, several) with plural count nouns.

⁴ There is a class of ditransitive verbs, including for example *unterziehen* (subject), for which the tests above come out with the opposite pattern of results, suggesting that these verbs project a different (DO above IO) structure.

- (32) *Ein Mann ist gekommen.*
 a man is come
 'A man came.'
- (33) *Manche / Einige Männer sind gekommen.*
 some men are come
 'Some men came.'
- (34) *Ich hab' 'n paar Kinder eingeladen.*
 I have some children invited
 'I invited some children.'

The form *ein* is also used as a numeral expression, meaning **one**. In colloquial German, the two occurrences can be distinguished by the fact that indefinite determiner *ein* is typically reduced to *'n*, whereas the numeral *ein* is not.

- (35) *Ich hab' *'n / ein Buch gelesen und nicht zwei.*
 I have a / one book read and not two
 'I read one book, and not two.'

As for the plural D-quantifiers, there is a semantic difference between *manche*, on the one hand, and *einige/(ei)n paar*, on the other, in that *manche* cannot refer to coherent groups or intervals.

- (36) *Seit einigen / ein paar / *manchen Jahren lebt Angela in Berlin.*
 since some / a pair / some years lives Angela in Berlin
 'For the last couple of years, Angela has lived in Berlin.'

Rather, it seems that *manche* is distributive in picking out individuals or points in time that are located at sufficient temporal or spatial distances from each other. Not surprisingly, distributive *manche* does not easily combine with collective predicates.

- (37) *In manchen / *ein paar Jahren bauten die Winzer ausgezeichneten Wein an.*
 In some / a pair years cultivated the winery owners excellent wine
 'The winery owners cultivated excellent wine in some years.'

- (38) #*Manche* / *Einige* / *Ein paar Mitglieder der Partei bildeten*
 some / some / a pair members of the party formed
eine eigene Fraktion.
 an own parliamentary group
 ‘Some members of the party formed their own parliamentary group.’

A similar state of affairs is reported for the Dutch plural D-quantifiers *sommige* and *enkele* in de Hoop (1995).

5.2.1.2 Bare Existential NPs

Existential quantification with plural count nouns and mass nouns is typically expressed by means of a bare NP without an overt determiner element, cf. (39) for plural count NPs and (40) for mass NPs.⁵

- (39) 1. *Die Kinder fingen Frösche.*
 the children caught frogs
 2. *Pferde standen auf der Weide.*
 horses stood on the field
- (40) 1. *Die Linguisten tranken Bier.*
 the linguists drank beer
 2. *Wasser tropfte die Wände herunter.*
 water dripped the walls down
 ‘Water dripped down the walls.’

In order to allow for a consistent semantic and syntactic treatment of all existentially quantified DPs in German, many scholars assume the existence of a covert existential determiner with bare plurals and mass nouns as well (Bhatt 1990):

$$[DP \emptyset NP_{pl/mass}]$$

Evidence for this comes from several dialects of German, such as Swabian and Bavarian, which feature an overt indefinite determiner with existential mass NPs and, to a certain extent, with plural NPs (examples from Glaser (1993)).

- (41) *Sãi fraint brauxad a geid.*
 his friend needed a money
 ‘His friend would need money.’

⁵ It is also possible, though less frequent, to use a definite singular DP to express a ‘kind’ reading.

- (42) *Dq sà n ò a Epfe drõ.*
 there are an apples on it
 ‘There are apples on it.’

At the same time, the null determiner analysis has been questioned since, as is also the case in English, bare plural and mass NPs can also give rise to generic readings under certain conditions, as illustrated below.

- (43) 1. *Kinder sind wild.*
 children are rambunctious
 2. *Zucker ist ungesund.*
 sugar is unhealthy

As pointed out in Diesing (1992), the generic reading is correlated with syntactic configuration; only vP-external DPs can be interpreted generically when accented.

- (44) ... *weil KINDER ja doch [vP auf der Straße spielen]*
 ... because children of course on the street play
 ‘... because children play on streets, of course.’
- (45) ... *weil ja doch [vP KINDER auf der Straße spielen]*
 ... because of course children on the street play
 ‘... because there are of course some children who play on the street.’

The varying semantic interpretation of bare NPs depending on their syntactic position seems to provide evidence against a lexical ambiguity analysis that would posit two covert determiners. Instead, it is frequently taken as evidence in favour of analyses in which bare NPs have no existential quantifying force by themselves. Their sole semantic contribution is taken to lie in providing a restricted variable that is existentially closed by covert propositional quantifiers at certain points in the structural configuration (Kamp 1981, Heim 1982, Diesing 1992, Kamp and Reyle 1993). For the sake of consistency, this type of analysis typically assumes the indefinite determiner *ein* with singular count nouns to be semantically vacuous as well. As a consequence of this analysis, there would be strictly speaking no existential D-quantifiers in German at all.

5.2.1.3 Numerals

The numerals for one through twelve in German are monomorphemic, and are given (in increasing order) in (46).

(46) *eins, zwei, drei, vier, fünf, sechs, sieben, acht, neun, zehn, elf, zwölf*

The numerals from thirteen through nineteen are gotten by suffixing the appropriate number name with *zehn* (ten).⁶ The numerals denoting multiples of ten are obtained by suffixing the name of the multiple with *zig*.⁷ Given such a numeral *N*, the numeral *n und N* denotes the number $n + N$, where *n* ranges between one and nine.⁸

Adnominal numerals in German do not inflect for case (or number) with the exception of the genitive. However, numerals beyond three do not inflect at all.

(47) *Ich habe den Männern geholfen.*
 I have the_{DAT.M} men helped
 ‘I helped the men.’

(48) *Ich habe zwei Männern geholfen.*
 I have two_{DAT.M} men helped

(49) *Ich habe den Kindern der Männer geholfen.*
 I have the children the_{GEN.PL} men helped
 ‘I helped the men’s children.’

(50) *Ich habe den Kindern zweier Männer geholfen.*
 I have the children two_{GEN.PL} men helped

There is also a limited amount of inflection on bare numerals, which is not restricted to ‘three’.

(51) *mit zweien / dreien / vieren / ...*
 with two_{DAT.PL} / three_{DAT.PL} / four_{DAT.PL} / ...

(52) Q: *Wie viele / Was für Bücher hast du gelesen?*
 how many / what for books have you read

A: *Fünf(e) / Interessant*(e).*
 five / interesting
 ‘Five / Interesting ones.’

⁶ With the exception of the number name *sieben* (seven), which reduces to *sieb*.

⁷ With the exception of *zwanzig* (twenty), *dreißig* (thirty), and *siebzig* (seventy).

⁸ Excepting $n = 1$, in which case the form *ein* is used (instead of *eins* – cf. *ein und achtzig*). If $n = 7$, either *sieben* or the reduced *sieb* may be used.

The numerals *hundert* (hundred), *tausend* (thousand), and their composita can be used either to denote numbers (53) or (when inflected for plural number) intervals (54). When denoting numbers, these numerals are prefixed with numerical indicators of scale (this is optional with *ein* (one), see (53)), but when denoting intervals, numerical indicators of scale are prohibited. In the latter case, they inflect, as do *zwei* and (marginally) *drei*, for genitive case (54.2).

- (53) 1. *(Ein)hundert Menschen sind gekommen.*
 (one) hundred people are come
 ‘A hundred people came.’
2. *Ich musste den Müll von (ein)hundert Menschen aufräumen.*
 I had to the trash of (one) hundred people clean up
 ‘I had to clean up the trash of a hundred people.’
- (54) 1. *(*Ein)Hunderte Menschen sind gekommen.*
 (one)hundreds people are come
 ‘Hundreds of people came.’
2. *Ich musste den Müll (*ein)hunderter Menschen aufräumen.*
 I had to the trash (one)hundreds_{GEN.PL} people clean up
 ‘I had to clean up the trash of hundreds of people.’

Common in colloquial speech is the interval denoting bare form *zig* (see above for the suffigating use of *-zig* in building complex numerals). In the domain of human individuals, intuitions vary as to whether *zig* denotes an interval on the order of tens (and thus would be smaller than *hundert*), or is simply large and indeterminate. However, intuitions become clearer when we let *zig* range over domains of individuals that typically come in large quantities that do not allow for easy individuation. In the ant example below, only the order of tens-interpretation is available. Syntactically, *zig*, unlike *hundert*, does not require a partitive syntax when preceded by a definite determiner (57).

- (55) *Ich hab’ zig Menschen getroffen.*
 I have tens people met
 ‘I met tens / lots of people.’
- (56) *Ich hab’ zig Ameisen in meiner Wohnung.*
 I have tens ant in my flat
 ‘I have tens / *lots of ants in my flat.’
- (57) 1. *die hunderte *(von) Menschen*
 the hundreds of people
2. *die zig (*von) Menschen*
 the tens of people

The ordinal *one* in German is *eins*. When used as a determiner, the numeral takes the form *ein-* with an ending appropriate to the case and gender of its NP. In the masculine nominative, and the neuter nominative and accusative, the numeral appears in its bare form *ein*, and adjectives following it display strong inflection.

	masc	neut	fem
nom	<i>ein</i>	<i>ein</i>	<i>eine</i>
acc	<i>einen</i>	<i>ein</i>	<i>eine</i>
dat	<i>einem</i>	<i>einem</i>	<i>einer</i>
gen	<i>eines</i>	<i>eines</i>	<i>einer</i>

When used as a stand alone argument (in N' deletion contexts) the form *ein* (masculine and neuter nominative, and neuter accusative) is replaced by *einer* or *eins* depending on whether the gender of the implied noun is masculine or neuter respectively.

(58) *Ein Mädchen/Eins hat mich geküsst.*
 a girl/one has me kissed
 'A girl kissed me.'

(59) *Ein Mann/Einer hat mich geküsst.*
 a man/one has me kissed
 'A man kissed me.'

The negative existential *kein* (no, see Section 5.2.1.7), and the possessive determiners *mein*, *dein*, *sein* (my, your, his and her) exhibit the same morphological behaviour as *ein*.

Despite their relative inflectional poverty, numerals share certain properties with canonical adjectives. First, they are preceded in the DP by definite and demonstrative Ds and quantificational elements (60). Second, they can be (albeit marginally) preceded by other adjectives when these bear contrastive focus (61).

(60) *die / diese / alle zwei Mädels*
 the / these / all two girls

(61) *Ich nehme die TEUREN zwei Sonderkarten und nicht die BILLIGEN.*
 I take the expensive two special tickets and not the cheap
 'I will take the two EXPENSIVE special tickets, and not the CHEAP ones.'

On the other hand, numerals cannot in general appear in predicate position (see Section 5.3.3), which trait they have in common with more canonical determiners.

- (62) **Meine Feinde sind zwei.*
 my enemies are two

5.2.1.4 Value Judgement Quantifiers

Another subclass of quantifiers in DPs with existential force are value judgement quantifiers, which include *wenig* (few / little) and *viel* (many / much). The former inflects like an adjective, with a comparative (*weniger*) and superlative (*am wenigsten*) form (the paradigm of *viel* involves the suppletive *mehr* (more) and *am meisten* (most)). Both can combine with plural count and with mass nouns, and can be modified by *sehr* (very) and *zu* (too).

- (63) *Wenige Vampire ernähren sich von nichtmenschlichem Blut.*
 few vampires nourish themselves from the not human blood
 ‘Few vampires feed on non-human blood.’

- (64) *Wenig Saft ist drin.*
 little juice is in it
 ‘It has little juice.’

- (65) *Viele Schiffe gingen verloren.*
 many ships went lost
 ‘Many ships were lost.’

- (66) *Viel Knoblauch ist vorhanden.*
 much garlic is available

- (67) *Viel zu wenige Vampirjäger wohnen hier.*
 much too few vampire hunters live here

The semantic property of modifiability makes these value judgment Qs in German look like (degree) adjectives, with which they also share the essential morpho-semantic properties, such as word order relative to definite determiners and demonstratives (68), case inflection and number agreement (69), and the (limited) occurrence in predicative position (70).

- (68) *die(se) vielen / wenigen / witzigen Demonstranten*
 the(se) many / few / funny protestors

- (69) 1. *mit vielen* / *wenigen* / *witzigen* *Demonstranten*
 with many_{DAT.PL} / few_{DAT.PL} / funny_{DAT.PL} protestors
2. *der viele Zucker* / *witzige Demonstrant*
 the much sugar / funny protestor
- (70) *Die Demonstranten sind aber wenig(e).*
 the protestors are but few
 ‘The protestors are few, however.’

However, as with numeral expressions, some of the inflectional traits of adjectives appear to be in the process of being lost. For instance, the plural inflection of *wenig* (and *viel*) is optional in colloquial German, whereas gender agreement on *wenig* and *viel* is altogether absent when occurring with mass nouns.

- (71) *Hier sind nur wenig(e) / witzig*(e) Menschen.*
 here are only few / funny people
- (72) 1. *viel(*er) / weiß*(er) Zucker*
 much / white sugar
2. *viel(*e) / sauer*(e) Milch*
 much / sour milk

Because of this, value judgement Qs are sometimes analyzed as quantifier heads in a separate functional projection Q located between D and the NP-level (Löbel 1990).

Semantically, value judgment Qs are ambiguous between an absolute and a proportional reading, as described for English *many* in Partee (1989). The intersective absolute interpretation only considers the absolute number of individuals that are contained in the intersection denoted by the DP-head and the VP-complement, respectively, and specifies that this number is large or small relative to a contextually given standard (again, the same as for degree adjectives; cf. Heim and Kratzer (1998)).

- (73) *Viele Menschen in Pakistan sind auf der Flucht vor den*
 many people in Pakistan are on the flight in front of the
Wassermassen.
 water masses
 ‘Many people in Pakistan are on the run from the masses of water.’
- (74) *Wenige Studenten haben den schweren Test bestanden.*
 few students have the difficult test passed
 ‘Few students passed the difficult test.’

The proportional reading is non-intersective, and says that the number of individuals with both NP and VP properties is less than a contextually given factor multiplied with the number of individuals satisfying the NP but not the VP property. Proportional readings of value judgment Qs are discussed in Section 5.2.3.1. In the presence of a definite determiner, only the absolute reading is available.

- (75) *Die vielen Studenten haben den schweren Test bestanden.*
 the many students have the difficult test passed
 ‘The students were many, and they passed the difficult exam.’
 not: ‘The number of students that passed the exam is large compared to the number of those who did not pass.’

This suggests that the availability of a quantificational proportional reading with value judgment Qs depends on a non-definite DP semantics and/or the possibility of optionally realizing the quantifier in the structural D-position (e.g. after short A-to-D movement) (Pafel 1994, Zimmermann 2003a).

Another, syntactically very different, value judgement quantifier is the word *lauter* (many, but which has another use as a near synonym of only, discussed in Section 5.3.12). *Lauter* is in complementary distribution with determiners, cannot be modified, and does not inflect (Eckardt 2006).

- (76) *Im Wald sind lauter Pfifferlinge.*
 in the forest are many chanterelle mushrooms

In contrast to many other determiners or quantifier words, *lauter* cannot appear without its nominal complement (see Section 5.3.3).

5.2.1.5 Interrogative Quantifiers

Interrogative determiners include *welch-* (which) and *wie viel-* (how many / much).

- (77) *Wie viele Frauen fanden den Film ‘Dirty Dancing’ toll?*
 how many women found the film ‘Dirty Dancing’ good
- (78) *Welche Szene fanden sie am beeindruckendsten?*
 which scene found they at the most impressive
 ‘Which scene did they find the most impressive?’

German also has an ordinal interrogative quantifier *der/die/das wieviel(s)te*:

- (79) *Beim wieviel(s)ten Film bist du eingeschlafen?*
 during.the how.manyest movie have you fallen.asleep
 ‘After how many movies did you fall asleep?’

5.2.1.6 A-Quantifiers

Numerical adverbial quantifiers (*once, twice, ...*) as well as *sometimes* are formed by juxtaposing the (uninflected) determiner with the word *mal*.⁹

- (80) *Man sollte sich die Zähne dreimal am Tag putzen.*
 one should self the teeth three times at the day clean
 ‘You should brush your teeth three times a day.’
- (81) *Manchmal hat Peter grosse Lust auf ein Eis.*
 sometimes has Peter big desire on an ice cream
 ‘Sometimes Peter really wants an ice cream.’

The adverbial quantifiers *often* and *never* can be rendered in one of two equivalent ways; either with a simple lexical item *oft* and *nie*, or by juxtaposing said lexical item with the expression *mals*.¹⁰ Also of this form is *mehrmals* (*multiple times*), which seems the juxtaposition of *mehr* (*more*) with *mals*.

- (82) *Silvana schläft oft(mals) mit offenem Fenster.*
 Silvana sleeps often with open window
 ‘Silvana often sleeps with the window open.’
- (83) *Petra ist noch nie(mals) in New York gewesen.*
 Petra is still never in New York been
 ‘Petra hasn’t ever been to New York.’
- (84) *Tini hat Franzi mehrmals angerufen.*
 Tini has Franzi multiple times called
 ‘Tini called Franzi multiple times.’

Other intersective adverbial quantifiers are *gelegentlich* (*occasionally*), *häufig* (*often*), and *selten* (*rarely*).

⁹ *Mal* is also a noun, with the meaning of *occasion* or *time*.

¹⁰ This expression is not the plural of the noun *Mal*, which is *Male*. Diachronically, the final marker *-s*, which also shows up in the Qs *höchsten-s*, *mindesten-s*, *wenigsten-s*, and *jeweil-s* (see below), can be analyzed as a genitive marker denoting a relation variable (in place of an overt preposition).

5.2.1.7 Negative Existential Quantification: N-Words

As in English, the set of German quantified expressions contains a subclass of n-words the presence of which indicates negative existential quantification (nobody, nothing, etc.). Next to the indefinite n-words (85), which occur as free standing nominal expressions, there is also an n-determiner *kein* (no), which combines with singular or plural count NPs, and mass NPs alike (86).

(85) *niemand* (nobody), *nichts* (nothing), *nirgendwo* (nowhere), *nie* (mals)
(never)

(86) *kein Student* (no student), *keine Studenten* (no students), *kein Zucker*
(no sugar)

Morpho-syntactically, the negative existential determiner *kein* behaves like its positive indefinite counterpart *ein* in terms of inflection and word order (e.g. it precedes numeral expressions).

(87) *Maria hat (k)ein Kind geküsst.*
Mary has (no) / a child kissed.
'Mary kissed no / a child.'

(88) *Maria hat (k)eins geküsst.*
Mary has (none) / one kissed.

(89) *Maria hat keine zwei Bücher gekauft.*
Maria has no two books bought
'Maria didn't buy two books.'

Semantically, there is some evidence to the effect that n-words and the n-determiner should not be analysed as negative existential generalized quantifiers which introduce negation as part of their lexical meaning (e.g. Barwise and Cooper (1981)). Rather, it seems as if n-words are NPIs that signal the presence of a c-commanding covert sentential negation operator.

First, sentences with *kein* allow a 'scope-splitting' reading, which can be thought of in terms of a (semantic) decomposition of *kein* into a (covert) sentential negation part (\neg) and an existential quantification part (\exists) (Jacobs 1980, Penka and von Stechow 2001, Penka 2006). The preferred interpretation of the sentences below is the one in which the universal and modal operator, respectively, intervene between the negation and the existential force of the DP.

(90) *Jeder Arzt fährt keinen Mercedes.*
every doctor drives no mercedes
'It is not the case that every doctor drives a mercedes.' ($\neg < \forall < \exists$)

- (91) *Bill muss keine Wurst essen.*
 Bill must no sausage eat
 ‘It is not the case that Bill must eat a sausage.’ ($\neg < \mathbf{MUST} < \exists$)

Second, anaphoric reference to DPs headed by *kein* is possible if the focus in the antecedent clause is located on an additional adjunct, as shown below.

- (92) *Wer kein Fahrrad [im KELLer]_F hat, hat es auf dem Balkon.*
 who no bicycle in the basement has, has it on the balcony
 ‘If you don’t have a bicycle in the basement, you have it on the balcony.’

The possibility of anaphoric reference in the sentence above could be accounted for on the covert negation analysis in the following manner. Negation being focus-sensitive, it associates with the PP-adjunct, thus negating the existence of a bike in a particular location, but not its existence as such.

Third, sentences containing n-words and the n-determiner pattern with sentences containing the overt sentential negation operator *nicht* in terms of their ability to exceptionally license the cancellation of presuppositions, to the exclusion of morphologically incorporated negations, such as *un-* (in-) and *nicht alle* (not all) which are always presupposition-preserving (Seuren 1991).

- (93) *Peter hat NICHT zu rauchen aufgehört. Er hat noch nie geraucht.*
 Peter has not to smoke stopped He has still never smoked
 ‘Peter hasn’t stopped smoking. He has never smoked.’
- (94) *Niemand hat hier zu rauchen aufgehört. Niemand hat hier je geraucht.*
 noone has here to smoke stopped noone has here ever smoked
 ‘Noone has stopped smoking here. Noone has ever smoked here.’
- (95) *#Nicht alle haben zu rauchen aufgehört. Hier wurde noch nie geraucht.*
 not all have to smoke stopped here became still never smoked
 ‘Not all have stopped smoking here. There was never smoking going on here.’

Fourth, the behaviour of n-words under VP-ellipsis with modal expressions shows that they do not come with negative force by themselves: the elided nominal expressions *nichts* or *keine Brötchen* below are not interpreted with negative force, and their recovery must involve the bare existential NPs *etwas* and *Brötchen*, respectively.

- (96) ... *weil Peter nichts / keine Brötchen essen darf, sondern*
 ... because Peter nothing / no breadrolls eat may, but
 [_{VP} ∅] *muss.*
 must
 ‘... because Peter is not (just) allowed to, but is obligated to eat something / breadrolls.’

Again, the VP-ellipsis patterns follow directly if negation forms no part of the meaning of the elided VP, but comes in as a sentential operator above the VP (as evident in the English paraphrases).

Additional circumstantial evidence for the scope-splitting analysis of n-words/n-determiners as indicating the presence of a covert sentential negation operator comes from earlier stages of German (97) in which the sentential negation operator was still overt (Jäger 2005), and from the fact that colloquial German (98) as well as some of its dialects (99) exhibit negative concord under emphasis (Zimmermann 2011).

- (97) 1. *inti in dougli nisprah ih ni-ouuiht*
 and in darkness NEG.spoke I neg-something
 ‘and in the darkness, I spoke nothing.’
 (Old High German, Tatian, 300, 19)
2. *wann Claudas engunde es im n-icht*
 because Claudas neg.granted it him neg-something
 ‘because Claudas begrudged him it’
 (Middle High German)
- (98) *Wir wollen keine Macht für niemand.*
 we want no power for noone
 ‘We don’t want any power for anybody.’
- (99) *NÜMS / KEEN-EEN hett NIX köfft.*
 nobody / no-one has nothing bought
 ‘Noone bought anything at all.’
 (Low German)

Although it is not at all obvious that *kein* is polymorphemic, a semantic decomposition along the lines suggested above (Jacobs 1980) would fit naturally with a morphological decomposition of *kein* into (the elsewhere unattested) *k-* and *ein*.¹¹ Difficulties for this synchronously bimorphemic view of *kein* abound, and include the fact that *kein* appears on plural and mass NPs, where *ein* is not permitted.

¹¹ This decomposition appears valid historically, where *kein* > *deh* + *ein* (Jäger 2007).

- (100) *Bill hat (*eine) Würste gegessen.*
 Bill has a sausages eaten
 ‘Bill ate sausages.’
- (101) *Bill hat keine Würste gegessen.*
 Bill has no sausages eaten
 ‘Bill didn’t eat any sausages.’
- (102) *Bill hat (*ein) Wasser getrunken.*
 Bill has a water drunk
 ‘Bill drank water.’
- (103) *Bill hat kein Wasser getrunken.*
 Bill has no water drunk
 ‘Bill didn’t drink any water.’

A possible way of accounting for the above facts while holding to the bimorphemic analysis of *kein* might be to appeal to a covert determiner analysis of bare plural and mass terms (as considered in Section 5.2.1.2), which is realized overtly when hosting the *k*- morpheme.

5.2.2 Generalized Universal Qs

5.2.2.1 D-Quantifiers

German has two ways of expressing universal quantification in the nominal domain: *alle* and *jede(r/s)*. While the two elements superficially give rise to the same semantic effects, including presupposing the non-emptiness of their semantic restrictor argument, they differ in interesting morpho-syntactic and semantic ways, suggesting a different analysis for the two items.

Morpho-syntactically, *jede(r/s)* is restricted to combine with singular count NPs (104), whereas *alle* combines only with plural and mass NPs (105).

- (104) 1. *jeder Kellner* (every waiter), *jede Kellnerin* (every waitress), *jedes Kind* (every child)
 2. *#jeder Sand* (every sand),¹² **jede Studenten* (every students)
- (105) 1. *alle Studenten* (all students), *aller Zucker* (all sugar)
 2. **aller Kellner* (all waiter)¹³

¹² This expression can be understood under a type reading – every type of sand.

¹³ In the idiom *aller Anfang ist schwer* (all beginnings are difficult, lit. all beginning is difficult) *alle* combines with the deverbal singular noun *Anfang* (beginning, pl. *Anfänge*).

As demonstrated in Section 5.1 above, the inflectional properties and agreement patterns of *jede(r/s)* are the same as those found with other singular determiner heads, such as definite determiners (*der/die/das* – **the**) and demonstratives (*diese(r/s)* – **this**): *jeder* shows strong gender agreement with the head noun and is overtly marked for case. While the strong inflection pattern is also found on attributive adjectives with indefinite DPs (106.1), *jede(r/s)* differs from ordinary adnominal adjectives in one crucial respect: in combination with an additional adjective, the strong inflection is only found on the universal quantifier (106.2), whereas it is found on both adjectives in (106.3). Again, *jeder* patterns with definite determiners (106.4).

- (106) 1. *ein kluger Kellner* (a clever waiter), *eine kluge Kellnerin* (a clever waitress), *ein kluges Kind* (a clever child)
 2. *jeder kluge(*r) Kellner* (every clever waiter)
 3. *ein schöner kluge*(r) Kellner* (a handsome clever waiter)
 4. *der kluge(*r) Kellner* (the clever waiter)

The data in (106) suggest that the quantifier *jede(r/s)* is not an attributive modifier, but a D-quantifier that is located in the same structural position as the definite determiner (see below for more discussion).

- (107) [_{DP} *jeder* [_{NP} *Kellner*]]

In certain contexts, *jede(r/s)* has a reading like the English *any*. In these contexts, it may be replaced by the determiner *jegliche(r/s)* (*any*).

- (108) *ohne jedes / jegliches Zögern*
 without every / any hesitation
 ‘without any hesitation’

- (109) *Ihm fehlt jede / jegliche Erinnerung.*
 him lacks every / any memory
 ‘He doesn’t remember anything.’

Alle is also marked for case (110), and with mass nouns it shows gender agreement (111.1). In this regard, it behaves like attributive adjectives that show strong inflection in the absence of an overt indefinite determiner (111.2).

- (110) 1. *Peter hat allen_{ACC} / weißen Zucker gegessen.*
 Peter has all / white sugar eaten
 ‘Peter ate all the / white sugar.’
 2. *mit allen_{DAT} / klugen Studenten*
 with all / clever students
 ‘with all the / clever students’

- (111) 1. *alle Milch* (all_{NOM.F} milk), *aller Zucker* (all_{NOM.M} sugar), *alles Gold*
(all_{NOM.N} gold)
2. *saure Milch* (sour_{NOM.F} milk), *weißer Zucker* (white_{NOM.M} sugar),
weißes Gold (white_{NOM.N} gold)

In combination with subsequent adjectives, *alle* and the adjective show the same inflection (112.1), quite unlike what was observed for *jeder* above (illustrated again in (112.2)).

- (112) 1. *aller guter Rat* (all good advice)
2. *jeder gute(*r) Rat* (every good suggestion)

In addition, there is also an uninflected variant *all*, which resembles the English *all* in combining with full plural count or mass DPs headed by a definite determiner. In this case, *all* seems to function as a modifier on the DP, as suggested for English in Brisson (1998, 2003):

- (113) *All die Milch (hier) ist gespendet worden.*
all the milk (here) is donated became
'All the milk here was donated.'
- (114) *Ich habe all die Studenten (hier) | all meine Studenten*
I have all the students (here) all my students
eingeladen.
invited
'I invited all of the students here/ all of my students.'

The modifying nature of *all(e)* is supported by its diachronic origin from an attributive modifier meaning *whole* (Haspelmath 1995).

Unlike English *all* (Matthewson 2001), the choice between inflected *alle* and uninflected *all die/der* (all the) does not seem to correlate with a semantic difference between episodic readings and generic or kind readings. Rather, the combination of *all* + DP seems to be preferentially used deictically in presentational contexts. Thus, there is a clear difference in meaning between the two alternative answers to the question below. See Pafel (1994) for additional morpho-syntactic differences between the two variants.

- (115) How many students passed the exam?
1. *Alle Studenten haben den Test bestanden.*
all students have the test passed
2. *All die Studenten #(hier) haben den Test bestanden.*
all the students (here) have the test passed

The observed parallels with attributive adjectives and the diachronic facts suggest the structures below for the two types of universal *all(e)* in German.

- (116) 1. [_{DP} ∅ [_{NP} *alle* [_{NP} *Milch*]]]
 2. [_{DP} *all* [_{DP} *die* [_{NP} *Milch*]]]

In (116.1), the DP is headed by a covert determiner, as considered for other instances of plural and mass expressions in Section 5.2.1.2, whereas the quantifier *alle* modifies the head NP in a lower structural position.¹⁴

As for the morphemic structure of the universal Qs, *alle* is clearly monomorphemic, whereas superficially, *jeder* might be thought to be a compositum of *je* (each) and the definite determiner (*der*), with a constructionally determined meaning along the lines of each of the. While perhaps tempting, there are a number of serious problems a proponent of such a morphological decomposition would need to overcome. First, the nominative neuter (*jedes*) and feminine (*jede*) forms do not contain the nominative neuter (*das*) and feminine (*die*) definite determiners. Second, any analysis along these lines will have to formulate a convoluted statement of N' deletion, as *jeder* can function as a stand-alone argument of a predicate, whereas *der* cannot (unless it is interpreted as a referential pronoun). Finally, the proposed rendering of *jeder* as akin to each of the cannot be taken too seriously, as partitive each of the requires a plural expression as its complement, whereas universal *jeder* demands a singular count NP. We conclude that *jede(r/s)* is not complex from a synchronous perspective, independent of its diachronic origin,¹⁵ but see Leu (2009) for a recent analysis of synchronous *jeder* as structurally complex. This conclusion is supported by the fact that *jede(r/s)* can be optionally preceded by the indefinite determiner *ein*, as illustrated below (Pafel 1994, Roehrs to appear, Kallulli and Rothmayr 2008). While this usage may have a slightly archaic tinge to it, it is certainly still productive, in particular with genitive attributes of complex DPs.

- (117) *ein jeder Engel ist schrecklich.*
 an every angel is terrible
 'Every angel is terrible.' (Rilke, Erste Duineser Elegie)

- (118) *im Leben eines jeden Menschen*
 in the life of an every person
 'in everyone's life'

¹⁴ Alternatively, one could assume the D-projection to be absent, or head movement of the modifying universal Q head into the D-projection.

¹⁵ The historical forms are OHG *eo-hwedar* / *io-wedar* → MHG *ie-weder* (Grimm and Grimm 1854–1960).

As part of this complex construction, *jede(r/s)* does not normally show the same inflectional behaviour as when standing in isolation. Instead, it appears to exhibit the inflectional patterns of attributive adjectives in indefinite DPs (119).

- (119) 1. *jedem Studenten*
 every student
 (dative)
2. *einem jeden Studenten*
 an every student
3. *einem klugen Studenten*
 a clever student

Still, one might maintain that *jede(r/s)* does not have the structural status of an ordinary attributive adjective in the *ein jeder* construction. Instead, it forms a complex quantificational D-head together with the indefinite article (see Pafel (1994) and also Section 5.2.4 on complex quantifier formation).

- (120) [_{DP} [_D *ein jeder*] NP]

There are two kinds of evidence for the complex head analysis. First, *jede(r/s)* optionally *does* inflect like its free-standing counterpart even in the *ein jeder* construction (121). Second, when followed by an attributive adjective, *jede(r/s)* and the adjective do not show the same inflection (122). In this, *ein jeder* behaves like free-standing *jeder* and other determiner-heads (see above) that require a following adjective to inflect according to the weak paradigm.

- (121) 1. *eines jede-n/-s Mannes*
 an every man
2. *eines gute-n/*-s Mannes*
 a good man
- (122) 1. *ein jeder gute*(-r) Baum*
 an every good tree
2. *ein neuer gute*(-r) Baum*
 a new good tree

While the inflection facts are not entirely clear, and seem subject to interspeaker variation (see Roehrs (to appear)), it appears that the addition of the singular indefinite determiner *ein* serves to stress the inherent semantic nature of *jeder* as a distributive quantifier; see also Kallulli and Rothmayr (2008) for additional empirical arguments.

Semantically, the two universal quantifiers *alle* and *jede(r/s)* behave like their English counterparts *all* and *each/every* in terms of their (non-)inherent distributivity; see Vendler (1962) and Gil (1995) for much relevant discussion:

the singular count quantifier *jede(r/s)* is lexically specified as being distributive, whereas the plural and mass quantifier *alle* resembles ordinary plural DPs in not being specified as [+/-] distributive. As a result of its lexical specification, *jede(r/s)* cannot combine with inherently collective predicates, whereas *alle* can.

- (123) 1. #*Jeder Soldat umzingelte die Stadt.*
 every soldier surrounded the city
 2. #*Jeder Student wog insgesamt 500kg.*
 every student weighed altogether 500kg
- (124) 1. *Alle Soldaten umzingelten die Stadt.*
 all soldiers surrounded the city
 2. *Alle Studenten wogen insgesamt 500kg.*
 all students weighed altogether 500kg

Since *alle* is not lexically specified for distributivity, it is free to occur with inherently distributive predicates as well. In the same way as with ordinary plural DPs, the distributive interpretation may come about through the workings of a covert distributivity operator (Link 1983).

- (125) *Jeder Student hat geschlafen.*
 every student has slept
- (126) *Alle Studenten haben geschlafen.*
 all students have slept

Finally, with ambiguous predicates, the presence of *jede(r/s)* disambiguates the predicate towards the distributive interpretation, whereas presence of *alle* leaves the matter subject to contextual resolution (Gil 1995).

- (127) *Jeder Student trug drei Koffer.*
 every student carried three suitcases
 ‘Each student carried three suitcases’
 not: ‘The students carried three suitcases together.’
- (128) *Alle Studenten trugen drei Koffer.*
 all students carried three suitcases
 ‘Each student carried three suitcases’
 ‘The students carried three suitcases together.’

The inherent distributivity of *jeder* suggests that it builds proper generalized quantifiers of type $(et)t$, whereas *alle*-DPs denote sets of individuals or plural

individuals (see Heim and Kratzer (1998) for discussion). Since *jeder*-DPs do not denote such pluralities, they cannot serve as the subject of collective predications. Furthermore, the treatment of *jeder*-DPs as generalized quantifiers also accounts for the fact that DP headed by *jeder* can semantically bind singular pronouns, whereas *alle*-DPs cannot. The possibility of anaphoric reference with the plural pronoun *sie* below could be accounted for under this perspective as coreference with the plural individual denoted by the *alle*-DP.

- (129) *Jeder Student hat versprochen, dass er kommt.*
 every student has promised that he comes
- (130) *Alle Studenten haben versprochen, dass sie kommen.*
 all students have promised that they come

Another nominal strategy of expressing universal quantification is the use of so-called distance-distributive quantifiers, which will be discussed in Section 5.3.1.

5.2.2.2 A-Quantifiers

Universal adverbial quantifiers include *immer* and *stets* (always). *Stets* has as adjectival counterpart *stetig* (continuous/continual), which share the same slightly archaic adjective *stet* (constant), whereas the adjectival form **immerig* is not in the standard language.

- (131) *In Hamburg regnet es immer.*
 in Hamburg rains it always
 ‘It always rains in Hamburg.’
- (132) *Er war stets hilfsbereit.*
 he was always ready to help
 ‘He was always ready to lend a helping hand.’

Additionally, the suffix *-s* may be added to the word for a day of the week to derive an adverb with a universal meaning.

- (133) *Ich kam am Donnerstag.*
 I came at the Thursday
 ‘I came on Thursday.’
- (134) *Ich kam donnerstags.*
 I came Thursdays
 ‘I came on Thursdays.’

5.2.3 Proportional Qs

5.2.3.1 D-Quantifiers

Most in German is not monomorphemic, but is rather composed of a definite determiner followed by the appropriately inflected adjective *meist*, which is historically the superlative form of *mehr* (more). As in English, *d- meist-* in German selects either a plural count noun or a mass noun complement. Despite the presence of bare plurals in German, *meist* cannot modify a noun without being immediately preceded by the definite determiner.

(135) *Leute aus Hamburg verdienen *(das) meiste Geld.*
 people out Hamburg earn the most money
 ‘People from Hamburg make the most money.’

(136) **(Die) meisten Deutschen essen täglich Wurst.*
 the most Germans eat daily sausage
 ‘Most Germans eat sausage every day.’

Given that the proportional meaning of *die meisten NPs* is not derivable in a straightforward way from the meaning of its parts (i.e. from the superlative adjective *meisten* and the definite determiner *die*), we propose that *die meisten* forms a complex quantifier in D, with the obligatory presence of the definite determiner being due to morpho-syntactic factors, namely the superlative form of the adjective. In simple instances such as (136) above, *die meisten* compares the number of the NP-individuals (here: Germans) that have the property of the VP (here: eating sausage on a daily basis) with the number of NP-individuals that don't. In more complex cases, presence of *die meisten* indicates that the number of NP-individuals with the VP property is larger than or equal to the number of NP individuals with any alternative property that is relevant and salient in the given context (here: voting for other parties). Consider the real world election example below for an illustration.

(137) CONTEXT: Election outcome: CDU = 33%; SPD = 25%; Greens = 12%;
 Liberals = 13%; Left = 7%

Die meisten Wähler haben für die CDU gestimmt.
 the most voters have for the CDU voted
 ‘The number of voters that voted CDU is larger than the number of
 voters that voted for any other party.’

As already mentioned in Section 5.2.1.4, indefinite DPs containing the value judgement Qs *viel* and *wenig* can also receive proportional interpretations. For instance, (138) is felicitous in a context in which eight of ten student takers of the

exam passed it, even though eight does not normally qualify as a large number. Conversely, (139) is appropriate in a situation where 20% of the German voters (ca. 9 million) cast their vote for the social democrats (SPD) in parliamentary elections.

(138) *Viele Studenten haben die Prüfung bestanden.*
many students have the exam passed

(139) *Wenige Wähler gaben ihre Stimme der SPD.*
few voters gave their vote to the SPD

As described for English *few* and *many* in Herburger (2000), proportionally interpreted Qs in German are focus-sensitive: the truth conditions of the sentences below differ.

(140) *Viele Deutsche haben den NoBELpreis gewonnen.*
many Germans have the Nobel prize won
'The number of German Nobel prize winners is large compared to the German winners of other things.'

(141) *Viele DEUTsche haben den Nobelpreis gewonnen.*
many Germans have the Nobel prize won
'The number of German Nobel prize winners is large compared to the number of Nobel prize winners from other countries.'

5.2.3.2 A-Quantifiers

The form *meist* can be used as an adverb meaning **mostly**. The related *meistens* (**most of the time**) has a similar meaning, however the former can be predicated of an adjective to denote a property that can hold of an individual at a given moment or stretch of time.

(142) *Ich komme meist(ens) Abends nach Hause.*
I come mostly evenings to home
'I get home mostly in the evening.'

(143) *Der Himmel ist heute meist bewölkt.*
The sky is today mostly cloudy
'The sky is for the most part cloudy today.'

(144) *Der Himmel ist heute meistens bewölkt.*
the sky is today most of the time cloudy
'Today, the sky has been cloudy most of the time.'

5.2.4 Morphosyntactically Complex Qs

Number words can be modified with the comparative forms of *wenig* (little) and *viel* (much), *weniger* and *mehr*, respectively. In this construction, as in comparative constructions in general (see Section 5.3.7), the preposition *als* (than) introduces the numeral. Despite the fact that *als*-clauses in comparative constructions can normally be postposed, this is not possible in modified numeral constructions.

(145) *Mehr als fünf Leute sind gekommen.*
 more than five people are come
 ‘More than five people came.’

(146) *Weniger als drei Leute sind gestorben.*
 fewer than three people are dead
 ‘Less than three people died.’

The respective duals of the above quantifiers are *höchstens* (at most) and *mindestens* (at least). The former is derived from *höchsten*, which is the superlative form of the adjective *hoch* (high). The latter has the same shape, but the adjective underlying the superlative form is no longer in common usage, although vestiges remain in nominal compounds such as *Minderheit* (minority), and verbs such as *vermindern* (lessen). The word *mindestens* leads a double life as a (similarly translated) adverb. Both words directly modify noun phrases (without the need for *als*).

(147) *Höchstens fünf Leute sind gekommen.*
 at most five people are come
 ‘At most five people came.’

(148) *Mindestens drei Leute sind gestorben.*
 at least three people are dead
 ‘At least three people died.’

Bounding both ends of the number line can be done with the expressions *genau* (exactly), *ungefähr/circa* (approximately), and the preposition *zwischen* (between). *Genau* and *ungefähr* are also adverbs.

(149) *Genau vier Blumen blühen.*
 exactly four flowers bloom

(150) *Ich habe ungefähr achtzig Kekse gegessen.*
 I have approximately eighty cookies eaten
 ‘I ate about eighty cookies.’

- (151) *Für Kaffee gebe ich zwischen fünfzig und siebzig Dollar im Monat aus.*
 for coffee give I between fifty and seventy dollars in the month out
 ‘I spend between fifty and seventy dollars a month on coffee.’

All of the above quantifiers can also modify proportion denoting expressions such as *Hälfte* (half), *Viertel* (quarter), and *Mehrheit* (majority). The preposition *von* can be used with numerals to build a proportional quantifier.

- (152) *Sieben von zehn Künstlern verhungern.*
 seven from ten artists starve
 ‘Seven out of ten artists starve to death.’

Other proportional quantifiers take the form of DPs, which can be modified by another DP in the genitive case.

- (153) *zehn Prozent (der Menschen)*
 ten percent (of the people)
- (154) *zwei Drittel (meiner Studenten)*
 two thirds (of my students)
- (155) *eine grosse Mehrheit (der Bevölkerung)*
 a large majority (of the populace)
- (156) *eine kleine Minderheit (der Regierungschefs)*
 a small minority (of the heads of state)
- (157) *ein Zehntel (der Griechen)*
 a tenth (of the greeks)
- (158) *ein kleiner Prozentsatz (der EU Bürger)*
 a small percentage (of the EU citizens)
- (159) *welcher Anteil (der Fleischer)*
 which proportion (of the butchers)

The quantifiers *viel* and *wenig* cannot only be (as mentioned in Section 5.2.1.4) modified by *zu* (too), *so* (such), and *sehr* (very), but also by adjectives such as *überraschend* (surprisingly) and, at least for *viel*, *(un)endlich* ((in)initely). (In)sufficiency can be expressed with *(nicht) genügend* ((not) enough).

- (160) *Überraschend wenig Zahlen werden von genügend Leuten in endlich vielen Vorträgen erwähnt.*
 surprisingly few numbers become from enough people in
 finitely many presentations mentioned
 ‘Surprisingly few numbers are mentioned by enough people in finitely many talks.’

Exception phrases in German can be built with *außer* (except), *abgesehen von* (apart from), *bis auf* (save for), or *mit Ausnahme von* (with the exception of). These phrases can be separated from the quantifiers they modify.

- (161) *Jeder abgesehen von John ist gekommen.*
 everyone apart from John is come
 ‘Everyone except John came.’
- (162) *Alle mit Ausnahme von zwei(en) wurden verhaftet.*
 all with exception from two became arrested
 ‘All but two were arrested.’
- (163) *Die meisten außer den sehr billigen wurden behalten.*
 the most except the very cheap became kept
 ‘Most of them were kept, apart from the very cheap ones.’
- (164) *Keiner starb außer John.*
 noone died except John

Related in meaning, though not in form, are *jede(r/s) zweite* (every other) and quantifiers modified by *fast* (almost).

- (165) *Jedes zweite Auto ist kaputt.*
 every second car is broken
 ‘Every other car is busted.’
- (166) *Fast alle Politiker sind korrupt.*
 almost all politicians are corrupt

Partitives have the form of a determiner followed by a genitive DP. If the determiner would select a singular NP, it shows agreement with the gender of its genitive complement (168), though it may diverge from this in number.

- (167) (Nicht) *alle dieser Blumen schenke ich dir.*
 not all of these flowers give I to you
 ‘I give to you all of these flowers.’

- (168) 1. *Ich helfe jedem dieser Männer.*
 I help every of these men
 ‘I will help every one of these men.’
2. *Ich helfe jeder dieser Frauen.*
 I help every of these women
 ‘I will help every one of these women.’

While the agreement facts could be accounted for theoretically by postulating that partitive constructions of the form *D DP_{gen}* derive from structures of the form *D NP₁ [_{DP} D NP₂]* by obligatory deletion of NP₁ (under identity with NP₂), any analysis must deal with the fact that material from the hypothesized NP₁ may not be stranded (as is otherwise common with N-bar deletion), with the exception of *einzel*n (single) following *jede(r/s)*.

- (169) **Viele roten dieser Blumen schenk ich dir.*
 many red of these flowers give I you
 intended: ‘I give to you many red flowers from among these flowers.’
- (170) *Ich helfe jedem einzelnen dieser Männer.*
 I help every single of these men
 ‘I will help every single one of these men.’

In contrast to other quantifiers, *alle* does not appear in the partitive construction when its complement is a possessive noun phrase. Instead, *alle* combines directly with this expression.

- (171) *alle meine Enten*
 all my ducks
- (172) *jede/manche/keine/viele/wenige/die meisten/zwei meiner Enten*
 every/some/none/many/few/the most/two of my ducks

Numerals and *beide* (both) may also appear inside of a possessive determiner (with a corresponding presuppositional difference).

- (173) *meine beiden Enten*
 my both ducks
 ‘both of my ducks’
- (174) *meine zwei Enten*
 my two ducks

Boolean compounds of quantifiers can be made, though only certain quantifiers can be overtly negated (with *nicht* (not)).

- (175) *nicht alle*
not all
- (176) *nicht jeder*
not every
- (177) *nicht viele*
not many
- (178) *nicht mehr/weniger als*
not more/fewer than

Negation can combine with numerals, and other DPs, but this requires a contrastive reading. Numerals can combine with *nicht (ein)mal* (not even).

- (179) *nicht BEIDE*
not both
- (180) *nicht DIE zwei*
not the two
'not THOSE two'
- (181) *nicht ZWANZIG*
not twenty
- (182) *nicht (ein)mal zwanzig*
not once twenty
'not even twenty'
- (183) *nicht die MEISTEN*
not the most
'not most'

Certain quantifiers cannot be directly combined with negation at all.

- (184) **nicht ein*
not a
instead: *kein*

Coordination of quantifiers can be expressed with *und* (and), *aber* (but), and *sowohl ... als auch* (both ... and), and disjunction with *(entweder ...) oder* ((either ...) or). When conjoining quantifiers with incompatible selectional restrictions ungrammaticality results.

- (185) *Mindestens zwei und nicht mehr als zehn Prozent der Hunde bellen täglich.*
 at least two and not more than ten percent of the dogs bark daily
- (186) *Die meisten, aber nicht alle, Mädchen mögen tanzen.*
 the most but not all girls like dance
 ‘Most but not all girls like to dance.’
- (187) *Entweder sehr wenige oder sehr viele Besucher kommen zum Konzert.*
 either very few or very many visitors come to the concert
- (188) **Die meisten_{pl}, aber nicht jedes_{sg}*
 the most but not every

A-quantifiers also have a boolean structure.

- (189) *Normalerweise aber nicht immer wähle ich FDP.*
 normally but not always vote I FDP
 ‘I normally but not always vote FDP.’

5.3 Selected Topics

We begin by considering dissociations between quantifiers and NPs that they are associated with – binominal *each* (Section 5.3.1) and floated quantifiers (Section 5.3.2). We then turn to quantifiers occurring without overt NPs in Section 5.3.3, and to noun classifiers in Section 5.3.4. Section 5.3.5 deals with existential sentences in German, and discusses restrictions on the DPs that can appear in them. Section 5.3.6 discusses relations between *wh*-phrases, universal and existential quantification. Sections 5.3.7 and 5.3.8 introduce quantifiers of multiple arguments, and an NPI licensed by semantically decreasing DPs, respectively. Sections 5.3.9, 5.3.10, and 5.3.11 discuss the semantic import of multiple quantificational DPs as arguments to a single predicate. Finally, Section 5.3.12 deals with German translations of *only*.

5.3.1 *Distributive Numerals and Binominal Each*

As mentioned in Section 5.2.2.1, German has another nominal strategy of expressing universal quantification, namely by means of the distance distributive quantifier *je(wils)* in (190), which is comparable to English binominal *each* (Safir and Stowell 1988, Zimmermann 2002a, b).

- (190) *Die Jungen haben je(weils) drei Würstchen gekauft.*
 the boys have each three sausages bought
 ‘The boys bought three sausages each.’
- (191) *Die Jungen haben drei Würstchen gekauft.*
 the boys have three sausages bought
 ‘The boys bought three sausages.’
- (192) *Die Jungen haben insgesamt drei Würstchen gekauft.*
 the boys have in total three sausages bought
 ‘The boys bought three sausages in total.’

The full form *jeweils* is morphologically complex, and consists of the quantifying expression *je* and the form *weil-s* (time – see footnote 11). Unlike the adnominal universal quantifiers in Section 5.2.2.1, *jeweils* does not form a constituent with the plural expression denoting its semantic restriction, but rather with the indefinite (numeral) expression to its right. (See Zimmermann (2002a, b) for extensive discussion of the distribution and syntactic constituency of distance-distributive elements, as well as for a compositional semantics for such elements.) Semantically, the presence of *jeweils* disambiguates in favor of distributivity the interpretation of sentences which otherwise would be ambiguous between a distributive interpretation and a collective one (see (191) and (192)). It does so by distributing the denotation of the indefinite (numeral) expression, the distributive share, over the denotation of the plural expression, the distributive key. Conversely, the collective, or rather cumulative, interpretation can also be expressed overtly by means of the expression *insgesamt* (in total).

A major difference between German *jeweils* and English binominal *each* consists in the fact that the *je(weils)*-constituent need not be c-commanded by the DistKey plural expression.

- (193) *Je(weils) zwei Offiziere begleiten die Ballerinas.*
 each two officers accompany the ballerinas
 ‘The ballerinas are being accompanied by two officers each.’
 ‘Each time, two officers accompany the group of ballerinas.’

A second major difference concerns the fact that *jeweils* does not require a plural clausemate expression at all. In such cases, it distributes over a (frequently implicit) plurality of events, as shown in (194). Distribution over events, or situations, also accounts for cases in which there is only a singular expression, as in (195).

- (194) *Je(weils) drei Ballerinas wurden begleitet.*
 each three ballerinas became accompanied
 ‘Three ballerinas were accompanied each time.’

- (195) *Je(weils) zwei Bauern füttern einen Esel.*
 each two farmers feed a donkey
 ‘The donkeys are being fed by two farmers each.’

Distribution over events is mandatory for adverbial instances of *jeweils*, in which case the short form *je* is illicit.

- (196) *Die Jungen haben je*(weils) gewonnen.*
 the boys have each won
 ‘The boys won each time.’
 (not: ‘Each boy won.’)

Related to *jeweils* is the adjective *jeweilig* (respective).

- (197) *Die Männer haben mit ihren jeweiligen Frauen getanzt.*
 the men have with their respective wives danced
 ‘The men danced with their respective wives.’

5.3.2 Floating Quantifiers

The quantifiers *alle*, *jede(r/s)* and *beide* can be associated with definite count DPs (not mass DPs (198)) elsewhere in the clause. The associated DP must be either a c-commanding subject, direct, or indirect object (no objects of prepositions, possessors, etc.). The floated quantifier bears the same case as its associated DP – in (201) the floated quantifier *allen* is in the dative case, as is its associate *den Mädchen* – unless the associate DP is the controller of the clause in which the floated quantifier is located (e.g. (202) adapted from Giusti (1991), where *den Dienern* is dative, but the floated quantifier is non-dative).

- (198) 1. *Gestern wurde aller Zucker gegessen.*
 yesterday became all sugar eaten
 2. **Der Zucker wurde gestern aller gegessen.*
 the sugar became yesterday all eaten
- (199) *Die Mädchen haben mir alle ein Buch gegeben.*
 the girls have me all a book given
 ‘The girls all gave me a book.’
- (200) *Die Bücher habe ich alle den Mädchen gegeben.*
 the books have I all the girls given
 ‘I gave the girls all of the books.’
- (201) *Den Mädchen habe ich alle*(n) ein Buch gegeben.*
 the girls have I all a book given
 ‘I gave all the girls a book.’

- (202) *Der König befahl den Dienern alle Flöte zu spielen.*
 the king ordered the servants all flute to play
 ‘The king ordered his servants to all play the flute.’

As noted by Büring (1994), floated quantifiers cannot follow indefinite arguments (203, 205), but can definite ones (204, 206).

- (203) *Die Geschenke hat der Lehrer (alle) einem Clown (*alle) gegeben.*
 the presents has the teacher (all) a clown (all)
 given
 ‘The teacher gave all the presents to a clown.’
- (204) *Die Geschenke hat der Lehrer (alle) den Kindern (alle) gegeben.*
 the presents has the teacher (all) the children (all)
 given
 ‘The teacher gave all the presents to the children.’
- (205) *Die Geschenke hat (alle) ein Lehrer (*alle) gekauft.*
 the presents has (all) a teacher (all) bought
 ‘A teacher bought all the presents.’
- (206) *Die Geschenke hat (alle) der Lehrer (alle) gekauft.*
 the presents has (all) the teacher (all) bought
 ‘The teacher bought all the presents.’

5.3.3 *Bare Qs*

Bare Quantifiers can productively function as arguments (i.e. N-bar ellipsis is generally possible).

- (207) *Kevin hat drei (Rosinen) gefunden.*
 Kevin has three raisins found
 ‘Kevin found three raisins.’
- (208) *Die meisten (Singles) flirten online.*
 the most (singles) flirt online
- (209) *Fast jeder (Student) außer höchstens drei kam.*
 almost every student except highest three came

They cannot, in general, function as predicates. A possible exception is *alle* (all), which in predicative position means *empty* or *used up*.

- (210) *Die Milch ist alle.*
 the milk is all
 ‘The milk (container) is empty.’

In certain contexts, however, a larger variety of quantifiers may appear alone post-copula.

- (211) *Das sind zwei.*
 that are two
 ‘That’s two.’

- (212) *Die Spartaner waren viele.*
 the spartans were many

- (213) *Die Leute hier sind alle (die ich bekommen konnte).*
 the people here are all (the I get could)
 ‘The people here are all I could get.’

It is not clear whether these cases should be treated as bare quantifiers being used predicatively, or as identity statements involving bare quantifiers as arguments. Either way, it seems quite a heterogenous class of quantifiers.

The *wh*-determiner *welche* (which) can be used existentially (see also Section 5.3.6), but only as a bare quantifier in anaphoric contexts. It is in complementary distribution with bare *ein*, which occurs in singular count environments.

- (214) Q: *Wo sind die Schraubenzieher?*
 where are the screwdrivers
 A: *Im Schrank gibt es welche / einen.*
 in the cupboard gives it which / one
 ‘There’s some / one in the cupboard.’

- (215) Q: *Gibt es Zucker?*
 gives it sugar
 ‘Is there any sugar?’
 A: *Im Schrank gibt es welchen.*
 in the cupboard gives it which
 ‘There’s some in the cupboard.’

5.3.4 Mass Quantifiers and Noun Classifiers

German does not have classifiers in general, although it does have ways of imposing units of measurement on mass nouns. This is done by juxtaposing a count noun with the mass term, as per the below.

(216) *ein Kopf Salat*
a head lettuce

(217) *ein Löffel Brei*
a spoon porridge

The relation between the two nouns is not one of compounding (as in (219)), as both retain a primary stress.

(218) *eine TONne MÜLL*
a barrel trash

(219) *eine MÜLLtonne*
a trash barrel
'a trash can'

However, the count noun 'classifier' doesn't always pluralize. Only grammatically feminine classifiers like *Scheibe* (slice), as in (220), must, whereas non-feminine ones like *Kopf*, *Löffel*, *Meter* (meter) and *Blatt* (leaf), need not.¹⁶

(220) 1. *eine Scheibe Brot*
a piece bread
2. *drei Scheibe*(n) Brot*
three pieces bread

(221) 1. *ein Blatt Papier*
a leaf paper
'a piece of paper'
2. *drei Blatt/Blätter Papier*
three leaf/leaves paper
'three pieces of paper'

In some cases, there can be a semantic difference between pluralized and non-pluralized forms.

(222) *drei Stück Wurst*
three piece sausage
'three sausages'

¹⁶ This generalization is due to Manfred Krifka. Other pluralizing feminine classifiers are *Tonne* (barrel), *Kanne* (can), *Tasse* (mug), as well as the old measure nouns *Spanne* (span) and *Elle* (yard).

- (223) *drei Stücke Wurst*
 three pieces sausage
 ‘three sausages’
 ‘three pieces of sausage’

The count noun classifier does inflect for case, when appropriate.

- (224) *eines Glas*(es)*
 of a glass
- (225) *eines Glas*(es) Wein*
 of a glass wine

Furthermore, the mass noun can be modified by adjectives, which inflect for case appropriate to the whole DP, but for gender appropriate to the mass noun. When so modified, the mass noun also shows case inflection (compare (225) and (230)).

- (226) *Ein Kopf grüner Salat liegt da.*
 a head green lettuce lies there
- (227) *Einen Kopf grünen Salat habe ich gegessen.*
 a head green lettuce have I eaten
 ‘I ate a head of green lettuce.’
- (228) *Ein Glas teurer Wein steht dort.*
 a glass expensive wine stands there
- (229) *Ein Glas teuren Wein habe ich getrunken.*
 a glass expensive wine have I drunk
 ‘I drank a glass of expensive wine.’
- (230) *Wegen eines Glases teuren Wein*(s) bin ich bis nach
 because of of a glass expensive wine am I until to
 Hamburg gefahren.*
 Hamburg driven
 ‘Because of a glass of expensive wine, I drove up to Hamburg.’

5.3.5 Existential Sentences

German has two constructions which have been characterized as existential constructions (Czinger 2002). In the first, the verb is *geben* ‘to give’, and in the second, *sein* ‘to be’.

(231) *Es gibt einen Mann im Garten.*
 it gives a man in the garden
 ‘There is a man in the garden.’

(232) *Es ist ein Mann im Garten.*
 it is a man in the garden
 ‘There is a man in the garden.’

Both constructions have a semantically empty *es* ‘it’ subject, but the nature of this element differs across these constructions. In the *geben* case, the *es* remains overt regardless of whether or not it occupies the prefield, the pivot noun phrase receives the accusative case, and does not agree with the finite verb (which surfaces in the third person singular, appropriate for agreement with *es*).

(233) **Ein / Einen Mann gibt *(es) im Garten.*
 a.NOM / a.ACC man gives (it) in the garden
 ‘There is a man in the garden.’

In the *sein* construction on the other hand, the *es* may appear only in the prefield position, and only in main clauses. In addition, the ‘pivot’ noun phrase receives nominative case, and triggers agreement on the finite verb.

(234) *Im Garten ist (*es) ein / *einen Mann.*
 in the garden is (it) a.NOM / a.ACC man
 ‘There is a man in the garden.’

The *sein* construction seems to be a species of the broader transitive expletive construction, in which an expletive *es* occupies the prefield of a (prototypically transitive) clause.

(235) *Es haben drei Ratten die Katze gefressen.*
 it have three rats the cat eaten
 ‘Three rats ate the cat.’

(236) *Gefressen haben (*es) drei Ratten (*es) die Katze (*es).*
 eaten have (it) three rats (it) the cat (it)

Both co-intersective and proportional DPs can occur in the pivot position of both types of sentence.

(237) *In welchem Land gibt es die meisten Politikerinnen?*
 in which country gives it the most female politicians
 ‘Which country has the most female politicians?’

- (238) *Es gibt alle Spielgeräte auf diesem Spielplatz.*
 it gives all play equipments on this playground
 ‘This playground has all types of play equipment.’
- (239) *Es gibt jedes Sternzeichen ungefähr gleich oft.*
 it gives every astrological sign approximately equal often
 ‘Each astrological sign is approximately equally likely.’
- (240) *Es sind die meisten dieser Sätze sorgfältig ausgedacht.*
 it are the most of these sentences carefully thought out
 ‘Most of these sentences have been carefully thought out.’
- (241) *Es sind alle Welpen vergeben.*
 it are all puppies given away
 ‘All the puppies have been given away.’
- (242) *Es ist jede Schwangerschaft anders.*
 it is every pregnancy different
 ‘Every pregnancy is different.’

Despite this apparent unselectivity, there do seem to be restrictions on the nature of the quantifier in the pivot position in such constructions. Among the *geben*-sentences, sentence (238) has only a type reading, and (239) can also be construed in these terms (each type of astrological sign). The *sein*-sentences can be argued not to be true existential sentences, as their predicates are (not *sein* (be) but) *ausgedacht sein* (to have been thought out), *vergeben sein* (to have been given away), and *anders sein* (to be different). Indeed, uncontroversially expletive sentences (i.e. with locative codas) corresponding to (240)–(242) are difficult to obtain. Sentence (237), on the other hand, seems to remain a real counter-example to the proposition that only intersective DPs can appear (without a type reading) in the pivot position of an expletive sentence.

5.3.6 Relations Between Lexical Universal, Existential and Interrogative Pronouns

The lexical interrogative pronouns (with the possible exception of *warum* (why)) can, when immediately followed by *immer* (always), be used to build free relatives with a universal meaning.

- (243) *Mary küsst wen immer sie sieht.*
 Mary kisses who always she sees
 ‘Mary kisses whoever she sees.’

- (244) *Bill trinkt was immer vor ihm steht.*
 Bill drinks what always before him stands
 'Bill drinks anything you put in front of him.'
- (245) *Bill befindet sich wo immer es was zu trinken gibt.*
 Bill finds himself where always it what to drink gives
 'Bill is there, wherever there is something to drink.'
- (246) *Bill trinkt wann immer er wach ist.*
 Bill drinks when always he awake is
 'Bill drinks whenever he is awake.'
- (247) *Wie immer du es nennen magst.*
 how always you it call like
 'However you would like to call it.'

All wh-phrases (not just lexical ones) can be used productively to build universal-like phrases by putting them in the frame:

WH *auch immer*

In contrast to the free relatives above (without *auch*), these phrases needn't contain a relative clause, and sometimes cannot.

- (248) *Mary küßt wen auch immer (sie sieht).*
 Mary kisses who also always she sees
 'Mary kisses just anyone she sees.'
- (249) *Mary hilft welchem Tier auch immer (*sie sieht).*
 Mary helps which animal also always she sees
 'Mary helps just any animal (that she sees).'

If unstressed, the lexical interrogative pronouns *wer* (who), *was* (what), and (to a lesser extent) *wo* (where) can be, and commonly are, used as existentials. All wh-words with the exception of those denoting *why* (*warum*, *weshalb*) can be prefixed with *irgend* to form an existential. (The genitive form of *irgendwer* (*irgendwessen*) is not in common use.) The resulting phrases can be stressed.

- (250) *Bill hat (irgend)wen gesehen.*
 Bill has any-whom seen.
 'Bill saw someone (or other).'
- (251) *Die Kinder haben Saft (irgend)wohin geschüttet.*
 the children have juice whither spilled
 'The Children spilled juice somewhere (or other).'

- (252) *Bill hat *(irgend)welche Flaschen umgekippt.*
 Bill has anywhich bottles knocked over
 ‘Bill knocked over some bottles or other.’

5.3.7 (1,1,1) Qs

Comparative quantifiers in German, which take two NP-complements, are formed on the pattern of the (adjectival) comparative construction. Comparatives in German are introduced with the comparative form of an adjective, and can be followed by a DP introduced by *als* (than). Interrogatives are formed on the basis of the comparative by prefixing the adjective with the wh-phrase *wie viel* (how many/much).

- (253) *größer als ich*
 bigger than I
- (254) *zahlreicher als die Sterne*
 more numerous than the stars
- (255) *wie viel zahlreicher als die Sterne*
 how much more numerous than the stars

Equatives use the base form of the adjective, introduced by *so* (so/as), and the standard of comparison is introduced with *wie* (how).

- (256) *so groß wie ich*
 as big how I
- (257) *so zahlreich wie die Sterne*
 as numerous how the stars

In both the comparative and equative constructions, the standard of comparison (introduced by *als* and *wie* respectively) is often postposed.

To indicate a rate of comparison (exactly as much, twice as much, three times as much, etc.), the equative construction is preceded by the rate indicator.

- (258) *doppelt so groß wie ich*
 twice as big how I
- (259) *halb so zahlreich wie die Sterne*
 half as numerous how the stars

Comparative quantifiers in German are built on this same mold, taking the base item to be *viel* (many), and the comparative to be *mehr* (more).

- (260) *Mehr Studenten als Lehrer sind gekommen.*
 more students than teachers are come
- (261) *Prozentual mehr Studenten als Lehrer haben die Petition unterschrieben.*
 percentagewise more students than teachers have the petition
 signed
- (262) *Wie viel mehr Studenten als Lehrer sind gekommen?*
 how many more students than teachers are come
- (263) *Es wurden so viele Polizisten wie Lehrer entlassen.*
 it became so many police how teachers fired
 'As many policemen as teachers were let go.'
- (264) *Doppelt so viel Milch wie Bier wird getrunken.*
 double so much milk how beer fired
 'Twice as much milk was drunk as beer.'

As in English (Keenan and Moss 1985), the first two argument positions of a comparative quantifier can be saturated by adjectives. In sentence (265), the comparative quantifier has combined with the pair of adjectives *rot* and *grün* to form a (1, 1) determiner, which combines with *Gummibärchen* to build a generalized quantifier.

- (265) *Es sind doppelt so viele rote wie grüne Gummibärchen in der Packung.*
 it are double so many red how green gummi-bears in
 the package

That this is perhaps better viewed as a form of N-bar deletion, is suggested by the sentences below, which show that the head noun (*Gummibärchen*) may appear either in the first or in the second argument position of the comparative quantifier. In order to avoid an N-bar deletion analysis, one would need a kind of wrapping operation to get the word order right, assuming that both arguments should be of the same semantic type. Note that, if the *wie*-phrase (or *als*-phrase, where applicable) is postposed, the head noun must appear in the first argument position.

- (266) *Es sind doppelt so viele rote Gummibärchen wie grüne in der Packung.*
 it are double so many red gummi-bears how green in
 the package

- (267) *??Es sind doppelt so viele rote Gummibärchen wie grüne*
 it are double so many red gummi-bears how green
Gummibärchen in der Packung.
 gummi-bears in the package
- (268) **Es sind doppelt so viele rote in der Packung wie grüne*
 it are double so many red in the package how green
Gummibärchen.
 gummi-bears
- (269) *Es sind doppelt so viele rote Gummibärchen in der Packung*
 it are double so many red gummi-bears in the package
wie grüne.
 how green
- (270) *??Es sind doppelt so viele rote Gummibärchen in der Packung*
 it are double so many red gummi-bears in the package
wie grüne Gummibärchen.
 how green gummi-bears

Comparative DPs can have any grammatical function except that of possessor.

- (271) **mehr Anwälten als Ärzten Frauen*
 more lawyers than doctors wives
 intended: ‘More lawyers’ than doctors’ wives’
- (272) **die Frauen mehr Anwälten als Ärzten*
 the wives more lawyers than doctors
- (273) **die Frauen von mehr Anwälten als von Ärzten*
 the wives from more lawyers than from doctors
- (274) *mehr Frauen von Anwälten als von Ärzten*
 more wives from lawyers than from doctors

Other (1,1,1) quantifiers include those built via conjunction.

- (275) *Alle Frauen und Kinder sollen das Schiff zuerst verlassen.*
 all women and children should the ship first leave
 ‘All women and children should leave the ship first.’
- (276) *Jedes Kleinkind und Mädchen würde sich darüber freuen.*
 every little child and girl would self about it be happy
 ‘Every little kid and girl would be happy about it.’

- (277) **Jede(r/s) Junge und Mädchen würde sich darüber freuen.*
 every boy and girl would self about it be happy

Note that both nominal arguments to the quantifier must share the same gender and number features, on pain of ungrammaticality (277).

5.3.8 Decreasing DPs

Some examples of decreasing DPs are given here.

- (278) *kein Mädchen*
 no girl

- (279) *nicht alle Jungen*
 not all boys

- (280) *weniger als drei Viertel der Frauen*
 fewer than three quarters of the women

Decreasing contexts license the NPI *sich um etwas scheren* (to concern oneself with something).

- (281) **Manche scheren sich um mich.*
 some concern themselves around me

- (282) *Manche scheren sich nicht um mich.*
 some concern themselves not around me

- (283) *Kein Mädchen schert sich um mich.*
 no girl concerns herself around me

- (284) *Nicht alle Jungen scheren sich um mich.*
 not all boys concern themselves around me

- (285) *Weniger als drei Viertel der Frauen scheren sich um mich.*
 less than a quarter of the women concern themselves around me

5.3.9 Scope Ambiguities

Non-surface quantifier scopes in German are not as easy to get as in English. One exception is in DPs contained in DPs (inverse linking constructions) (May and Bale 2005, Zimmermann 2003b), where the natural reading is one in which the DP-internal DP outscopes the DP containing it.

- (286) *Ein Apfel in jedem Korb ist verrottet.*
 one apple in every basket is rotten
 ($\forall < \exists$)

Another case where a non-surface scope reading is clearly present occurs when a quantified object is in the prefield, and a quantified subject is in the midfield. But when the subject is in the prefield, no ambiguity is detected with normal intonation.

- (287) *Mindestens ein Baby hat jeder Politiker geküsst.*
 at least one baby has every politician kissed
 ‘Every politician kissed at least one baby.’
 ($\forall < \geq 1, \geq 1 < \forall$)
- (288) *Mindestens ein Politiker hat jedes Baby geküsst.*
 at least one politician has every baby kissed
 ‘At least one politician kissed every baby.’
 ($\geq 1 < \forall$)

Furthermore, a direct object in the prefield can scope beneath an indirect object in the midfield, but not vice versa, if normally intoned.

- (289) *Mindestens ein Gemälde hat er fast jedem Besucher gezeigt.*
 at least one painting has he almost every visitor shown
 ‘He showed almost every visitor at least one painting.’
 ($\forall < \geq 1, \geq 1 < \forall$)
- (290) *Mindestens einem Besucher hat er fast jedes Gemälde
 gezeigt.*
 at least one visitor has he almost every painting
 shown
 ‘He showed at least one visitor almost every painting.’
 ($\geq 1 < \forall$)

What seems to be relevant for these normally intoned cases is ‘deep’ grammatical function, not surface grammatical function, as the following sentences show. Sentence (291) demonstrates that indirect objects in the prefield can scope underneath subjects in the midfield. Sentence (292) is the passive form of (290) above. Despite it being of the surface form of (291), it has the scopal properties of (290).

- (291) *Mindestens einem Besucher hat fast jeder Museumsdirektor
at least one visitor has almost every museum director
sein Lieblingsgemälde gezeigt.
his favourite painting shown
'Almost every museum director showed at least one visitor his favourite
painting.'*
($\forall < \geq 1, \geq 1 < \forall$)
- (292) *Mindestens einem Besucher wurde fast jedes Gemälde
at least one visitor became almost every painting
gezeigt.
shown
'Almost every painting was shown to at least one visitor.'*
($\geq 1 < \forall$)

Frey (1993) investigates the scopal behaviour of quantifiers in a setting where intonational effects are controlled for. Extending the range of data to include embedded clauses, as well as temporal and locative prepositional phrases, he arrives at the hierarchy of (deep) grammatical functions below, where an item to the right of another in the hierarchy can scope underneath it in a sentence where the item appears prior to that other.

TEMP < SUB < LOC < IO < DO

He also observes that a description of scope-taking possibilities must make reference to more than simply the linear order and grammatical function of scope-taking expressions. The sentences below have the same scope-taking DPs with the same grammatical function in the same order, but only the first is ambiguous. Furthermore, the only reading available for the second sentence does not correspond to the surface order of the scope-taking elements.

- (293) *Fast jedes Gemälde hat er mindestens einem Besucher
almost every painting has he at least one visitor
gezeigt.
shown
'He showed at least one visitor almost every painting.'*
($\geq 1 < \forall, \forall < \geq 1$)
- (294) *Fast jedes Gemälde gezeigt hat er mindestens einem
almost every painting shown has he at least one
Besucher.
visitor
($\geq 1 < \forall$)*

Pafel (1999) suggests that *wh*/quantifier interactions follow similar patterns.

- (295) *Wie viel Politiker haben jedes Baby geküsst?*
 how many politicians have every baby kissed
 ‘How many politicians have kissed every baby?’
 not: ‘For every baby, how many politicians kissed it?’
- (296) *Welche Babys hat jeder Politiker geküsst?*
 which babys has every politician kissed
 ‘Which babies have been kissed by every politician?’
 ‘For every politician, which babies did he kiss?’

Subjects in German are naturally interpreted as scoping over negation in neutral intonational contexts. However, certain quantifiers are able to scope under negation if appropriate intonational contours obtain (see e.g. Buring (1997), Krifka (1998)). For example, *jeder* can scope underneath *nicht* in (298). However, *die meisten* (most) cannot have its scope inverted even in particular intonational conditions (300).

- (297) *Jeder Politiker hat nicht zugehört.*
 every politician has not listened
 ($\forall < \neg$)
- (298) *JEDER Politiker hat NICHT zugehört.*
 every politician has not listened
 ($\neg < \forall$)
- (299) *Die meisten Studenten sind nicht durchgefallen.*
 the most students are not failed
 ‘Most of the students did not fail.’
 (MOST < \neg)
- (300) *Die MEISTen Studenten sind NICHT durchgefallen.*
 the most students are not failed
 (MOST < \neg)

Pafel (2005) is a detailed study of a number of factors influencing scope preferences in German sentences. These include c-command, grammatical function, degree of affectedness, distributivity, relation to discourse, definiteness, focus, and negatability. He shows that a simple additive weighting system on the basis of these features suffices to predict which readings are preferred.

5.3.10 Type (2) Qs

Given two generalized quantifiers, one designated as a ‘subject’, and the other as an ‘object’, we can represent subject-wide and object-wide scope independently of a particular verb, creating as it were a property of transitive verb denotations (binary relations) from the two quantifiers. (For example, with proper choice of generalized quantifiers, this property might hold of a verb *see*’s denotation just in case every boy is related by seeing to some girl.)

Not all properties of binary relations are reducible to properties derived from two generalized quantifiers in the sense above (Keenan 1992). Interestingly, natural languages are able to use co-arguments of verbs to denote properties of binary relations that *aren’t* reducible to combinations of generalized quantifiers. German is no exception.

- (301) *John hat Mary geküsst, aber niemand anderes hat sonst
John has Mary kissed, but noone else has otherwise
jemanden geküsst.
someone kissed
‘John kissed Mary, but noone else kissed anyone else.’*
- (302) *Jeder Student hat eine andere Frage beantwortet.
every student has an other question answered*
- (303) *Alle Studenten haben unterschiedliche Fragen beantwortet.
all students have different questions answered*
- (304) *Anna schaut sich niemals den gleichen Film mehrmals
Anna watches self never the same movie multiple times
an.
‘Anna never watches the same movie multiple times.’*
- (305) *Verschiedene Leute mögen verschiedene Dinge.
different people like different things*
- (306) *Vom selben Beweis haben verschiedene Juristen
from the same evidence have different jurors
unterschiedlich geschlussfolgert.
differently concluded
‘Different jurors came to different conclusions based on the same evidence.’*

For instance, sentence (302) is false in a situation where every student answered one and the same question. Removing *andere* from sentence (302) removes the ability to compare answers across students. Other adjectives with similar effect are *unterschiedlich* (different), *verschieden* (different), *gleich* (same), and *selbe* (same).

5.3.11 *The Indexing Function of Universal Quantifiers*

The meanings of the sentences below can be given in terms of an index set (of years, and deaths). The sentences assert that there is an injective function from indices to numbers of people buying Audis and groups of five births respectively.

(307) *Jedes Jahr kaufen mehr Leute einen Audi.*
 every year buy more people an Audi

(308) *Auf jeden Sterbefall kommen fünf Geburten.*
 on every death come five births
 ‘For every death there are five births.’

5.3.11.1 Rate Phrases

Sentences (309) and (310) instantiate different ways of expressing rates in German. Sentence (310) uses explicit quantification over days, whereas sentence (309) achieves the same effect by combining the adverbial quantifier *dreimal* with the PP *am Tag*.

(309) *John wäscht sich das Gesicht dreimal am Tag.*
 John washes himself the face three times at the day
 ‘John washes his face three times a day.’

(310) *John wäscht sich jeden Tag dreimal das Gesicht.*
 John washes himself every day three times the face

(311) *Ich laufe 20 Kilometer (am Tag/ pro Stunde).*
 I run 20 kilometers (at the day / per hour)
 ‘I run 20 km a day/ per hour.’

5.3.12 *Only*

German differentiates between the English DP-internal and external use of *only*. Internal to the DP either the adjective *einzig* (single) or the determiner *lauter* (see Section 5.2.1.4 and Eckardt (2006)) must be used.

(312) *Ein einziger Mann ist gekommen.*
 a single man is come
 ‘A single man came.’

(313) *Der einzige Mann, der kam, ist gestorben.*
 the only man the came is died
 ‘The only man who came died.’

- (314) *Die Familie Brandt hat lauter Töchter.*
 the family Brandt has only daughters
 ‘The Brandts only have daughters, and many of them.’

Sentence (314) illustrates that the word *lauter* is not a synonym of the English *only*, as it contributes as well to the meaning of the sentence that its restrictor argument holds of a sufficient amount of individuals (what counts as ‘sufficient’ is context-dependent). As *lauter* is a syntactic determiner, a natural treatment takes it to be a counter-example to the principle that natural language determiners denote conservative functions (Barwise and Cooper 1981). Eckardt (2006) argues that this is not the correct analysis, and that *lauter* builds instead a semantic predicate with its noun phrase argument, which is interpreted in sentences like (314) as occurring in a (phonologically reduced) relative clause ‘something which is *lauter Töchter*.’ Aside from a certain amount of historical plausibility,¹⁷ this analysis gives a natural account of *lauter* when it occurs predicatively.

- (315) *Ihr seid lauter Schlingel.*
 you are only scoundrals

External to the DP, the words *nur* (only), *bloß* (mere(ly)), *ausschließlich* (exclusively), and *lediglich* (merely) can be used (König 1991).

- (316) *Nur John ist gekommen.*
 only john is come
 ‘Only John came.’
- (317) *Nur fünf Studenten sind gekommen.*
 only five students are come
- (318) *John hat nur gesungen.*
 John has only sung

The selectional properties of DP-external particles is contested, with Jacobs (1983) and Büring and Hartmann (2001) arguing that focus particles (such as *nur*) attach exclusively to projections of the verb (see Bayer (1996) and Reis (2005) for arguments to the contrary). One of the main arguments for this position is the fact that the distribution of such particles does not completely match the distribution of DPs. In particular, DPs selected by prepositions resist modification by focus particles.

¹⁷ Historically, *lauter* was an adjective meaning *pure* (see Eckardt (2006)).

- (319) **Peter träumt (nur) von (*nur) seiner Frau.*
 Peter dreams only from only his wife
 ‘Peter dreams only of his wife.’

That this is not best viewed as an absolute prohibition, but rather as a (strong) tendency, is argued in Bouma et al. (2007), where German is compared in this respect with the (slightly) more liberal Dutch and English.

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Chapter 6

The Landscape of Greek Quantifiers

Anastasia Giannakidou

6.1 Introduction

In this article, we study the structures that the Greek language employs to express quantification. By Greek, I am referring to the contemporary Greek spoken in the countries of Greece and Cyprus (an estimated total of 14 million speakers), and Greeks in diaspora (an estimated 5–6 million). It has long been customary, especially in the study of classics, to use the term ‘Greek’ to refer to the ancient language – and for a while, linguists referred to the modern language as ‘Modern Greek’, or *Koine* Modern Greek (*Κοινή Νεοελληνική*; Babiniotis and Kontos 1967). However, ‘as a living language, contemporary Greek does not need to be qualified by an adjective which implies that it is somehow secondary to the ancient language’ (Holton et al. 1997: xiii). For this reason, it gradually became standard practice in linguistics to use *Greek* to refer to the modern language, adding the adjective *ancient* or *modern* only when these chronological stages need to be distinguished.

Greek is an Indo-European language, the sole descendant of Ancient Greek. Ancient Greek exhibited variation in its dialects – which, however, were always mutually intelligible and in later stages (e.g. in later antiquity and the Hellenistic period) developed into a common language *koine* (see among others Horrocks (1997)). It is now the standard view that ‘the vast majority of Greek speakers now speak a common language with only relatively minor dialectal variations. The only exception to this is the Greek Cypriots, many of whom ordinarily speak a dialect which, although linguistically close to standard Greek, presents some significant differences’ (Holton et al. 1997: xiii).

Until 1976, two versions of Greek co-existed: *demotic* (δημοτική), which was the actual spoken language at least since the turn of the twentieth century; and *katharévoussa* (καθαρεύουσα), a hybrid made up of lexical, morphological, and

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syntactic features of Ancient and Modern Greek. ‘Katharévousa was used not only on most official occasions, but it was also the language of secondary and college education, the law, medicine, the church, armed forces, most newspapers, and even to a certain extent radio and TV broadcasting’ (Holton et al. 1997: xv). The title of the most authoritative earlier grammar of Greek – *Νεοελληνική Γραμματική (της Δημοτικής)* [Modern Greek Grammar (of Demotic), Athens 1941] – reflects precisely this context. Demotic became the official language in 1976, and since then, the Greek language ‘has come closer to developing a set of universally accepted norms than at any other stage in its history’ (Holton et al. 1997: xv). The grammar I will be using as reference in this chapter is Holton, Mackridge, and Philippaki-Warbuton (1997), which describes what can be thought of as standard modern Greek, spoken at urban centers in Greece and Cyprus, which is based on demotic vocabulary, morphology and syntax, but does display a significant influence from katharévousa; for additional description, and more details in the history of Greek, see also the important works of Mackridge (1985) and Horrocks (1997).

Greek is a highly inflected language. The nominal system displays four cases (nominative, genitive, accusative, vocative), and there is agreement within the nominal, so all constituents are typically marked for case, number and gender. The verbal system is inflected for voice (active, medio-passive), tense (past, non-past), aspect (perfective-imperfective), and person, so verbal forms can be quite complex. We will not emphasize these morphological matters in this article, and recall them only when necessary. First, I briefly consider some basic facts about clause structure (6.1.1), and then I give some necessary background information about the DP structure (6.1.2). D plays an important role in the formation of quantifiers in Greek, as we will see.

6.1.1 Basic Facts About Greek Clause Structure

Alexiadou and Anagnostopoulou (1998) and others have cited Greek as underlyingly VSO, but I think that the most defining feature of Greek is that there is extensive word order freedom. In practice, the subject dominantly occurs sentence initially in affirmative declarative sentences, but the flexibility in word order allows constituent displacements such as topicalizations, focus, and wh-movement. Another distinctive property of modern Greek is that it does not have an infinitive, and therefore complementation is always finite.

We have three mood paradigms: subjunctive, indicative, and imperative. The imperative is used in main contexts only, and is marked with specific morphology on the verb (Mackridge 1985, Holton et al. 1997).¹

¹ In the examples, I use common transcription practice, and do not follow the orthographical conventions. I do designate stress, though, in words with more than one syllable, to increase readability.

the particles to supply a temporal anchor. The particles, including the subjunctive *na*, function as the present tense: they introduce the variable *now* in the syntax. *Na* is generated as a Mood head (Philippaki-Warburton 1993).

Greek diachronically possess negations that are heads (Ancient Greek *ou, μην*, Modern Greek *dhen, min* (δεν, μην)). The modern Greek negations head their own projections NegP (Giannakidou (1998), see also Veloudis (1982)); but the Ancient Greek negators are argued to be phrasal (Chatzopoulou 2011). *Dhen* is used to negate indicative clauses, and *min* negates subjunctive clauses and gerunds. The correlation between negation and mood has been diachronically stable in the history of Greek, though not perfect (see Chatzopoulou forthcoming).

(6) Na *min* to pis.
 subj not it say.1sg
 Don't say this.

(7) *Dhen* to ipa.
 not it said.1sg
 I did not say this.

Now let's look at the basic patterns of the Greek definite structures.

6.1.2 *The D in Greek: Uses, Differences with English, and Genericity*

Greek has a DP (Stavrou 1983, Stavrou and Horrocks 1989, Horrocks and Stavrou 1987), headed by the definite article. Like the noun and adjective, the article in Greek is fully inflected for gender, case, and number: *o* is masculine, *i* feminine and *to* neuter (in singular nominative). I will be using *o* in this chapter as the label for the definite article. The definite article is usually designated as D (Abney (1987); see Alexiadou et al. (2008) for a recent overview), and the demonstrative is generated in English also as D (thus **this the book*). The English DP has the structure below; it produces typically a referential expression, a (maximal or unique) individual indicated with *iota*:

(8)

DP, $e: t$ (λx . woman (x))	
D	NP
$\langle\langle e, t \rangle, e \rangle$	$\langle e, t \rangle$
{the/this}	woman : λx . woman (x)

Demonstratives are generally thought of as definites that come with additional presuppositions of maximal salience or proximity (see Roberts (2002) for a

comparison between definite descriptions and demonstratives in English). The DP produces the most basic argument *e* – which can be lifted up to the GQ type when necessary (*modulo* Partee's 1987 type shifting rules).

6.1.2.1 The Greek Definite Article

The Greek article *o* is a D too, but it has a number of additional uses that are not observed in English, and which make it quite interesting.

(i) Definite Serializations

The article is used multiply in the so-called *definite reduplication*, or *polydefinite* structure (see Kolliakou 2004, Alexiadou and Wilder 1998, Campos and Stavrou 2004, Ioannidou and den Dikken 2009, Lekakou and Szendroi 2009).

- (9) a. **o** kókinos **o** tíxos
 the.nom.sg red.nom.sg the.nom.sg wall.nom.sg
 the wall that is red
- b. **o** tíxos **o** kókinos
 the wall the red

These serial [DP plus DP] structures are extremely common and productive in Greek. Often, they are thought to express a predication relation between the two DPs, as indicated above (*the wall that is red*), though the exact details are not crucial here. It is, however, important to note the possible permutation of noun and adjective. Also, there is no limit in how many DPs can be serialized. Consider the example below (ignoring agreement in the gloss):

- (10) to palió to spíti to megálo to patrikó
 the old the house the big the paternal
 the big old family house

Possessive pronouns (*mas* 'ours' below) can be added at any point:

- (11) a. to spíti *mas*
 the house ours
- b. to palió *mas* to spíti to megálo to patrikó
 the old ours the house the big the paternal
- c. to palió to spíti *mas* to megálo to patrikó
- d. to palió to spíti to megálo *mas* to patrikó
- e. to palió to spíti to megálo to patrikó *mas*
 our big old family house

We see here that the possessive also appears as a definite description (with overt definite article) in Greek – again a major difference with English where the possessive does not, and cannot, contain the definite article.

(ii) *Definite Article with Quantifiers*

Another use of the Greek article which differs from English is when it appears to attach not to an NP, as is expected, but to a quantificational determiner (Giannakidou 2004). This is illustrated with the universal quantifier *káthe* ‘every’:

- (12) a. **o** *káthe fititís* (Giannakidou 2004: (32b))
 D.masc every student.masc
 * the every student
- b. * *káthe* **o** *fititís*
 every D student
- (13) **i** *káthe fitíttria*
 D.fem. every student.fem

Giannakidou (2004) and Etxeberria and Giannakidou (2010) gloss D *káthe* lit. ‘the every’, as *each*. This use of D is observed in other languages too, e.g. Basque (Etxeberria 2005, 2009, Chapter 3, this volume) and Hungarian (Szabolcsi 1987; see also Szabolcsi 2010). The works cited propose that the article in this use modifies syntactically the quantificational determiner and *not* the NP. We come back to these uses of D when we discuss universal quantifiers later on. We will also find the definite article to interact with *wh*-quantifiers in Section 6.7, more specifically in the formation of free relatives and free choice items.

(iii) *Definite Article with Proper Names*

The Greek definite article is obligatory with proper names:

- (14) a. **o** *Nikólas;* **i** *Ariádne*
 the Nicholas; the Ariadne
- b. * *Nikólas;* **Ariádne*

The article is dropped only with the vocative (Stavrou 2011): *Nikóla! Ariádne!*; but **o Nikóla!* **i Ariádne!* Otherwise, the Greek proper name looks like a definite description too.

(iv) Generic Reference in Greek Is Only Possible with the Definite Article

The Greek DP is the typical vehicle of genericity. Bare singular count nominals are not allowed in the language as arguments:

- (15) a. *(I) patáta íne laxanikó.
 the potato is vegetable
 {Potato/the potato} is a vegetable.
- b. *(I) patátes íne laxaniká.
 the potatoes are vegetables
- (16) a. *(I) patáta itan sápia. (yesterday)
 the potato was rotten
- b. *Patátes itan sápies.
 potatoes were rotten

The first sentence is generic, and the second is episodic, as indicated and suggested by the predicates. We see that bare singular and plural count nouns are excluded in both cases. Generic reference is done via the definite determiner, in singular *and* plural. Compare the plural version to *The potatoes are vegetables* in English, which has a multiple kind reading (Krifka et al. 1995, Chierchia 1998). In Greek this sentence also has the kind denoting bare plural reading that the English definite plural lacks. Even singular mass nouns, which in English can be bare, cannot appear bare as generic arguments:

- (17) *(I) záxari íne glikiá.
 the sugar is sweet
 Sugar is sweet.

So, Greek is very restricted in its use of bare nominals. Bare singulars are allowed only as predicate nominals as we see, in the existential structure (to be examined in Section 6.4), and in the object position, where it has been argued that they contain a null D (Sioupi 1998, 2002, following Longobardi 1994, Chierchia 1998).

- (18) a. Xriázome záxari.
 I need sugar.
- b. O Jánis aftí ti stigmí diavázi {efimerída/periodiká}.
 the John this the moment read.imperf.3sg newspaper/magazines
 John is reading {the newspaper/magazines} right now.
- c. O Jánis éxtise {spíti/spítia}.
 the John built house/houses
 John built a house.

- d. I mamá éftiakse {kéik/pítes}.
 the mom made cake/pies
 Mom made {a cake/pies}.

The bare arguments in object position are all narrow scope indefinites, equivalent to existential bare plurals in English, and the singulars to *a* indefinites (see Sioupi's work for more details). Bare singulars are also employed in minimizer negative polarity items (e.g. *didn't say a word*), as we see in Section 6.6.

In subject position, bare singular existentials are out, but bare plurals are marginally allowed with existential, never generic, readings:

- (19) Gátes niaourízoun.
 Cats are meowing.

The point I want to make here is that bare arguments, to the extent that they are allowed, are equivalent to narrow scope indefinite existentials, and are never used generically. Generic reference in Greek is always via DP, regardless of mass/count differences.

6.1.2.2 Demonstratives

Finally, Greek possesses two demonstrative pronouns *aftós*, *aftí*, *aftó* 'this', *ekínos*, *ekíni*, *ekíno* 'that' – which, unlike English, *must* embed DPs (Stavrou 1983, Stavrou and Horrocks 1989, Alexiadou et al. 2008):

- (20) a. aftós *(o) fítítis
 this the student
 this student
 b. ekínos *(o) fítítis
 that the student
 that student

Horrocks and Stavrou argue that the demonstratives are not D heads in Greek, but phrases in Spec, DP. Other demonstratives in Greek are: the qualitative demonstrative *tétjos* 'such', and the quantitative *tósos* 'that much' (the latter related to the wh-word *ósos* 'as much as'):

- (21) a. Thélo éna *tétjo*. (with a pointing gesture; Holton et al.: 327)
 want.1sg one such
 I want one of these.

- b. Dhen thélume *tétja*.
We don't want such things.
- c. Íne *tóso* psilós!
He is so tall!

Finally, anaphoric elements also appear as DPs in Greek: the word ‘self’ – *o eafiósmu* ‘myself’ – and *o idhios* lit. ‘the same one’, a long distance anaphor and a logophor in Greek (Iatridou 1986, Varlokosta and Hornstein 1993). This background on the Greek DP will suffice for our discussion of quantificational expressions. More details regarding the use of D will be pointed out as we move on.

6.1.3 Roadmap

Traditional grammars use the terms ‘pronouns’ as in *definite* (*he, she, it*) and *indefinite* (*someone, something*) pronouns, determiners, and quantifiers to refer to what can collectively be understood as ‘quantificational expressions’. In this context, the word ‘determiner’ is understood descriptively as ‘a word that is not an adjective or a numeral but which accompanies a noun (e.g. “every”, “other”, “same”)’ (Holton et al. 1997: 303), hence quite differently from the way the term is used in the theoretical discussion in the syntax-semantics interface.

The background of our discussion here will be the generalized quantifier (GQ) theory (Montague 1974, Barwise and Cooper 1981, Zwarts 1986, Westerståhl 1985, Partee 1987, Keenan 1987, 1996, Keenan and Westerståhl 1997; for more recent works see Giannakidou and Rathert 2009, Szabolcsi 2010), which posits that there is a natural class of expressions in language, called quantificational determiners (designated as Qs), which combine with a nominal (NP) constituent (of type *et*, a first order predicate) to form a quantificational argumental nominal (QP). This QP denotes a GQ, a set of sets. In a language like English, the syntax of a QP like *every woman* is as follows:

- (22) a. $[[\text{every woman}]] = \lambda P. \forall x. \text{woman}(x) \rightarrow P(x)$
 b. $[[\text{every}]] = \lambda P. \lambda Q. \forall x. P(x) \rightarrow Q(x)$
 c.
- $$\begin{array}{c}
 \text{QP, } \langle\langle e, t \rangle, t \rangle \\
 \swarrow \quad \searrow \\
 \text{Q} \qquad \text{NP} \\
 \langle\langle e, t \rangle, \langle\langle e, t \rangle, t \rangle\rangle \quad \langle e, t \rangle \\
 \text{every} \qquad \text{woman} : \lambda x. \text{woman}(x)
 \end{array}$$

The quantificational determiner Q *every* combines first with the NP argument *woman*, and this is what we have come to think of as the standard QP-internal syntax. The NP argument gives the domain of the Q, and the Q expresses a *relation* between this domain and the set denoted by the VP. QPs like *every woman*, *most women*, etc. are known as ‘strong’ (Milsark 1977), and they

contrast with the weak Qs like *some, few, three, many, etc.*, in that the latter, but not the former, are admitted in the existential construction. Another element that combines with a domain set to give a nominal argument is the definite D, as we saw earlier. In Greek, like in English, the DP and the QP are the two argumental nominals – bare nominals are generally not allowed as arguments, as we saw, or if they do, they are thought to contain a null D.

The structure of this chapter will unfold as follows. We start first with existential QPs in Section 6.2. We present first the quantity denoting existentials such as numerals – including modified numerals (Section 6.2.2) and distributive numerals, and we also examine the indefinite QPs preceded by the Greek equivalent to *some* and those preceded by the indefinite article (Section 6.2.4). Then, I present the so-called value judgements existentials, i.e. those that express a *subjective assessment* of their quantity (equivalents to *few, many, several, etc.*). We will notice an interaction there between intonation and determiner, a pattern that we observe again later in our discussion of scope and negative polarity quantifiers in Section 6.6. We discuss also partitive structures, and in Section 6.2.7, the adverbial variants of existentials.

In Section 6.3, we move on to expressions of universal quantification and other strong quantifiers, where we observe the systematic interaction between D and Q mentioned earlier. Here we also discuss binominal *each*, floating quantifiers, and distributivity. In Section 6.4, we zoom in on the existential structure, and ask what kinds of quantifiers can appear there. It is hard to draw clear conclusions about the definiteness effect in Greek; also there is more than one variant of the existential structure in Greek. In Section 6.5, we discuss morphologically complex quantifiers such as comparative quantifiers, those created via boolean compounding (*and, or, neither...nor....*, and *not*), exception phrases (*all but ten students*), and bounding phrases (*He exercised twice a day, six days a week for one year*).

In Section 6.6, we discuss negative polarity quantifiers and negative concord in Greek, and consider some more general questions of scope in a bit more detail. We notice an interaction between scope and intonation in Greek that has been observed in the literature (Giannakidou 1998, 2000, Baltazani 2002). In Section 6.7, finally, we focus on wh-based quantification. Unlike English, there are *three* paradigms of wh-words in Greek: interrogative wh-words, relative wh-words, and a special wh-form for free relatives that employs the definite article. The form is also the one used as the basis for the formation of free choice quantifiers (Giannakidou and Cheng 2006), so we find again an interaction of D with quantifiers in free choice, suggesting the relevance of definiteness for the semantics of free choice.

We distinguish between *D-quantifiers*, i.e. those that we call QPs (formed by using the determiner Q), and *A-quantifiers* which are adverbial. The latter are mathematically less well understood, and morphosyntactically and semantically more variable than D-quantifiers. Finally, it is important to emphasize that, as just described, we take the basic *semantic* type of quantifiers to be a relation between two sets. Our classification is thus meaning based. Logically equivalent

expressions in different languages may be syntactically non-isomorphic: *e.g. each student* in Greek appears as *o káthe fititis*, i.e. it is as a definite as mentioned earlier, but it will be classified as a universal based on its meaning.

My goal is to offer an accurate *description* of the Greek quantificational system, and it is my hope that this article will provide useful information to those interested in knowing what the landscape of Greek quantifiers looks like. The emphasis is therefore on broad empirical coverage and accuracy. However, connections to current theoretical discussions will also be made when they help the description – and, most importantly, when the lessons we draw from Greek can have implications for the analysis of quantification in general.

6.2 Expressions of Existential Quantification

We start with the examination of *generalized existential (intersective) quantifiers* (Keenan 1987, 1996). This is the class known as *weak* quantifiers, the Q expressing the intersection of their domain argument (NP) and the VP.

Often, existential Qs have been treated in the literature as ‘adjectival’, and therefore are not always considered syntactically Qs of type *et,ett* (cf. Link 1984, Partee 1988, Kamp and Reyle 1993, Krifka 1999, van Geenhoven 1998, Landman 2002). Ionin and Matushansky (2006) more recently argue that weak numerals, at least, are modifiers. Greek weak Qs are also argued to be adjectival as a class in Giannakidou and Merchant (1997), Stavrou and Terzi (2010). In what follows, I will generally refrain from syntactic questions, and consider primarily the semantic classification. So, what are called *existential quantifiers* below are simply relational expressions that are used in Greek to express existential quantification, regardless of whether they are syntactically quantificational determiners or not.

6.2.1 Indefinite Article and Numerals

A numeral is a word that expresses a number. Numerals are typically divided into cardinals (*one, two, three*) and ordinals (*first, second*, etc.). Ordinals in Greek behave like predicative adjectives and will not be considered here. Holton et al. state that ‘from the morphological point of view, Greek cardinal numerals may be divided into three categories: (a) indeclinable cardinals, (b) declinable cardinals, and (c) cardinals behaving like nouns’ (Holton et al. 1997: 294). Examples of declinable numerals are *énas* (masc.) *mía* (fem.) *éna* (neut.) ‘one’, *trís* (masc., fem.) *tría* (neut.) ‘three’, *tésseris* (masc., fem.) *téssera* (neut.) ‘four’, *diakósi diakósies diakósia* ‘two hundred’, *xílji xíljes xílja* ‘one thousand’. *Ekatómírio* ‘million’ behaves like a noun, and thus also declines (like all nouns in Greek). Indeclinable are the words designating the numbers 2, 5, 6, 7, 8, 9, 10, 11, 12 and the tens. Some examples are given below:

- (23) I María agórase ÉNA vivlío, ke óxi pénde.
 Mary bought one book, and not five [books]
- (24) a. Tris ánthropi diamartiríthikan.
 Three people complained.
- b. To tmíma mas tha dextí fétos xílius
 the department ours will. admit this year thousand.masc.acc.pl.
 diakósíus néus fitités.
 two-hundred.masc.acc.pl new. masc.acc.pl students. masc.acc.pl
- c. Ekremún apózimiósis enós ekatomiríu agrotón.
 Pend.3pl compensations.nom one.gen million.gen farmers.gen
 The compensations of one million farmers are still pending.
- d. i xóra ton xilíon limnón
 the country the.gen.pl thousand.gen.pl lake.gen.pl
 the country of a thousand lakes

The bracketed part in the example (23) illustrates NP ellipsis which is generally available in Greek (Giannakidou and Stavrou 1999), and depends on contrastive focus. In the example, the numeral is stressed for this reason. Unstressed, the numeral is used as the indefinite article:

- (25) Skéftome na agoráso éna spíti.
 I am thinking of buying a house.

The use of numeral *one* as an indefinite article is very common in many European languages, and in Greek, the indefinite *éna* is a run of the mill unmarked indefinite with no preference for specific or non-specific readings (Giannakidou et al. 2011). For indefiniteness in the plural, the bare plural can be used, as indicated in the example below:

- (26) I María agorase vivlia.
 the María bought books
 María bought books.

As said earlier, the indefinite bare plural is always narrow scope and cannot be specific (unlike the singular which is neutral). For indefinite plural Greek also employs *káti*, which we will discuss later in this section, and which seems to be comparable to the use of *unos* in Spanish.

Greek numerals are also known to license null arguments:

- (27) I Éléna agórase tría vivlíá, alá I María dhen agórase [e].
 Eléna bought three books, but María didn't buy [any].

Giannakidou and Merchant (1997) call this ‘indefinite object drop’, and show that only indefinite existential quantifiers can serve as antecedents for indefinite object drop in Greek.²

Numerals can also be used in the so-called pseudopartitive structure (Stavrou 1983, 2003) which seems to be equivalent to a classifier structure:

- (28) a. Xriazómaste tría bukália krasí.
 need.1pl three bottles.acc wine.acc
 We need three bottles of wine.
- b. Dío potíria ximós íne arketá.
 two glasses.nom juice.nom is enough
 Two glasses of juice is enough.
- c. tría métra ífasma
 three meters cloth

Like English, Greek is not a classifier language and uses containers and measure phrases to count units of mass nouns. We see here that no preposition is used – hence, *pseudopartitive* – but the two nominals agree in case (though not number, as the mass noun appears typically in the singular), and the case is determined by their grammatical function (object or subject).

6.2.2 Modified Numerals

Numerals can be modified by the following kinds of modifiers:

6.2.2.1 Quantity Bounding Modifiers

Quantity bounding modifiers are: *tuláxiston* ‘at least’, *to polí* ‘at most’, *óxi parápáno apó* ‘no more than’, *akrivós* ‘exactly’:

² This is one of the reasons, Giannakidou and Merchant argue, why indefinite object drop is a phenomenon distinct from VP ellipsis or null arguments in Japanese, Chinese, Portuguese.

- (29) Írthan {tuláxiston/to polí/ óxi parapáno apó} diakósi fitítés.
 came.3pl at least/at most/ no more than two hundred students
 {At least/ at most/no more than} two hundred students came.
- (30) To cake xriázete (akrivós) diakósia (akrivós) grammária vútiro (akrivós).
 The cake needs (exactly) two hundred (exactly) grams butter (exactly).

We see here that the modifier *akrivós* ‘exactly’ can float, and appear at the right or the left edge of the QP. *Tuláxiston* and *to polí* (lit. ‘the much’) typically precede the numeral but can also appear to the right: *tría avgá to polí* ‘three eggs at most’, *tría avgá tuláxiston* ‘three eggs at least’ but **tría avgá óxi parapáno apó* ‘*three eggs no more than’ – notice the parallel with English. Importantly, the modifier can also ‘split’ the QP and appear to the right of the numeral, between the number word and the noun:

- (31) a. Evgala dhío akrivós fotografíes.
 took two exactly pictures
 Lit. I took two exactly pictures.
- b. Na vgális dhío {to polí/tuláxiston} fotografíes
 Take two {at most/at least} pictures.

As I mentioned at the beginning, Greek has great flexibility in word order, and this carries over to the QP internal structure. This flexibility in the positioning of modifiers suggests that they don’t just function as Q modifiers, but they may have flexible syntactic specification as Q or QP modifiers, something which is expected given that they are adverbial. Holton et al. (1997) discuss some of these modifiers as ‘adverbials within the noun phrase’ (1997: 337), along with the approximative and evaluative modifiers that we discuss next.

Another bounding modifier is *móno(n)* ‘only’. (*N* is added before a vowel for euphonic reasons only.) *Móno* shows exactly the same flexibility:

- (32) Evgala (móno) tris (móno) fotografíes (móno).
 took.1sg (only) three (only) pictures (only)
 I took (only) three (only) pictures (only).

Tuláxiston, *to polí* and *mónon* do not exclusively modify numerals, they can also modify e.g. proper nouns:

- (33) Tha milíso {tuláxiston/ móno/ to polí} me ton Jáni.
 I will talk {at least/ only/ at most} with John.

6.2.3 Approximative Modifiers

Typical approximative modifiers are *perípu* ‘around’, *sxedhón* ‘almost’:

- (34) Simetíxan stis diadilósis {perípu/sxedhón}
 participated.3pl in-the demonstrations approximately/almost
 tris xiliades fitités.
 three thousand students
 {Approximately/ almost} three thousand students participate at the
 demonstrations.

Like the bounding quantifiers, *perípu* and *sxedhón* may also appear at the right edge of the QP:

- (35) Simetíxan stis diadilósis tris xiliádes fitités {perípu/ sxedhón}.
 Three thousand students approximately participated at the demonstrations.
 *[Three thousand students almost] participated at the demonstrations.

Notice the contrast with English *almost* that cannot be parsed as a constituent with the QP in this position. The intermediate position is also available: *tris xiliádes {perípu/ sxedhón} fitités* ‘three thousand {approximately/almost} students’.

Another class of approximative quantifiers is *kamiá* and *kána*. These sound like variants of *perípu*, but are morphologically related to the NPI *kamiá* ‘NPI.any.fem.’ that we will discuss in Section 6.6. *Kamiá* is the feminine form, and *kána* is related to the masculine and neuter *kanéna*. As approximatives, *kamiá* and *kána* are used uninflected. *Kamiá* appears with a numeral that does not agree in gender/number, or with nouns ending in *-ariá*, which are classifying:

- (36) Tha prépi na íxes {kamiá/kána} déka telefonímata (oso elipes).
 you must have had kamiá/ kána ten phone calls.neuter (while you were gone).
 You must have had about 10 phone calls while you were gone.
- (37) a. Idha {kamiá/*kána} dekariá fitités.
 I saw about ten students.
 b. Diávase {kána/* kamiá} vivlío.
 Read.imperative.2sg some book or other.

Dekariá is a classifying noun like ‘dozen’; *-ariá* and *-ádha* are very productive suffixes that create such classifying nouns: *eksádha* ‘six-piece’, *ekatodádha* ‘a mass of hundred’, *penindariá* ‘a mass of fifty’ (for a recent discussion see Stavrou and Terzi (2008, 2010)). The *kamiá* is not an NPI – given that it can

be used in a positive veridical sentence in the past tense (37a). As for *kána*, we see that it cannot be used with the classifying nouns, but rather with a bare NP, or with the numeral ‘two’ (*dhío*), and with the bare noun, thus creating an indefinite noun phrase.

- (38) Tha agoráso {kána dío vivlía/ kána vivlío}.
I will buy about two books/ a book.

Importantly, both *kamiá* and *kána* are not polarity sensitive, unlike their cognate *kanénas*, since they can be used in the veridical context of the simple past.

Numerals and modified numerals can all be used in the existential structure in Greek, which we consider separately in Section 6.3.

6.2.4 Indefinite QPs and Epistemic Judgement

An indefinite QP with the article *éna* can have specific or non-specific usages, as said earlier. Roughly, specificity means that the speaker has a particular individual in mind (in the ‘epistemic’ approach to specificity; Groenendijk and Stokhof (1981), Farkas (2002), Ionin (2006); for the choice function analysis see Reinhart (1997), Winter (1997). Specific indefinites refer to objects that are speaker identifiable but not part of the common ground; definiteness, on the other hand has to do with speaker *and* hearer reference, part of the common ground. Ionin (2006) argues that the QP is associated with a *felicity* condition that requires that the speaker be in position to identify the referent. This felicity condition is distinct from the presupposition of existence that a definite DP carries. It is clear then, that the specific use of an indefinite reflects an *epistemic judgement* on the part of the speaker. Such judgement often gets realized in the use of so-called ‘specificity’ markers such as *certain* in English.

Indefinite NPs sensitive to judgement or knowledge of the speaker exist in various languages, as noted by Haspelmath (1997) – and there exists a class of indefinites that appear to be the opposite of specific: they express uncertainty or indifference on the part of the speaker. They can only be used when the speaker does not know what their referent is. Examples of such indefinites are French *un quelconque* (Jayez and Tovena 2006), and Spanish singular *algún*. Jayez and Tovena call them *epistemic*, Alonso-Ovalle and Menéndez-Benito (2010) call them *modal*, but I will use the term *referential vagueness* (from Giannakidou and Quer 2011). Referential vagueness is an anti-specificity condition which says that the QP will be felicitous only if the speaker does *not* have a fixed value in mind.

Greek has two referentially vague determiners: the negative polarity *kanenas* series that we discuss in Section 6.6, and the non-polarity determiner that translates in English as *some*: *kápjios*, *kápjia*, *kápjio* ‘some, someone, somebody’ – inflecting fully for ϕ -features (case, number, gender), and which can be used both as determiner and as full QP, as indicated.

- | | | |
|------|--|---------------------------------|
| (39) | <i>kápjios</i> , <i>kápjia</i> , <i>kápjio</i> | ‘someone, some N’ |
| | <i>káti</i> | ‘something’ |
| | <i>kápu</i> | ‘somewhere’ |
| | <i>kápotē</i> | ‘sometime, once’ |
| | <i>kápos</i> | ‘in some way, in a certain way’ |
| | <i>kámboso</i> | ‘a certain amount’ |

This *ká*-series is composed morphologically by adding *ká* to a wh-word (the *p*-part and *tí*; see Section 6.7). The *ká*-indefinites, however, do not have wh- or interrogative uses in Greek.³ Some examples are given below:

- (40) a. *Idha kápjion na trexi sta skotiná.*
I saw someone run in the dark.
- b. *Kápjia nosokoma tha ton kálmári.*
Some nurse will calm him down.
- c. *Fáe káti.*
Eat something.

(An older form, *katití*, also exists, but its usage is in decline). The *ká*-indefinite is typically used when the speaker does not have a specific referent in mind, or in situations where the speaker doesn’t care about the identity of the referent; empirical evidence for this comes from two experiments (Giannakidou et al. 2011) showing that *kápjios* is dispreferred situations where the speaker has one particular value in mind, such as below:

- (41) *Thelo na miliso me kápjion glosologo. # Ine aftos o kyrios eki.*
I want to meet some linguist of other. # It’s that guy over there.
- (42) *Thelo na miliso me kápjion glosologo. # To onoma tu ine Veloudis.*
I want to meet some linguist or other. # His name is Veloudis.

³ Giannakidou (1997, 1998) claims that the *ká*-indefinite also has a positive polarity use (like *some*: *I didn’t see some student*), but the facts are not so clear, because speakers do accept the *ká*-indefinite inside the scope of local negation, or non-local negation. The category of positive polarity indefinites is illusive (see Giannakidou and Yoon to appear), and even in English, there may be two incarnations of *some*, the positive polarity one being distinguished as more emphatic, as suggested in Giannakidou and Yoon to appear. For more on intonation, quantifiers, and scope, see Section 6.6.

- (43) Thelo na milso me *kápjon* kathijiti. # Ine o proedros tu tmimatos filosofias.
I want to talk to some professor or other. He is the head of the Philosophy Department.

The unmarked indefinite has no trouble in this fixed-value context:

- (44) Thelo na miliso me *énan* glosologo. Ine aftos o kyrios eki.
I want to talk to a linguist. It's that guy over there.
- (45) Thelo na miliso me *énan* glosologo. To onoma tu ine Veloudis.
I want to talk to a linguist. His name is Veloudis.
- (46) Thelo na miliso me *énan* kathijiti. Ine o proedros tu Glosologikou.
I want to talk to a professor. He is the head of Linguistics.

So, epistemic judgement does constrain the distribution of the *ká*-indefinite, albeit not in a polarity manner. The specific use of *énas* simply remains unmarked.

There is also a use of *énas* 'someone' as an independent QP. The example below is from Holton et al. 1997: 320):

- (47) Irthe {*énas/kápjos*} ke se zituse.
Someone came looking for you.

This use of *énas* is equivalent to *someone*, as we see. For arbitrary reference 'one', Greek employs *kanís* (a cognate of the polarity *kanénas* that we examine later, Giannakidou (1994); *kanénas* itself can also, more markedly, be used in this context):

- (48) Anarotiete *kanís* an. . .
One wonders whether. . .

Finally, it is worth noting the use of *káti* – which means literally 'something' – as an indefinite determiner, akin to a plural indefinite article. In this use, *káti* combines with a plural NP and creates a plural indefinite:

- (49) Píran tiléfono káti fitités.
called telephone káti students.
Nomízo oti ítan o Pétros ke i María.
Think.1sg that be.3pl the Peter and the Mary
Some students called. I think it was Peter and Mary.

The singular **káti fitítis* is impossible. As a plural indefinite, *káti* appears invariant (not inflected for ϕ -features). Languages tend to not have a morphological plural indefinite article (a notable exception is Spanish *unos*), and supplement it with other forms, hence the use of *káti* in Greek. English weak

sm has a similar use as in *I saw sm students*. As a plural indefinite, the *káti* indefinite conveys complete ignorance of reference, as is shown in the example above. There are cases where *káti* imposes anti-specificity in the sense that it cannot refer back to a discourse given set. Consider the following scenario (modeled after Martí's (2009) example (1)):

(50) Context: Teachers A and B are on an excursion with [a group of children]_κ.

Teacher A comes to teacher B running:

a. A: Akouses? [Káti pedhiá]_{J, #κ} xáthikan sto dásos.
 Did you hear? Some children were lost in the forest
 Eftixos pu ta diká mas ta kratísame edo!
 Thank God we kept ours here!

b. A: Akouses? [Kápja pedhiá]_{#J, κ} xáthikan sto dásos.
 Did you hear? Some children were lost in the forest

Káti pedhiá here cannot refer back to the discourse given set of children the teachers A, B were in charge of; Spanish *unos* has been claimed to have the same property (Gutiérrez-Rexach (2001), and this supports further a parallel between the Greek *káti NP.plural* and the plural indefinite article *unos* in Spanish, which remains non-specific in the plural. The *b* example with the plural *kápja* needs to refer to the previously introduced set, just like Spanish plural *algunos* (Martí 2008, 2009). So, unlike English, Spanish and Greek employ two indefinite paradigms in the plural: [*A*+NP.plural], and [SOME+NP.plural] – and these come with distinct patterns of context dependence: the former isn't context dependent, but the latter is. The mystery is that in the singular we tend to have the opposite pattern, and this somehow needs to be explained.

Finally, in support of the equivalence of *káti NP.plural* to a plural SOME consider the following exclamative sentence:

(51) Exi káti kunímata!
 She's got SOME moves!

This is equivalent to the emphatic use of *some*, and makes a rather qualitative statement. Such uses provide further support for the idea that indefinites are generally associated with epistemic judgment.

6.2.5 Value Judgement Quantifiers, and the Role of Intonation

Value judgement quantifiers are those that come with some kind of judgement on the *quantity* they denote. Typical such examples in English are *few*, *many*, *several*, etc. I give below some examples with their Greek equivalents, all inflected for case number and gender. We start with those expressing a positive judgment on the quantity:

- (52) Idhame {polés/arketés/kábofes/merikés} tenies fétos to kálokéri.
 saw.1pl many/several/several/a few movies this summer
 We saw {many/several/a few} movies this summer.

There are variants of MANY NP like [*plíthos* NP.genitive], as in *plíthos tenión* ‘crowd movies.pl.gen.’, and ‘*ápires* NP’ lit. ‘infinite.pl NP.pl’, as in *ápires tenies* ‘tons of movies’ – both designating quantities judged as very large. *Polí* is an adjective – the word for *many* and *much* in Greek – and it inflects, as above, where we find it as *poles* ‘many.fem.pl.acc’. The uninflected variant *polí* ‘many.neuter.sg’ is an adverb – equivalent to English ‘very’, ‘very much’ and ‘a lot’:

- (53) To podílato aftó mu arési *polí*.
 the bicycle this me.gen like.3sg much
 I like this bicycle a lot/very much.

- (54) I María íne *polí* kourasméni.
 María is very tired

As the English *many* and *very*, *polí* is generally emphatic, but in construals like *polí kurasméni* ‘very tired’ *polí* need not bear the main stress; stress could be on the adjective. If stressed, the emphatic variant of *polí*, which I will designate as POLI, delivers equivalence to English ‘too’ (Giannakidou 1997, 2000:465–466). An important diagnostic employed in Giannakidou was that emphatic POLI can license NPIs such as *kanénan*, but the unstressed *polí* cannot:

- (55) a. I María íne POLI kourasméni ja na milísi me kanénan.
 María is *too* tired to talk to anybody.
 b. * I María íne *polí* kourasméni ja na milísi me kanénan.
 * María is *very* tired to talk to anybody.

Hence, intonation realizes in Greek an otherwise lexical difference in English. This we find again with QPs expressing negative judgement such as *líji*, and emphatic *LIJI*. The adjective *lígos*(masc.) *líji*(fem.) *lígo*(neuter) means literally ‘small, little in size or quantity’ as is *Thelo líji zaxari* ‘I would like {a little bit of, some} sugar’. The examples and glosses below concerning intonation are from Giannakidou (2000), and the NPI *típota* serves as a diagnostic:

- (56) a. LIJI fitités ípan *típota*.
few students said.3pl anything
 Few students said anything.
 b. **Líji* fitités ípan *típota*.
a few students said anything
 *A few students said anything.

Non-emphatic *líji* carries a more neutral judgement on the quantity like *a few*, and does not license the NPI. But the emphatic LIJI designates a quantity judged negatively as *not much*, or *less than expected*, like *few*, thereby allowing the NPI. Emphatic accent thus again marks an otherwise lexical distinction in English.

Another negative judgement value quantifier is *eláxisti*, literally the superlative of *lígos*, meaning ‘very few’:

- (57) Eláxisti fitités ípan típota.
 very few students said.3pl anything
 Very few students said anything.

Eláxisti allows for NPIs, as we see. More on the NPI facts in Section 6.6.

6.2.6 Existential Quantifiers in the Partitive Structure

All existentials mentioned in this section occur in the partitive – which in Greek involves using the ‘light’ proposition *apó* ‘of’, or ‘from’, plus a plural DP as is typically the case. When the existentials are used in the partitive, they receive proportional readings, as expected:

- (58) a. Idha {tris/kápjus/lígous/merikús/polús} *apó* tus fitités.
 saw.1sg three/some/a few/several/many of the students
 b. Idha {to polí/tuláxiston} pénde *apó* tus fitités.
 saw.1sg at most/at least five of the students

6.2.7 Existential A-Quantifiers

Adverbial expressions with existential force come in two basic varieties: quantificational adverbs (Q-adverbs) along with adverbials typically denoting frequency, and iterative adverbials (I-adverbials) that denote iteration.

6.2.7.1 Q-Adverbs and Adverbials with \exists -Force

- (59) O Jánis kapnízí {sixná/spánia/póte- póte /káthe tris ke lígo}.
 the John smoke.*imperf*.3sg often/rarely/when-when/every three and little
 John smokes {often/rarely/every now and then/very often}.

Notice the two idiomatic expressions: (a) the reduplication *póte- póte* (of the wh-word meaning *when*) meaning ‘every now and then’ or ‘occasionally’; and *káthe tris ke lígo* which involves a universal quantifier and a coordinate structure. These are perceived as conventionalized expressions. Reduplication,

however, often creates distributive expressions in Greek as we will see soon. As indicated, the verb with Q-adverbs appears in the imperfective, since these sentences are habitual/generic statements and involve quantification of events (Krifka et al. 1995, Giannakidou 1995, 1997, 2009 for Greek). The Greek imperfective also has progressive usages that will not be relevant here.

Another group of frequency adverbials is those that are expressed in English with the prepositions *on*, *in*, *at* (*on Monday*, *in the winter*, *at noon*), or a bare plural naming a day of the week: *On Monday*, *Mondays*, *Wednesdays*. In Greek, these all appear as bare accusative DPs:

- (60) O Jánis érxete {tis kyriakés/ ta vrádia}.
 the John comes.imperf.3sg the Sundays.pl.acc/ the evening.pl.acc
 John comes {on Sundays/at night}.
- (61) To xióni péfti ton ximóna.
 the snow falls.imperf.3sg the.sg.masc.acc winter.masc.sg.acc
 The snow falls in the winter.
- (62) O pyretós anevéni ti níxta.
 the fever rises.imperf.3sg the.sg.acc night.fem.sg.acc.
 The fever rises at night.
- (63) Ti níxta, ta pedhiá kimúnde.
 At night, the children are asleep.

Finally, another group denoting frequency appears in the form *n forés* + *accusative* ‘three times a week/a month’, etc.:

- (64) Ton vlépo tris forés {tin evdomáda/ to mína}.
 Him see.imperf.1sg three times the.acc week.acc/ the.acc. month.acc
 I see him three times {a week/a month}.

So, we see a systematic use of DP in frequency adverbials, where English uses an indefinite QP.

6.2.7.2 Iterative Adverbials

These are: *tris forés*, *pénde forés*, etc.:

- (65) Milísame pénde forés fétos to kálokéri.
 talked.perfective.1pl five times.acc this-year the summer
 We talked five times this summer.

The iterative sentence contains a verb in the perfective, as we see in the gloss. Also noteworthy is the deictic word *fétos* ‘this year’ – a constant meaning ‘the year of utterance’. Greek employs likewise *pér(i)si* for the year prior to the year of utterance, and *tu xrónu* for the year after. Crucially, these are not indexicals, unlike *next year*, *last year* in English which can be anchored to the year of the clause and not necessarily the utterance:

- (66) I María ípe to 2007 oti tha édíne eksetásis *tu xrónu*.
 Mary said in 2007 that she would take the exam in 2011.
 (utterance year: 2010)
Not: Mary said in 2007 that she would take the exam in 2008.

This concludes our presentation of existential structures in Greek. We move on now to universal quantifiers.

6.3 Universal Quantifiers, Distributivity, and Interaction with D

In this section, we discuss strong quantifiers in Greek: universals, and the quantifiers equivalent to *both*, *most*. Greek has two expressions of universal quantification: *ólos* (masc.), *óli* (fem.), *ólo* (neut.) ‘all’, and the indeclinable *káthe* ‘every’ – a distributive universal, variants of which appear with the definite article, e.g. *o káthe* ‘each’. D is also involved in the formation of *both*, *most*. We discuss the two major groupings in turn.

6.3.1 Ólos

Ólos fully inflects for ϕ -features, but I will be referring to the whole paradigm as *ólos* following the grammars. *Ólos* means both ‘all’ and ‘whole’ in Greek. Like in English, it appears in the periphery of a DP, and cannot follow the D:

- (67) a. Psífisan óli i fitités.
 voted.3pl all.pl the.pl. students
 All the students voted.
- b. *i óli fitités
- c. Éfage óli tin túrta.
 Ate.3sg all.acc.fem the.fem.acc cake
 He ate all the cake/the whole cake.
- d. Émine óli tin óra.
 stayed.3sg all.acc.fem the.fem.acc hour
 He stayed the whole hour./ He stayed the whole time.

In the use as ‘whole’, *ólos* can in fact follow the D, and seems to be equivalent to the adjective *olókliros* (*i, o*) ‘whole’.

- (68) a. {i óli / óli i} sizitisi
 the whole/ whole the discussion
 the whole discussion
- b. olókliri i sizitisi
 whole the discussion

Unlike English, *ólos* cannot appear with a bare NP:

- (69) Óla *(ta) pediá ine xaritoména.
 all D children are cute
 All children are cute.

We see that even in generic contexts, as the sentence above could be, *ólos* must be followed by a DP, as DPs are the typical vehicles of generic quantification in Greek. Given this requirement for a definite DP, Giannakidou (2004) I argues that *ólos* is not a quantificational determiner, since all Qs in Greek take NP complements. Rather, I suggested treating *ólos* as an adverbial, i.e. an exhaustivity modifier of the DP, as has been suggested for *all* in English, and similar items in other languages. More supporting evidence for a non-determiner analysis comes from the fact that *ólos*, like *all*, but unlike the determiners we saw earlier, can float:

- (70) a. I fitités éfigan óli norís.
 The students left all early.
 b. I fitités éfigan noris óli.
 c. I fitités óli éfigan noris.
 d. Ta pediá ta ída na févgun óla norís.
 The children, I saw them all leaving early.
- (71) a. * Fitités tris éfigan norís.
 Students three left early
 b. Fitités éfigan tris norís

We see here that *óli* can appear in various places: in the periphery of the DP to the right, after the verb, at the right edge of the sentence. These are unacceptable positions for the existential quantifiers we discussed in the previous section which all appear pre-NP and seem to form a constituent with the NP – they can only be separated via split topicalization, which is marked by intonation breaks, indicated here with comma⁴:

⁴ I think it is also worth noting that Greek has the so called *Genus species topicalization*:

- (i) Kréas, mu arési móno to xirinó.
 Meat, me.gen like.3sg only the.nom pork.nom
 As for meat, I only like (the) pork.

- (72) *Vivlíá, agorasa polá. Periodiká, polí líga.*
 Books, I bought many; magazines, very few.

Hence, the mobility of *ólos*, in conjunction with its extraordinary behavior of combining with a DP allows us to think of it as an adverbial modifier of the DP, maybe a kind of exhaustivity marker or designating *good fit*, as suggested in Brisson (2003) for English *all*.

Finally, *ólos*, does not occur in partitives:

- (73) a. * *óli* *apó tus fitités*
 all of the students
- b. (*o*) *káthe énas* *apó tus fitités*
 each one /every one of the students
- c. *o kathénas* *apó tus fitités*
 everyone of the students

From the universals, the variants of (*o*) *káthe énas* (discussed next) occur in the partitive. ‘Most’ is fine too – *i perisoteri apó tus fitités* ‘most of the students’, but ‘both’ is not so good (but still usable): ? *ke i dhio apó tus fitités* ‘both of the students’.

6.3.2 *Káthe, kathénas: Distributivity, and D-Universals*

Káthe appears to be a universal distributive quantificational determiner in Greek. Holton et al. (1997: 313) characterize it as a distributive determiner too – like *every*. It appears to be a singular uninflected determiner, combining only with a singular argument:

- (74) a. *káthe fitítis*; *káthe fitítí*; **káthe fitités*
 every student.sg.nom; every student.sg.gen; every student.nom.pl
- b. *káthe fitíríia(fem)*; *káthe fitítíríias(fem.gen)*

So, unlike *olos*, the definite and indefinite article, the demonstrative, and the existential quantifiers we discussed earlier which appear to inflect fully (with the exception of a few numerals), *káthe* is morphologically set apart from adjectives and D in the language. But *káthe* can combine with *énas*, and in this case it inflects:

- (75) a. *kathénas*; *kathenós*
 every-one.nom.sg.masc *every-one.gen.sg.masc*
- b. *kathemía*; *kathemías*
 every-one.nom.sg.fem; *every-one.gen.sg.fem*
- c. *kathéna*; *kathenós*
 every-one.nom.sg.neut.; *every-one.gen.sg*

It seems natural to think of *káthe* as ‘every’ and *kathénas* as ‘everyone’. However, there are certain facts that set *kathénas* apart from ‘everyone’. I discuss them in detail next.

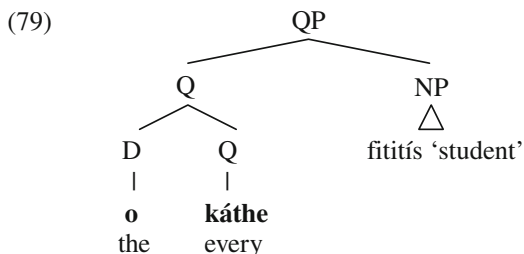
6.3.2.1 The Presence of D and Context Dependence

The first difference is that *kathénas* is always construed with the definite determiner *o*. I give below examples in a generic and episodic context:

- (76) a. *O kathénas* gnorízi oti i ji íne strogilí. generic
 Everyone knows that the earth is round.
- b. ?? *Kathénas* gnorízi oti i ji íne strogilí.
- (77) a. *O kathénas* éfere apó éna vivlío. episodic
 the everyone brought of one book
 Everyone brought one book each.
- b. * *Kathénas* éfere apó éna vivlío.

We see here that *o kathénas* receives both generic and episodic uses – in the latter referring to a discourse specific set of entities which renders the D-*káthe* QP context dependent. Giannakidou (2004) and Etxeberria and Giannakidou (2010) claim that D in this case does not function as *e*-forming, but as a *modifier* that does not saturate (in the sense of Chung and Ladusaw (2003)) the NP: it composes with Q, via an operation called *D-domain restriction* (DR), designated in *d* below. D-DR can be thought of as a morphological or lexical operation on the Q, and semantically it contributes the context set variable C. (Westerståhl (1984, 1985) claimed that the definite article contributes C anyway). C renders the QP anaphoric to a salient discourse set (property). So, for languages that employ D-restriction, contextual restriction is grammaticalized, and is not merely a matter of pragmatics.

- (78) a. $[_{QP} o_{D} + káthe_{Q} [_{NP} fititís_{N}]]$
- b. *o káthe fititís* = [(C) *káthe*] (student) ‘each student’



- a. *o káthe fititís* = [(C) *káthe*] (*fititís*)
- b. $\llbracket Q \rrbracket = \lambda P \lambda R . \forall x P(x) \rightarrow R(x)$
- c. $\llbracket D \rrbracket = \lambda Z_{et,ett} \lambda P_{et} \lambda R_{et} Z (P \cap C) (R)$; Z the relation denoted by Q
- d. $\llbracket D(Q) \rrbracket = \lambda P \lambda R . \forall x (P(x) \cap C(x)) \rightarrow R(x)$

The result of D-DR is a *presuppositional* Q, i.e. a Q imposing on the context the constraint that there be a non-empty set to quantify over. Similar D- universals are observed in Basque, Salish, and Hungarian. Ettxeberria and Giannakidou further suggest that *each* has a structure parallel to the Greek [D-*every*]; only with *each*, D is covert. This idea is supported also by the parallels between D *káthe* and *each* in the domain of distributivity that we discuss next. Finally, Matthewson 1998, 2001 also documents interactions of D with quantifiers in Salish.

The context dependent and therefore presuppositional nature of D-universals means first that these QPs will not be able to quantify over empty sets. This is indeed what we observe. Notice the contrasts below, and the parallel of D- *káthe* and *each* (the examples are from Ettxeberria and Giannakidou (2010)):

- (80) #An vris to *káthe* láthos, tha su dhóso bonus; but there may be no mistakes at all.
#If you find each mistake, I'll give you a bonus; but there may be no mistakes at all.
- (81) If you find *every* mistake, I'll give you a bonus; but there may be no mistakes at all.
An vris *káthe* láthos tha su dhóso bonus; but there may be no mistakes at all.
- (82) If you find *all (the)* mistakes, I'll give you a bonus; but there may be no mistakes at all.
An vris *óla ta láthi* tha su doso bonus; but there may be no mistakes at all.

Unlike *óla* and bare *káthe*, *o káthe* and *each* presuppose the existence of mistakes, and Giannakidou (1997, 1999) characterizes *o káthe* as veridical for this reason.

Second, D-universals cannot refer to non-existing kinds:

- (83) a. *Káthe* monókeros éxi éna kerato. (Ettxeberria and Giannakidou 2010)
Every unicorn has one horn.
- b. # *O káthe* monókeros exi éna kerato.
Each unicorn has one horn.

Again, notice the parallel with *o káthe* and *each*: they both cannot refer to non-existing kinds – but *káthe* ‘every’ can be used for non-existing kind reference (for *each*, see Beghelli and Stowell (1997)).

However, D-universals are fine in characterizing sentences:

- (84) a. Sto programá mas, *o káthe fititís* prépi na epiléksi dhío mathimata simasiologías.
 b. In our program, *each student* must choose two semantics classes.

What is crucial is the restriction ‘in our program’, which renders the example not a predication of a kind, but a characterizing sentence that expresses a generalization about a particular set of students *in our program*. *O káthe* and *each* can be used here.

This section ends with two more points supporting the composition of D and Q. First, D is used to form other presuppositional determiners in Greek: those equivalent to *both*, and *most*:

- (85) Xriázome *ke* *ta* dhío vivlía.
 need.1sg and the two books
 I need both books.
- (86) Agórasa *ta* *perisótera* vivlía.
 bought.1sg the more books
 I bought most books.

‘Both’ in Greek is literally ‘and the two’ – and likewise, we can build presuppositional partives of the form ‘all *n* of the NP’ (e.g. *all three of the books*) in a parallel fashion:

- (87) *ke* *ta* *tría* *vivlía*; *ke* *ta* *íkosi* *vivlía*, etc.
 and the three books; and the twenty books
 ‘all three books’; ‘all twenty books’

These QPs presuppose their quantity, and the use of *ke* ‘and’ can be seen as a join operation, along with the use of D. Likewise, ‘most’ is decomposed in Greek into D and the comparative of *polí* ‘many, much’ – *perisótera*. So Greek appears to use D systematically in the formation of strong quantificational determiners, and not just universal ones. The same pattern is observed in Basque, see Etxeberria’s earlier work, and [Chapter 3](#), this volume.

Second, D plus Q really results in a complex Q, rather than a DP. The competing DP structure is also available, typically with weak quantifiers, in Greek:

- (88) [I [tris fititís pu írthan sto parti]], ítan endelos methisméni.
 [The [three students that came to the party]] were completely drunk

These structures are DPs, as indicated in the brackets, and are interpreted like regular definite descriptions: the denotation of *three students* will be a familiar and unique set of three students. The output of these structures is then of type *e*, and not a GQ.⁵ Giannakidou and Etxeberria offer two arguments that the D-universal structure is not a DP of this kind. First, [*o káthe* NP] cannot co-occur with the demonstrative pronoun (*aftós* ‘this’, *ekínos* ‘that’) – which in Greek *must* embed DPs as we noted at the beginning:

- (89) a. aftós *(o) fititís
 this the student
 this student
 b. ekínos *(o) fititís
 that the student
 that student
- (90) a. {aftí/ekíni} i tris fititís
 these/those the three students
 b. {aftós/ekínos} o énas fititís
 this/that one student
- (91) *{aftós/ekínos} o káthe fititís
 this/that the every student

The demonstratives *aftos/ekinos* require a DP. Since the demonstrative cannot occur with *o káthe*, we must conclude that the *o káthe* constituent doesn’t count as a DP.

The second piece of evidence that [*o káthe* NP] does not behave syntactically as a DP comes from the fact that it cannot be used in the polydefinite structure that we mentioned at the beginning; but a numeral under D is no problem:

⁵ Notice that non-quantity denoting weak quantifiers, are not easily compatible with D:

- (i) I {polí/ líji/ *kápji} fitites pu írthan sto parti, ekanan poli fasaria.
 [The [many/few/*some students]] that came to the party made a lot of noise.

Weak Qs as a class, then, do not generally embed under D. I am not going to address the contrasts here, but I think it suggests that non-quantity weak Qs introduce \exists (inherently, or via existential closure), thus preventing combination with a definite D.

- (92) **o** kókinos **o** tíxos
 the red.nom the wall.nom
 the wall that is red
- (93) a. * *o káthe* o fititís
 b. *o énas* o fititís ‘the one the student’
 c. *i tris* i fitités ‘the three the students’

In a language where DPs duplicate easily and routinely, the impossibility of D-spread with *o káthe* suggests again that *o káthe* does not create a DP.

6.3.2.2 D-Universals, Distributivity, and Distributivity Markers

D-universals are distributive. Although the DP with *oli* can have collective or distributive readings, the *káthe* QP, with or without D, does not have collective readings. We see below that all variants of (*o*) *káthe* are incompatible with a collective predicate like ‘meet’:

- (94) a. *Oli* i fitités sigendróthikan.
 All the students gathered. (collective)
 b. *{*Káthe* fititís / *o káthe* fititís / *o kathénas*} sigendrothike.
 every student/each student/everyone gathered. (distributive)

There are, however, degrees of distributivity. For instance, unlike *everyone*, *o kathénas* is awkward without an overt distributor. In our example earlier which I repeat here, we had *apó éna vivlío*, a typical distributive PP formed with the preposition *apó*; without the proposition, with a simple accusative, the reading strongly preferred is the collective one, which renders the sentence odd again:

- (95) a. *O kathénas* éfere *éna* vivlío.
 The everyone brought of one book
 b. # *O kathénas* éfere *éna* vivlío.
 Everyone brought one book

So, *o kathénas* really needs a distributive phrase to be well-formed. In the absence of an explicit phrase, e.g. when we use an intransitive verb, or an individual level predicate (that cannot distribute over events) as in the next examples, the result is problematic for *o kathénas* – but not for *káthe NP* and ‘everyone’:

- (96) a. # *O kathénas* íne 7 xronón.
 Everyone is 7 years old.
 c. # *O kathénas* kimíthike.
 Everyone slept.
 #Each one slept.

- (97) a. *Káthe* fititis íne 20 xronón.
Every student is 20 years old.
- b. *Káthe* fititis kimíthike.
Every student slept.

This contrast suggests that *o kathénas* is strongly distributive, and cannot be used without a distributive phrase. In English, *each* has been claimed to be so (Beghelli and Stowell 1997) – notice the parallel ill-formedness of #*Each one slept*. If *each* is also a D-universal, then the distributivity property must related to the use of D. *Káthe*, on the other hand, and *everyone*, seem to have no sensitivity to the presence of a distributive phrase and they do not contain D. We can think of them as *weakly* distributive.

Support for both (a) strong distributivity of *o kathénas* and (b) the parallel between D-universals and *each* comes from the fact that *o kathénas* itself is used as a distributive phrase, quite like binominal *each* in English:

- (98) Fagame (apó) tría míla *o kathénas*.
ate.1pl three apples each
We ate three apples each.

We see here that *o kathénas* is used as a distributor of the object QP (with only optional addition of *apó*; recall that *apó* is necessary for distributivity otherwise), just like *each*.

Interestingly, another distributive construal with *káthe* involves *káthe énas*, and no D, which I think can be best thought as ‘each one’.

- (99) Context: I met with a group of students.
- a. *Káthe énas* íxe káti endiaferon na mu pi.
Each one had something interesting to say.
- b. *O kathénas* íxe káti endiaferon na mu pi.
Each one had something interesting to say

The presence of *énas* renders both construals anaphoric in the sense that they need an antecedent, hence the strong requirement that there be a context with explicit mention of students. This requirement of explicit previous mention is not present with *káthe* or *o káthe*, since these can either not be context sensitive (*káthe*), or their domain extension can be accomodated (*o káthe*).

With indefinites, the way to create distributivity markers is by reduplicating:

- (100) a. I fitítés bikan dhío-dhío.
 the students entered two-two
 The students entered in twos/two by two.
- b. O Jánis éfage ta sokolatákia éna-éna.
 the John ate the chocolate.PL one-one
 John ate the chocolates one by one.
- c. *O Jánis éfage to sokolatáki éna-éna.
 the John ate the chocolate.SG one-one

Reduplicated numerals and indefinites in Greek are distributivity markers. Such reduplication seems to be a strategy for distributivity crosslinguistically – e.g. the Hungarian reduplicated *egy-egy* (Farkas 1998) is likewise distributive. Distributive indefinites obviously depend on a plurality to be able to distribute, so they are out with singulars, as we see above in *c*.

6.3.2.3 D-Universals and Indiscriminative Free Choice Readings

We discuss free choice phenomena in detail in Section 6.7, but here it is important to note that the Greek D-universal, but not *káthe*, has the so-called indiscriminative reading (Horn 2000) that appears in English with *just any*. The Greek free choice item *opjosphípotē* (Giannakidou 2001) can also co-occur with *o* (Lazaridou-Chatzigoga (2007), see also examples in Vlachou (2007)). Giannakidou and Ettxeberria are the first to note the indiscriminative reading with *o káthe*:

- (101) a. Tin períodho ton eksetaseon erxete *o káthe fitítis*
 the period the.gen. exas.gen comes the every student
 ke me enoxlí me anoites erotísis.
 and me bothers with silly questions
- b. Tin períodho ton eksetaseon erxete *o opjosphípotē fitítis*
 the period the.gen. exams.gen comes the any.FC student
 ke me enoxlí me anoites erotísis.
 and me bothers with silly questions
 During the exam period, *just about any student* may come by and
 bother me with silly questions.

Here *o káthe* makes reference to a salient set in the discourse – *the students of the speaker* – and expresses a generalization about this set, while also being indiscriminative (in the sense of Horn 2000, 2006): *o káthe fitítis* is read like *any random student of the speaker*, as suggested above by using *just about any* in the translation. We have thus restriction to a particular set (my students), and an arbitrary/pejorative reading at the same time, a reading that often arises with free choice items. Importantly, the pejorative reading does not arise with bare *káthe*:

- (102) a. (Stis meres mas), *o kathénas* borí na vgali dhíploma odhígisis.
(Nowadays), *just anyone* can get a driver's license
- b. (Stis meres mas), *káthe enílikas* borí na vgali dhíploma odhígisis.
(Nowadays), every adult can get a driver's license.

The *a* example, with *o kathénas*, creates a context in which the driving test is simply too easy, and even bad drivers can pass it. But the *b* sentence with *káthe* is simply a statement that it is possible for every adult to take the exam and get a license.

6.3.3 Universal A-Quantifiers

The word for the Q-adverb 'always' in Greek is *pánda*, or the slightly higher register *pándote*:

- (103) a. I Ariadne {*pánda/pándote*} ksexnáí na fáí.
Ariadne always forgets to eat.
- b. I Ariadne {*pánda/pándote*} kimate noris.
Ariadne always sleeps early.

Pánda/pándote belong to the Ancient Greek adjectival paradigm *pas* (masc.), *pása* (fem.), *pan* (neuter) glossed in Holton et al. as 'each, all' (1997: 312) – *ote* in *pándote* is the Ancient Greek word for *when*. In Modern Greek, the *pas* paradigm is still used, again in combination with the D; and it belongs to a slightly formal register:

- (104) a. Irthan i pándes. (*pándes)
came the.masc.pl all.masc.pl
Everybody came.
- b. Kséri ta pánda. (*pánda)
knows 'the.neut.pl all.neut.pl
He knows everything.
- c. Ise to pan ja ména. (*pan)
be the.neut.sg all.neut.sg for me
You are everything to me.

The expressions *i pándes*, *to pan*, *ta pánda* are perceived as *everybody* and *everything* – the word for *universe* is *synpan* (*syn-* 'con'). Notice that unlike *káthe*, *pas* actually declines. The adverb *pánda* is the plural neuter, following a common strategy for creating adverbs from adjectives in Greek.

Other adverbial expressions of universal quantification are formed with *káthe*: *káthe kyriakí* ‘every Sunday’, *káthe mína* ‘every month’, *káthe xrono* ‘every year’, etc.

- (105) (Káthe Kyriakí) páme stin ekleσία (*káthe kyriakí*).
Every Sunday we go to church.
- (106) *Káthe mína* prépi na plirónume tus loghariasímús.
Every month we have to pay the bills.

Káthe can also combine with a clause introduced by the complementizer *pu*, and it means ‘every time that’:

- (107) Sinxízome káthe (forá) pu ton vlépo.
I get-upset every time that I see him.

The verb contains imperfective aspect, since these are habitual sentences. We see also that *káthe* can be followed by the word *forá* ‘time, course’, which allows us to think that the noun is dropped when not present. Adverbs of nonuniversal habitual reference are: *siníthos* ‘usually’, *sixná* ‘often’, and the lower frequencies we discussed earlier with existentials. D never appears in adverbial use with *káthe*: *tin káthe kyriakí* would be impossible:

- (108) * Tin káthe kyriakí páme stin ekleσία.
Every Sunday we go to church.

This concludes our discussion of universal quantifiers in Greek. Now that we have the basics nailed down, we move on to see what kinds of quantifiers occur in existential structures.

6.4 Existential Structures in Greek

Existential structures in English appear in the form *There BE in XP*, where *in XP* is a locative phrase. The study of these structures has a long and venerable tradition in English (Milsark 1977, 1979, Keenan 1987, more recently McNally 1992, Francez 2007, 2009). A main claim has been that the existential structure exhibits the so-called definiteness effect, i.e. it excludes definite DPs, universal and other strong quantifiers, and allows only the (weak) intersective quantifiers. Recent literature on existential structures, however, has made it clear that we need to reconsider the so-called definiteness effect. Here are some examples with definites, *each*, and a proper name in the English existential:

- (109) a. There is Fred in the garden. (McNally 1992: (8))
 b. There was the table in the garden.
 c. There was each faculty member at the meeting.

At the worst, these may be slightly unnatural, and at best, they are fine sentences of English. In Greek there appear to be three structures that can be thought of as equivalent to the English existential: one that involves the verb BE (*íne* 'be.3sg/pl); one that involves the verb HAVE (*éxi* 'have.3sg) and which seems to be the one exhibiting the strongest definiteness effect; and one that employs the verb *exist* (*íparxi* 'exist.3sg). I will present the data in turn.

6.4.1 BE-Existential

The BE-existential accepts intersective quantifiers, but also definites, demonstratives, and names – though not universals, including D-universals. This again can serve as an argument for the non-DP nature of the D-universal:

- (110) a. *Íne* {tría/polá/káti/ meriká/ LIGA/ Ø} vivlíá páno sto trapezi
 There are three/many/a.plural/ several /few/Ø books on the table
 b. *Íne* {tuláxiston/to polí/móno} tría vivlíá páno sto trapezi.
 There are at least/at most/only three books on the table.
- (111) a. *Íne* ta pedhiá sto grafío ke se periménun.
 There are the kids at the office, and they are waiting for you.
 b. *Íne* ola ta pedhiá sto grafío ke se periménoun.
 There are all the kids at the office, and are waiting for you.
 c. # *Íne* káthe pedhí sto grafío ke se periméni.
 There is every child at-the office waiting
 d. # *Íne* to káthe pedhí sto grafío ke se periméni.
 There is each child at-the office waiting
- (112) a. *Íne* o Jánis sto grafío ke se periméni.
 There is the John in the office waiting for you.
 b. *Íne* aftos o enoxilitikos typos eki.
 There is this annoying guy over there.

The BE-existential is dispreferred with mass nouns, even when combined with plausible quantifiers:

- (113) a. # *Íne* záxari ston kafé.
 is sugar in the coffee
 There is sugar in the coffee.

- b. #(Dhen) íne polí zázari.
 (not) is much sugar
 There is much sugar. There isn't much sugar.

6.4.2 HAVE-Existential

In the *éxi* structure, the quantifier is in the accusative case, so it does not function as the subject of the sentence (as with the BE existential), but as the object. I am not going to indicate case marking in the examples below to keep the glosses simple. The *éxi* structure is by far preferred with mass nouns:

- (114) a. Éxi zaxari ston kafé.
 has sugar in the coffee
 There is sugar in the coffee.
 b. (Dhen) éxi polí zázari.
 (not) has much sugar
 There {is/isn't} much sugar.

More examples with intersective quantifiers:

- (115) a. Éxi {tría/polá/káti/meriká/ LIGA/Ø} vivlíá páno sto trapezi.
 There are three.many/a.plural/several /few/Ø books on the table
 b. Éxi {tuláxiston/to polí/móno} pende vivlíá páno sto trapezi.
 There are at least/at most/only five books on the table.

Definites, again, are not impossible with *éxi* – though they are very marginal. But names, universals, and MOST can't be used:

- (116) a. ?? Éxi ta pedhiá sto grafío ke se periménun.
 There are the kids at the office waiting for you.
 b. Éxi afto to pedhí sto grafío ke se periméni.
 There is this boy in the office waiting for you.
 c. ?? Éxi ola ta pedhiá sto grafío ke se periménun.
 all the children
 d. # Éxi káthe pedi sto grafío ke se periméni.
 every child
 e. # Éxi to káthe pedi sto grafío ke se periméni.
 each child
 f. # Éxi ton Jáni sto grafío ke se periméni.
 the John

- (117) # {Éxi /ine} ta perisotera vivlíá páno sto trapezi.
 # There are most books on the table

The judgments here are subtle, and one may expect considerable speaker variation. But as I said earlier, the HAVE-existential seems to be exhibiting the definiteness effect.

6.4.3 *EXIST-Existential*

This is a personal structure: the XP is the subject of the verb and there is agreement (unlike with *exi* where the XP is syntactically the object, and *ine* where the 3sg and 3pl are the same form). Here are some examples, first with mass nouns:

- (118) a. Ipárxi záchari sto spiti.
 exists sugar in the house
 There is sugar in house. (No need to buy more).
 b. (Dhen) ipárxi arketi záchari.
 (not) exists much sugar
 There is enough sugar. There is not enough sugar.

More examples with intersective quantifiers:

- (119) a. Ipárxun {tria/polá/ káti/meriká/ LIGA/ Ø} vivlíá páno sto trapézi.
 exist.3pl three.many/a.plural/several /few/Ø books on the table
 b. Ipárxi {tulaxiston/to polí/mono} éna vivlíó páno sto trapézi.
 Exist.3sg at least/at most/only one book on the table.

Definites, names, universals, and MOST are impossible:

- (120) a. #Ipárxun ta pedhiá sto grafio ke se periménun.
 Exist.3pl the kids at the office waiting for you.
 b. #Ipárxi afto to pedhí sto grafio ke se periméni.
 Exist.3sg this boy in the office waiting for you.
 c. #Ipárxun ola ta pedhiá sto grafio ke se periménoun.
 Exist.3pl all the children at the office waiting for you
 d. # Ipárxi káthe pedhí sto grafio ke se periméni.
 Exist.3pl every child at the office waiting for you
 e. # Ipárxi to káthe pedhí sto grafio ke se periméni.
 Exist.3pl each child at the office waiting for you
 f. # Ipárxi o Jánis sto grafio ke se periméni.
 Exist.3sg the John at the office waiting for you

- (121) # *Ipárxun* ta perisotera vivlíá páno sto trapezi.
 exist.3pl. MOST books on the table

With *ipárxi*, there seems to be a definiteness effect, but there is a question here to what extent this structure is a true existential, and not simply an existence predication.

Finally, all three variants exclude the partitive:

- (122) a. # *Èxi* tría apo ta pedhiá sto grafío ke se periménun.
 has.3sg three of the children at the office waiting for you.
 b. # *Ine* tría apo ta pedhiá sto grafío ke se periménun.
 Is three of the children at the office waiting for you.
 c. # *Ipárxun* tría apo ta pedhiá sto grafío ke se periménun.
 Exist.3pl three of the children at the office waiting for you.

The contrast of the partitive with the simple cardinal *tría pedhiá* or the modified existentials, which are all good, is really striking – and a question worth examining.

6.5 (More) Morphologically Complex Quantifiers

We have already seen that morphological complexity is involved in the formation of presuppositional and distributive universals in Greek (D-universals), and in the formation of other strong quantifiers meaning ‘both’ (*ke i dhío*), and ‘most’ (*i perisóteri*). This overt D-deployment for strong quantifiers is a specific property of Greek (and Basque, see Etxeberria, [Chapter 3](#), this volume); but the complexity we are going to examine now concerns more ‘expected’ complex quantifiers such as comparative quantifiers, those created via boolean compounding (*and*, *or*, *neither...nor...*, *and not*), exception phrases (*all but ten students*), and bounding phrases (*He exercised twice a day, six days a week for one year*). I present each in turn.

6.5.1 Comparative Quantifiers

‘More than’ in Greek is typically formed with *parapáno*, an adverb meaning ‘further, above’, as in *Meni dhío tetragona parapáno* ‘He lives two blocks further up’ or the plain adverb *páno* ‘above’, plus the preposition *apó* ‘of’ (used also in the partitive and in phrasal comparatives). Greek, therefore, unlike English, does not simply employ the comparative MORE (*pio*, *perisotero*) for the *more-than* quantifier. The *perisotero* can also be used, as we shall see, but is less preferred. Another difference from English is that the NP appears typically in the plural with MORE THAN ONE:

- (123) a. Aghorasa parapáno apó éna {vivlíá/?vivlíó}.
 bought.1sg more than one book.pl/book.sg
 I bought more than one {book/*books}.
- b. Parapáno apó énas *fitités* irthan.
 More than one student.pl came.3pl
 More than one student came.
- c. ??/*Parapáno apó énas *fititis* irthē.
 more than one student.sg came.3sg

The contrast with English, which does not allow the plural, is sharp, and suggests that in Greek ‘more than n’ could be treated in the grammar as a plural determiner. The singular improves typically with temporal expressions, or if we replace *parapáno* with *páno*:

- (124) Perimena páno apó mia {ora/??ores}.
 I was waiting more than one {hour/*hours}.

With numbers larger than one, as expected, only the plural becomes possible.

The MORE *perisótero* variant is also possible. It is an adjective, thus an agreeing form, and when used, there is strong preference for the plural. Notice below that the singular is indeed ungrammatical:

- (125) a. Aghorasa *perisótera* apó éna vivlíá.
 bought.1sg more.pl. than one books
- b. *Aghorasa *perisótero* apó éna vivlíó.
 bought.1sg more.sg. than one book
 I bought more than one book/*books.

Here we see that the MORE part also shows plural morphology, agreeing with the NP. In this comparative structure we find a strong pattern with the plural, stronger than with the adverbial.

Another kind of comparative quantifier is ‘more girls than boys’. In Greek this appears as {*pio polá/perisótera*} *koritsia apóti agória*, lit. ‘{more much/more} girls than boys’ – *apóti* being one of the words for THAN that Greek employs (there is a bunch of them: *apó* for phrasal comparatives, *apóti* for clausal comparatives, and *pará* for metalinguistic comparatives; see Giannakidou and Stavrou (2009), Giannakidou and Yoon (2011), Merchant (2009) for more details). *Apó* is strongly dispreferred, and the comparative clause can separate, as in English:

- (126) a. Irtan *perisótera* koritsia {apóti/ *apó} agória.
 came more.pl girls than.clausal/of boys
 More girls came than boys.

- b. Perisótera koritsia irthan apóti agória.
 more.pl girls came than.clausal boys
 More girls came than boys.

The fact that the QP is discontinuous, and the use of clausal than *apóti*, suggests that maybe the [*perisótera NP apóti NP*] is not a constituent – and the comparative part is clausal comparative with TP ellipsis (which is the standard analysis of the *apóti* clause in Greek, Merchant (2009)).⁶

The comparative quantifiers occur uneventfully in the existential structure:

- (127) Exi/Íne perisotera koritsia apóti agória stin taksi mas.
 has/is more.pl girls than boys in-the class ours
 There are more girls than boys in our class.

- (128) a. {Exi/Ine} perisotera apó éna vivlíá sto trapezi.
 has/is more than one books in-the table
 There is more than one book on the table.
 b. {Exi/Ine} parapáno apó mia {óra/??óres} pu se periméno.
 has/is more than one hour/hours that you.acc wait.1sg
 There is more than one hour that I am waiting for you!

Again, the plural is the expected form, with the exception of the temporal expression where the singular is preferred.

6.5.2 Boolean Compounding

Boolean compounding is generally possible. Here are some examples:

- (129) a. *Parapáno* apó 5 alá to polí 10 fitités tha jínun dektí.
 More than 5 but at most 10 students will be admitted
 b. *Perisoteri* apó 5 alá to polí 10 fitités tha jínun dektí.
 More than 5 but at most 10 students will be admitted
 c. {*Parapáno/perisoteri*} apó 5 alá óxi páno apó 10 fitités
 More than 5 but no more than 10 students
 tha jínun dektí.
 will be admitted

⁶ Non-constituency is also suggested by the fact that we can have agreement mismatch between the arguments. Notice below the feminine gender on *perisoteres*, which is recycled for the ellipsis on the second clause which is masculine:

- (i) Perisoteres jinekes irthan apoti andres.
 more.fem.pl women.fem.pl came than men.masc
 More women came than men.

Notice again the use of both the adverbial form and MORE. In the negative (‘no more than’) version, we also use *óxi* which is Greek constituent negation (Giannakidou 1998, Veloudis 1982).⁷ It is also used in other *but*-compounds, as well as constituent negations of quantifiers:

- (130) a. o Jánis alá óxi i María ‘John but not Mary’
 b. Irthan óxi óli i fitités.
 came.3pl not all the students
 Not all the students came.
- (131) Efxaristíthikan *poli ala óxi óli* i kalesmeni.
 enjoyed.3pl many but not all the guests
 Many but not all the guests had a good time.

Neither...nor construals are formed by *óute...óute*. *Oúte* is the NPI-EVEN in Greek (Giannakidou (2007); Greek also has a positive EVEN *akomi ke*). In addition to being a focus particle, the lexical item *óute* is also used as cross-categorical coordinator. The examples below are from Giannakidou (2007: (45)):

- (132) a. Sto párti o Jánis *óute* efage *óute* ípje.
 at-the party the John neither ate.3sg neither drank.3sg
 At the party John neither ate nor drank.
- b. *(Dhen) milisa *óute* me to Jáni *óute* me ti María.
 not talked.1sg neither with the John neither with the María.
 I talked to neither John nor María.
- c. *Oúte* i María (dhen) írthe.
 even the María didn’t come
 Mary didn’t come either.

In the last example, *oute* (*dhen*) is used as *not either* (for more details see Giannakidou (2007)).

⁷ Veloudis (1982) and Giannakidou (1997, 1998), in their studies of negation, identify four negative morphemes in Greek: *dhen/mi(n)*, for sentential negation (mentioned in Section 6.1.1), but also lexical negation *mi* as in *mi-simetoxí* ‘non-participation’, and *oxi* which is used as constituent negation, metalinguistic negation, and external negation as in *Oxi, dhen írthe o Jánis* ‘No, John didn’t come’.

6.5.3 *Exceptive Phrases*

Typical exceptive phrases in Greek are formed with *ektós*, which is an adverb meaning literally *out/outside*, or *beside*, as in *Afto íne ektós thematos* ‘This is beside the topic’, plus our familiar preposition *apó*:

(133) Irthan óli ektós apó to Jáni.
 came all apart from the John
 {All/everyone} came but John.

(134) Irthe káthe fititís ektós apó to Jáni.
 came every student apart from the John
 Every student but John came.

There is also a more formal version with the genitive: *ektós tu Jáni*. As in English, the *ektós* constituent can be separated:

(135) Káthe fititís írthe ektós {apó to Jáni /tu Jáni}.
 every student came apart from the John/ John.gen
 Every student came but John.

Another way to form the exceptive phrase is via *alá óxi* ‘but not John’: *óli í fitités alá óxi o Jánis* ‘all the students but not John’. Again, separation is possible:

(136) a. Idha ólus tus fitités alá óxi ton Jáni.
 saw.1sg all the students but not the John
 b. Olus tus fitités ídha alá óxi to Jáni.
 I saw all the students but not John.

6.5.4 *Bounding Phrases*

These are adverbial phrases like ‘twice a day’, ‘six days a month’. In Greek these appear with accusative DPs:

(137) a. dhío forés tin iméra ‘two times a day’
 two times the.acc day.acc
 b. éksi méres to mína ‘six days a month’
 six days the.acc month.acc
 c. eptá forés to xróno ‘seven times a year’
 seven times the.acc year.acc

Notice that there is no special word for twice, *dhío forés* is ‘two times’. There is a more archaic paradigm ending in *-is*: *dhis* (twice, from *dhío*), *tris* (thrice, from *tría*), *tetrákis* (four times, from *tessera*), and also *polákis* ‘many times’; this paradigm, however is not very productive in Modern Greek, and is used only in very high registers.

We move on now to polarity quantifiers.

6.6 (Negative) Polarity Quantifiers

In this section we discuss *polarity sensitive* quantifiers – also known also as *negative polarity items* (NPIs). Some of these appear only in negative contexts, but others have a broader distribution in nonveridical contexts, i.e. they are sensitive to whether a truth or existence inference is available (Giannakidou 1997 et sequel; Zwarts 1995). The examples here are mostly from my previous work on Greek NPIs.

In the literature on English, *any* is often quoted as an NPI, though *any* is known to have two readings, the NPI reading (with negation) and the free choice reading (with modal verbs and imperatives).

- | | | | |
|-------|----|-------------------------|-------------|
| (138) | a. | I didn't buy any books. | NPI |
| | b. | Any book can be useful. | Free choice |
| | c. | Press any key. | Free choice |

The NPI reading is an existential quantifier in the scope of negation, but the free choice reading conveys *freedom of choice* (Vendler 1967), and it may look like it involves universal quantification – but look at the *c* example (from Giannakidou (2001); see also Horn (2000, 2006) for arguments against the universal analysis of *any*). Greek, like many other languages, employs distinct lexical items for the NPI-existential and the free choice quantifier (for more data from other languages, see Haspelmath (1997)). We discuss free choice in Section 6.7, along with *wh*-quantifiers because the free choice quantifier (but not the NPI) is *wh*-based in Greek.

With negation, Greek employs what appears to be one lexical NPI, but it comes in two intonational variants: an emphatic and a non-emphatic version (Veloudis 1982, Giannakidou 1994, 1997, 1999, 2000). The emphatic one seems to be a strong NPI, licensed only in the scope of negation and antiveridical expressions such as *without*, but the non-emphatic appears in the whole range of non-veridical environments which include, but are not limited to, some (but not all) downward entailing quantifiers. I will start by describing the NPIs with negation. I also discuss minimizers and negative concord in this context. Then, I illustrate the difference in distribution between the emphatic and non-emphatic NPIs. I also compare the non-emphatic NPI to *any*, and show empirical differences suggesting that *any*

is not always licensed but can be rescued in semantically non-licit environments such as *only*, the complements of factive verbs, and comparatives (Giannakidou 2006, Giannakidou and Yoon to appear). Finally, there will be some observations showing a correlation between intonation and quantifier scope in Greek.

6.6.1 *Emphatic and Non-emphatic NPIs in Negative Contexts, and Negative Concord*

Greek has the two paradigms of NPIs illustrated below (Veloudis 1982, Giannakidou 1997 et seq., Tsimpli and Roussou 1996). The glosses are suggestive only:

- | | | |
|-------|---------------------|----------------------------------|
| (139) | kanénas/KANÉNAS | ‘anyone, anybody/no-one, nobody’ |
| | kanénas N/KANÉNAS N | ‘any N/no N’ |
| | típota/TÍPOTA | ‘anything/no thing’ |
| | poté/POTE | ‘ever/never’ |
| | puthená/PUTHENA | ‘anywhere/nowhere’ |
| | kathólu/KATHOLU | ‘at all/not at all’ |

Upper-case letters indicate emphatic accent. *Kanénas* is the masculine, *kamía* is the feminine, *kanéna* is the neuter. The accent is not related to focus for reasons that have been discussed elsewhere (Giannakidou 1997, 1998: 227–231). Given the quantifiers *polí* and *líji*, which also come in emphatic and non-emphatic variants, I suggested that it is best to handle emphatic n-words as lexically distinct from non-emphatic ones, so emphatic accent functions as morphological marking.

The NPI series uses a variety of morphological sources including existential quantifiers (*énas*), universals (*ólu*), and wh- (*pu*, *poté*, with stress shift from *póte* ‘when’). Under negation and antiviridical *without* both paradigms are licensed:

- | | | | | | |
|-------|----|------------------------------|-----------------|---------|--------------------|
| (140) | a. | Dhen ídhe | {típota/TÍPOTA} | o | Jánis. |
| | | not saw | anything | the | Johh |
| | | John didn’t see anything. | | | |
| | b. | * Idhe | {típota/TÍPOTA} | o | Jánis. |
| (141) | | *xoris | na | dhi | {kanénan/KANÉNAN}. |
| | | without | subj | see.3sg | n-person |
| | | without having seen anybody. | | | |

So, both paradigms – emphatic and non-emphatic – are NPIs and need negation. The version with the emphatic is a *negative concord* structure, i.e. since it contains negation plus an NPI that itself appears to be negative – i.e. it can answer negatively as a fragment:

- (142) Pjon ídhes? “Who did you see?”
 {KANÉNAN/*kanénan}
 Nobody/*Anybody.

The ability to answer negatively while participating in negative concord is the hallmark property of NPIs known as *n-words* (Laka 1990, Giannakidou 2006). Two things are important to note here. First, the emphatic NPI gives a negative answer, and second, the non-emphatic NPI cannot do that. In Giannakidou (1998, 2000) I argued that the fragment NPI is the remnant of an elliptical answer that has undergone ellipsis, and ‘given that the remnants in fragment answers are accented, non-emphatics are excluded because they are not accented. Considering that utterances with non-emphatics typically involve pitch accent on negation, we may argue alternatively that ellipsis excludes non-emphatics because the accented negation itself must be deleted’ (Giannakidou 2000: 469).

Another difference between emphatic and non-emphatic NPIs with negation concerns locality. Non-emphatic NPIs, but not emphatics, are licensed in syntactic islands. The example below illustrates this with a relative clause (but other examples are given in Giannakidou (1998); see also Quer (1993) for a similar observation about Catalan *n-words*):

- (143) Dhen prodhosa mistiká [pu ekséthesan {kanénan/*KANÉNAN}]
 not betrayed.1st secrets that exposed.3pl n-person
 I didn’t reveal secrets that exposed anybody.

In this respect, non-emphatics are like *any*, which is also licensed in islands as we see in the translations. Given that non-emphatics appear in islands, it is not surprising that they also appear long-distance, again like *any*. Notice too the contrast with the emphatic NPI:

- (144) I Ariadne dhen ípe oti ídhe {típota/*TÍPOTA}.
 the Ariadne not said.3sg that saw.3sg n-thing
 Ariadne didn’t say that she saw anything.

The observed locality of the emphatic NPI is again typical of negative concord, and is reminiscent of universal quantifier dependencies, which are also clause-bounded (for Greek, see Farkas and Giannakidou (1996)). Three things are

additionally important to note here. First, Greek exhibits what I called *strict* negative concord, i.e. it always requires the presence of negation for the licensing of the emphatic NPI:

- (145) a. KANÉNAS *(dhen) ípe TÍPOTA. Greek
 n-person not said.3sg n-thing
 ‘Nobody said anything.’
- b. Nikt *(nie) uderzyl nikogo. Polish
 n-person not hit.3sg n-person
 ‘Nobody hit anybody.’
- c. Balázs *(nem) beszélt senkivel semmiről. Hungarian
 Balázs not spoke.3sg n-person n-thing
 ‘Balázs didn’t talk about anything with anybody.’

Greek, Hungarian, Japanese (Watanabe 2004), and Slavic languages form a natural class in terms of strict negative concord, and require sentential negation even when more than one n-word occurs in a sentence. In some Romance languages, the presence of negation is not obligatory, and two n-words may co-occur without it as long as one of them is preverbal (Zanuttini 1991):

- (146) Nessuno ha letto niente. Italian
 n-person have.3sg read n-thing
 ‘Nobody read anything.’

So negative concord in Romance is not strict. Given examples like the above, it is conceivable that these Romance n-words form branching negative quantifiers (de Swart and Sag 2002), but it is implausible to argue this for Greek or other strict negative concord varieties, where the NPI n-words alone do not suffice for negative meaning.

Another piece of evidence against negativity of n-words in Greek is that emphatics do not give rise to double negation readings (Giannakidou 2000, 2006):

- (147) KANÉNAS dhen ípe TÍPOTA.
 n-person not said n-thing
 Nobody said anything.
 Nobody said nothing.

The sentence does not have a double negative reading, as we would expect under the hypothesis that the n-words are negative (e.g. *Nobody said nothing*). The strict concord property, locality, and the absence of double negation

readings, along with a number of other diagnostics employed in my earlier work, led me to the conclusion that Greek emphatics are not negative quantifiers, but rather, universal quantifiers that need to be interpreted outside the scope of negation (Giannakidou 1998: chapter 4, 2000). Such universal NPI n-words have since then been identified in Korean (Yoon 2008), Japanese (Yoshimura 2007), and one variety of Hungarian n-words (Surányi 2006). These n-words, crucially, also have emphatic intonation. Puskás (1998) in particular argues for Hungarian that ‘This stress [i.e., the accent observed in Hungarian n-words] cannot be assimilated with the stress assigned in FP [Focus Phrase] which has strong emphatic or identificational reading. Therefore it cannot be argued that Hungarian negative phrases carry the feature [+f]’ (Puskás 1998: 199). Szabolcsi (1981: 530–532) also observes that Hungarian n-words, on a par with universal quantifiers, ‘may not fill the F-position’. If these n-words are universal quantifiers, the fact that the accent is not focus ties in with their semantic function as universals.

6.6.2 *Negation, Intonation, and Scope in Greek*

Since we are talking about emphatic NPIs scoping above negation, it is relevant to note the following generalization (Giannakidou 1998: 71–73, 2000).

(148) *The scope-negation generalization*

In Greek, a pitch-accented quantifier takes wide scope over negation.

This is a general observation about quantifier and negation interaction, and I am relying here on discussion from Giannakidou (2000: 480–481). Consider the sentences below:

- (149) I Anna dhen parakolúthise PARAPÁNO apó tría mathímata
 the Anna not attended.3sg more from three classes
 Anna didn’t attend more than three classes.

The English version of this sentence has two possible readings, depending on whether *more than three classes* scopes over negation or not. The first possibility is illustrated in the LF where *more than three classes* has adjoined to IP, and takes wide scope over negation. The second possibility indicates adjunction of *more than three classes* to VP, below negation.

- (150) a. [IP more than three classes₁ Anna didn’t [VP attend t₁]]
 b. [IP Anna didn’t [VP more than three classes₁ [VP attend t₁]]]

Under the *a* reading, we know that there were more than three classes from which Anna was absent, and we have no idea how many classes she actually attended. In the *b* reading, on the other hand, with negation taking wide scope, Anna attended no more than three classes, and we don't know how many classes Anna was absent from. Hence, the two readings are true under distinct circumstances.

Now, the Greek sentence, with the accented QP, has only the wide scope QP reading, whereas accent on negation *dhen* permits only the wide scope negation reading. The use of 'accent' here is a bit impressionistic, but see Baltazani (2002) for a more phonologically informed description. So, accent seems to indicate the element taking wide scope. The point can be further illustrated with the interaction between negation and *kápjon fititi* 'some student':

- (151) a. DHEN idha kápjon fititi.
 not saw.1sg some student
 I didn't see any student.
- b. Dhen idha KÁPJON fiti.
 not saw.1sg some student
 There was some student that I didn't see.

The sentence *a* has only the wide scope negation reading below, and the *b* sentence can only have wide scope *kápjon fititi*:

- (152) a. $\neg\exists x[\text{student}(x) \ \& \ \text{saw}(I, x)]$
 b. $\exists x[\text{student}(x) \ \& \ \neg\text{saw}(I, x)]$

A final point before closing is that another NPI, the minimizer, is formed in Greek with an emphatic bare singular. Bare arguments (singulars and plurals as we see) are generally allowed under negation and their interpretation is a narrow scope existential (as Carlson (1977) observed for English bare arguments under negation). This is an interpretation akin to that of the non-emphatic NPI-existential:

- (153) a. Dhen efaje BUKIA.
 Not ate bite
 He didn't eat a bite.
- b. Dhen agorasa vivlíá.
 I didn't buy books.

Minimizers, interestingly, also bear accent (see the *a* example above) – but cannot be argued to scope above negation. Notice however, that the bare argument is *not* a quantifier; so, we can still maintain Giannakidou's

generalization that pitch accent on the *quantifier* indicates wide scope. The accent on the minimizer can be taken to constitute a marking of the conventionalization of the item as a minimizer NPI – maybe an overt reflex of NPI-EVEN *oute*, which can also be used in the minimizer NPI (Giannakidou 2007). Notice that the bare plural in the *b* example does not bear accent and is not conventionalized as an NPI.

6.6.3 Nonveridical Contexts: Only Existential NPIs

As mentioned earlier, the non-emphatic NPI is a narrow scope existential inside the scope of negation, so it is the Greek counterpart to NPI *any* – and just like *any*, its distribution is not limited to the scope of negation. The existential NPI appears in a broad variety of non-veridical contexts including questions, conditionals, modal verbs, the future, imperatives, subjunctive complements of non-veridical verbs. The emphatic NPI in these environments is systematically ruled out:

- (154) Píjes {poté/*POTE} sto Parísí?
 went.2sg ever in-the Paris
 Have you ever been to Paris?
- (155) An dhis tin Eléna {puthená/*PUTHENA}, na tis milísis.
 If you see Eléna anywhere, talk to her.
- (156) Elpízo na emíne {kanéna/*KANÉNA} komati.
 hope.1sg subj remained.3sg any piece
 I hope there is a piece left.
- (157) Pare {kanéna/*KANÉNA} mílo.
 take.imp.2sg any apple
 Take any apple.
- (158) Borí na írthe {kanénas/*KANÉNAS}
 can.3sg subj came.3sg any person.
 It is possible that anyone/someone came. (epistemic modal)

The nonemphatic NPI is further licensed in disjunctions, with various modalities, and habitual sentences. With a few exceptions (noted in the literature), these are also licensing contexts for *any*, though the free choice reading is considerably preferred (see my earlier work for extensive data). The Greek NPI does not have a free choice reading, and it is also non-scalar (Giannakidou 1997, 1998, 2009). Rather, it seems to be a narrow scope indefinite that contains a dependent variable, i.e., one that can never be interpreted as a free variable (Giannakidou 2011), and which therefore needs to be licensed via binding (either via \exists -closure

under negation and nonveridical operators, or via binding by a Q-operator). Additionally, *kanénas* brings in a condition of referential vagueness (Giannakidou and Quer 2011), and Holton et al. (1997) characterize it as ‘non-specific’.

As far as downward entailing (DE) contexts go, NPIs are OK with negative value judgement quantifiers, e.g. emphatic LIJI or *elaxisti* ‘very few’, but not with something more neutral (in terms of judgement) as *at most n*:

- (159) a. {Eláxisti/?LIJI} ánthropi ídhan típota.
Very few/Few people saw anything.
b. * To poli 5 ánthropi ídhan típota.
At most five people saw anything.

Notice the relative awkwardness of *LIJI* ‘few’ – the judgements I have collected through the years vary a lot regarding this quantifier. Given the impossibility of AT MOST, we must conjecture that the negative judgement is important for licensing, and not DE per se.

Finally, it is important to add that there are environments where *any* is fine, but the Greek NPI cannot occur. Some such environments are *only*, the complements of emotive factive verbs, and comparatives. We review these next, in connection with minimizer NPIs.

6.6.4 Non-licensing Environments for Greek NPIs

In English, *any* and minimizers like *say a word* are cited as appearing in the complement of emotive factive verbs (positive *and* negative), with *only*, and in comparatives:

- (160) a. I am glad he said a word!
b. I’m glad we got any tickets. (Kadmon and Landman 1993).
c. Mary regrets that she lifted a finger.
d. Only Mary {gives a damn/said anything}.

Comparatives

- (161) a. Roxy is prettier than **anyone** of us. (phrasal)
b. Roxy ran faster than **anyone** had expected. (clausal)
c. He said the sky would sooner fall than he would **budge an inch**.

The Greek NPI and the minimizer – formed with a bare nominal, as must be recalled – are excluded from these contexts (see Giannakidou (2006), and Giannakidou and Yoon (2010), where the comparative examples are drawn from):

- (162) a. *Xérome pu *dhinis dhekára*.
I am glad you give a damn.
- b. *Metániosa pu ipa *típota*.
I regret that I said anything.
- c. */# Mómo i María {*dhini dhekára/idhe típota*}.
Only Mary gives a damn/said anything.
- d. #I María metániose pu *ipe leksi*.
Mary regrets that she said a word.
- (163) I María tréxi grigorótera apó {opjondhípote/*KANÉNAN/*kanénan}.
Mary runs faster than anybody.
- (164) *I María diavase perisótera arthra apóti tis ixé protini *kanénas kathijitís*.
Mary read more articles than suggested any professor
Mary read more articles than any professor has suggested.

So we see this asymmetry between Greek NPIs and minimizers, on the one hand, and English *any* and minimizers, on the other, as regards the possibility of *rescuing* (Giannakidou 2006), i.e. sanctioning by global pragmatic inferencing. Rescuing is a secondary sanctioning mechanism, which legitimizes NPI *in violation* of LF licensing: NPIs here are found in a *veridical* context without an ‘official’ licenser.

This concludes our discussion of NPIs. We move now to wh-quantifiers, our final topic.

6.7 Wh-Based Quantifiers and Free Choice

Greek has three paradigms of wh-quantifiers: one for interrogatives, one for relative clauses, and one for free relatives (called ‘correlative’ quantifiers in Holton et al. (1997)). In the relative clause, we see again the workings of the definite (D) article *o*, since it appears on top of the wh-component, either forming a unit with the wh-word (free relatives), or in addition to it (relative clauses). The free relative, D-containing construal is the source for free choice quantifiers (Giannakidou 2001, Giannakidou and Cheng 2006). So, overall we observe a manipulation of wh-forms (and meaning) by definiteness – a fact challenging the link, found in recent works (e.g. Kratzer and Shimoyama 2002), between interrogative (propositional) semantics and free choice. The Greek wh-patterns suggest a richer interaction between wh-words and definiteness that fits better classical models where the wh-words are sets of individuals (Cooper 1983), operated upon directly via e.g. exhaustification and intensionalization.

6.7.1 The Morphological Paradigms

The interrogative wh-paradigm is given below, followed by examples. I give the labels in the nominative, but bear in mind that wh-words, like the other quantifiers in Greek, also inflect for gender, number, case. I am also giving the variants in the Greek alphabet to see the relations between paradigms. We can think of the interrogative paradigm as the *p*-paradigm:

(165)	<i>pjos, pja, pjo</i>	‘who’	Greek: ποιός, ποιά, ποιό
	<i>pjos, pja, pjo N</i>	‘which N’	
	<i>ti</i>	‘what’	τί
	<i>ti N</i>	‘what kind’	
	<i>póte</i>	‘when’	πότε
	<i>pu</i>	‘where’	πού
	<i>pos</i>	‘how’	πώς
	<i>póso</i>	‘how much’	πόσο
	<i>jatí</i>	‘why’	γιατί

- (166) a. *Pjos efaje ti supa?*
Who ate the soup?
- b. *Pja mitera den irthe?*
Which mother didn’t come?
- (167) a. *Ti efages?*
What did you eat?
- b. *Ti anthropos íne?*
What kind of man is he?
- (168) a. *Pu ton idhes?*
Where did you see him?
- b. *Poso káni?*
How much does it cost?

The *p*-paradigm is used only with interrogative meaning. For relative pronoun use, the definiteness marker—which is the invariant form of the definite article as a bound morpheme (Giannakidou and Cheng 2006): *opios, opia opio*, etc.:

(169)	<i>opíos, opía, opío</i>	‘who.Rel.’	Greek: οποιός, οποία, οποίο
	<i>opíos N</i>		
	<i>opóte</i>	‘when.Rel.’	οπότε
	<i>ópos</i>	‘how.Rel.’	όπως
	<i>ópu</i>	‘where.Rel.’	όπου

- (170) a. ο άνδρας *(ton) *opío* agará i María
 the man.nom the.acc which.masc.sg.acc love.3sg the María
 the man that Mary loves
- b. i jinéka *(i) *opía* diamartirithike
 the woman.sg.fem.nom the.acc which.masc.sg.acc complained
 the woman who complained
- (171) a. to meros ópu sinandithíkame
 the place where we met
- b. (We agreed to meet at 9 pm), *opóte* ke pigame
 We agreed to meet at 9, which is when we went

Greek also has an uninflected relative pronoun *pu* (που) which is used in more colloquial speech as a relative *that*:

- (172) a. ο άνδρας pu agará i María
 the.masc.sg.nom man.msc.sgnom that love.3sg the María
 the man that Mary loves
- b. i jinéka pu diamartirithike
 the.sg.fem.nom woman.sg.fem.nom that complained
 the woman who complained

Greek employs yet a separate paradigm for free relative and correlative structures, which consists of the definite marker *o* plus the interrogative *p*-word – and a stress shift to *ó*, as indicated. *O* appears again as a bound morpheme on the *p*-word and remains invariant. I am using below the (*ever*) paraphrase as a handy way to show that this is free relative use, i.e. the complement of this pronoun is always a clause, just like with the *wh-ever* paradigm in English:

- | | | | |
|-------|-------------------|-----------------|-----------------------------|
| (173) | όρjος, όρjα, όρjο | ‘who(ever)’ | Greek: όποιος, όποια, όποιο |
| | ότι | ‘what(ever)’ | ό,τι |
| | ότι N | ‘what(ever) N’ | |
| | όποτε | ‘whenever’ | όποτε (vs. Rel: όπότε) |
| | όπου | ‘wherever’ | όπου |
| | όπως | ‘whichever way’ | όπως |
| | όσο | ‘as much as’ | όσο |

Some examples:

- (174) a. Parigila óti parigile o Jánis.
 ordered what ordered the John
 I ordered what John ordered.

- b. Káne óti su pi i mitera su.
do what you tell the mother your
Do what your mother tells you.
- c. Ópjos irthe sto parti efxaristithíke.
Whoever came to the party had a great time.
- d. Kándo ópos thélis.
Do it whichever way you want.
- e. Ópu pao, me akoluthi.
Wherever I go he follows me.
- f. Fae óso thélis.
Eat as much as you want.

- (175) *Dhiavase ópja efimerida.
read wh-ever newspaper
*Read whichever newspaper.

Note the inability of the free relative *p*-word to take an NP complement – it always requires a clause. Free relatives in English have been analyzed as definite descriptions by Jacobson (1995), who argues for a covert iota operator on top of the *wh*-set. In Greek, Alexiadou and Giannakidou (1998) argue that *o* is the overt counterpart of iota, hence the Greek free relative is overtly a definite description.

In English –*ever* is obligatory for free relative use – *whoever came to the party*, but not **who came to the party* – but in Greek plain free relatives are possible, as we saw in the examples above. A free choice variant of the free relative *p*-word can be formed by adding the free choice marker –*dhíποτε* (Giannakidou 1997, 2001), which then bears the main stress in the word. The addition of free choice marking to a *wh*-form for free choice is a common strategy cross linguistically.

- | | | | |
|-------|--|----------------------|--------------|
| (176) | opjosdhíποτε, opjadhíποτε, opjodhíποτε | ‘whoever’ | οποιοσδήποτε |
| | opjosdhíποτε, opjadhíποτε, opjodhíποτε N | ‘whichever’ | |
| | otidhíποτε | ‘whatever’ | |
| | otidhíποτε N | ‘whatever N’ | ο,τιδήποτε |
| | ópotedhíποτε | ‘whenever’ | οποτεδήποτε |
| | ópudhíποτε | ‘wherever’ | οπουδήποτε |
| | óposdhíποτε | ‘definitely’ | οπωσδήποτε |
| | ósodhíποτε | ‘no matter how much’ | οσοδήποτε |

There is a long-standing debate on whether free choice quantifiers are variants of universal quantifiers or not. Giannakidou (1998, 2001) argues that Greek FCIs are best analyzed as variable contributing elements without force of their own – i.e. indefinites (see Horn (2000, 2006) for a similar analysis of English *any*).

Giannakidou and Cheng (2006) further identify free choice free relatives as *definite* FCIs, relying on the analysis of free relatives as plural definites of Jacobson. So jointly, the universal effect of FCIs, when it arises, can be accounted for by (in)definiteness and there is no need to recourse to a universal analysis.

6.7.2 *Distribution of FCIs: Polarity and Variation*

Greek FCIs appear to have limited distribution too, and are excluded from positive veridical sentences (in the simple past). So FCIs are polarity items in this broad sense. Unlike NPIs, however, FCIs do not improve with negation, as long as the sentence remains episodic (Giannakidou 1997, 1998, 2001). I give below examples from Greek and Spanish, Catalan:

- (177) a. * Idha **opjondhípote.** (Greek; Giannakidou 2001)
 saw.perf.1sg FC-person
 ‘*I saw anybody.’
- b. * Dhen idha opjondhípote.
 not saw.perf.1sg FC-person
 Intended: ‘I didn’t see anybody.’⁸
- (178) * (Non) Expulsaron del partido a **cualquier** disidente. (Spanish)
 not expel.3pl from-the party ACC FC dissident
 Intended: ‘They didn’t expel any dissident from the party.’ (Quer 1999)
 ‘*They expelled any dissident from the party.’
- (179) * (No) Li va comprar **qualsevol** ram. (Catalan)
 Not her/him aux.3sg to.buy FC bouquet
 Intended: ‘S/he didn’t buy him/her any bouquet.’ (Quer 1998)
 ‘*S/he bought him/her any bouquet.’

Rather, FCIs are licensed via binding: they contain a world variable that needs to be bound, so they must be found in the scope of intensional and modal operators (all nonveridical) that can bind it. This is why FCIs cannot be used in an episodic context. I give some examples here. Notice that I am using the *–or other* paraphrase to get the difference between the FCI and the NPI:

⁸ Giannakidou (1998, 2001) mentions a so-called ‘indiscriminative’ (after Horn 2000) use of DCI with negation, in cases such as:

- (i) Dhe milise me (*enan*) *opjondhipote*—milise me ton proedro!
 not talked.3sg with a FCI.person—talked.3sg with the president
 She didn’t talk with *just anybody*—she talked with the president!

Such uses of FCIs are common crosslinguistically, and usually are marked, e.g. with *just* in English, and the indefinite article in Greek.

Protasis of conditionals

- (180) An kimithis me {**opjondhípote/kanénan**} tha se skotoso.
 if sleep.2sg with FC-person/NPI-person FUT you kill.1sg
 If you sleep with anybody, I'll kill you.

Directive intensional verbs (selecting subjunctive)

- (181) I Ariadne epémine na afisoume {**opjondhípote/kanénan**}
 the Ariadne insisted.3sg subj let.1pl FC-person/NPI-person
 na perasi mésa.
 subj come.3sg in
 Ariadne insisted that we allow anyone in.
 With *kanénan*: 'Ariadne insisted that we allow *someone or other* to come in.'

- (182) Borí na ánapse {**opjosdhípote/kanénas**} to fos.
 can.3sg subj lit.3sg FC-person/NPI-person the light
 Anyone may have turned on the light.
 With *kanénas*: 'Someone or other must have turned on the light.'

- (183) Borís na dhanistis {**opjodhípote/kanéna**} vivlío.
 can.2sg subj borrow.2sg FCI / NPI book
 You may borrow any book.
 With *kanéna vivlío*: 'You may borrow *some book or other*.'

- (184) Dhiálekse {**opjodhípote/kanéna**} vivlío.
 choose.2sg FCI / NPI book
 'Choose any book.'
 With *kanéna vivlío*: 'Choose *some book or other*.'

- (185) **Opjadhípote ghata** kinigai pondikia.
 Any cat hunts mice.

For the differences between FCIs and Greek NPIs in non-veridical contexts, see Giannakidou and Quer (2011), and Giannakidou (2011).

6.8 Epilogue

Greek and English, both Indo-European languages, obey the basic GQ syntax and employ quantificational determiners that select NP arguments. The two languages, however, were found to exhibit some interesting differences in the morphological make-up of quantificational determiners that, if adequately appreciated, can be instructive for uncovering what we can think of as the finer structure of quantification. One fact that needs to be singled out, and

which impacts a number of areas, is the systematic employment of the definite article in quantifier composition. The involvement of the definite article in wh-formation and with universal quantifiers, has been a constant in the diachrony of Greek (Tzartanos 1945). Regarding D-universals, if the suggestion that D expresses domain restriction (Giannakidou 2004, Etcheberria and Giannakidou 2010) is correct, then Greek grammaticalizes the contextual domain restriction argument, so domain restriction is not merely a factor in pragmatics. Concerning wh-words, the involvement of D can offer valuable guidance in assessing current ideas about the nature of quantification, especially when it comes to proposals that establish a link of ‘classical’ quantification with interrogative semantics via Hamblin alternatives (Kratzer and Shimoyama 2002). Any such attempt to use propositional alternatives as the source of quantification would be challenged by a language like Greek, where we see overtly *individual*-based operations on the wh-words, such as definiteness, domain restriction, or exhaustification.

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Chapter 7

Quantifiers in Modern Hebrew

Itamar Francez and Katja Goldring

7.1 Some Basics of Hebrew

This article describes quantifiers in Hebrew, focusing mostly on the standard *spoken* variety of modern Hebrew. Spoken forms diverge significantly in many cases from written and prescribed forms. Such variations are only noted when relevant. Examples are written in loose transliteration, by which we mean that only those phonological forms distinguished in the standard spoken dialect are distinguished in the transliteration.¹ We use S for the palatal fricative, x for the voiceless uvular fricative, and ʔ for the glottal stop. In many cases, the glottal stop is ignored in transliteration.

Hebrew is an SVO language. Verbs come in three tenses (past, present, future), and generally agree with the subject in person, number and gender, though person and gender distinctions are neutralized in parts of the paradigm.

Adjectives follow the noun they modify. Hebrew has prepositions and no case marking except for the accusative marker *et*, which marks formally definite nouns, i.e. nouns marked with the definite affix *ha*, proper names, and pronouns. Following is a short description of the main facts about definiteness. For more discussion see e.g. Danon (2001, 2008). Definite quantifiers are discussed in more detail in Section 7.5.1.

7.1.1 Definiteness

Definiteness is marked by the clitic *ha* on the head noun, and obligatorily also on all modifying adjectives / demonstratives inside a noun phrase.

¹ The main point of variation from other spoken varieties here is that the voiced pharyngeal stop distinguished in some varieties is here pronounced as the glottal stop, and the voiceless pharyngeal fricative as the voiceless uvular fricative.

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- (1) a. ha-yeled *(ha)-katan
 the-boy the-little
 The litte boy
- b. ha-yeled *(ha)-ze
 the-boy the-this
 This boy

The prepositions *be* ‘in’ and *le* ‘to’ form portmanteaus with the definite article *ha*. We refer to such forms as definite prepositions throughout.

- (2) a. *ba* ‘in the’
 b. *la* ‘to the’

The Construct State

Hebrew also has a definite form traditionally known as the ‘construct state’ (See Heller (2002) for a recent discussion and references). While this form is not productive in spoken Hebrew, it features in many contexts discussed throughout the paper. A construct state NP is formed from a head noun in a special form called the construct state form, followed by a noun in the unmarked, ‘absolute’ form. The construct form of a noun can be suppletive to, derived from, or identical to the absolute form. (3) and (4) exemplify derived and suppletive forms, respectively. Note that definiteness is marked on all modifiers.

- (3) *tmuna* ‘picture’
- a. *tmunat ha-yeled ha-katan*
 picture.cs the-boy the-little
 the picture of the little boy
- b. *tmunat yeled katan*
 picture.cs boy little
 A/the picture of a little boy
- (4) *iSa* ‘woman’
- a. *eSet ha-Saxen*
 woman.cs the-neighbour
 the neighbor’s wife
- b. *eSet saxen*
 woman.cs neighbour
 a neighbor’s wife; the wife of a neighbor

In more formal registers, the construct state noun can participate in a possessive construction involving the preposition *Sel* ‘of’. In this construction, the construct state noun is suffixed with a morpheme expressing the person, number and gender of the possessed noun.

- (5) a. *tmunat-o Sel ha-yeled ha-katan*
 picture.cs-3ms the-boy the-little
 The picture of the little boy
- b. *iSt-o Sel ha-Saxen*
 woman.cs-3ms of the-neighbor
 The neighbor's wife

7.1.2 *Quantifier Floating*

As in English, quantifier floating is only possible with quantifiers that require a definite noun. The quantifiers that may be floated include *kol* in its meaning 'all' (but not when it means 'every' and 'each', in which case it does not occur with a definite noun), *rov* 'most' (literally, 'majority'), all numerals greater than one, and the quantifier *xelek* 'part'. Floated quantifiers appear in the construct state form² and with morphology tracking the person, number and gender of the common noun expressing the domain of the quantifier.

Generally, a quantifier floated from the subject of a sentence (matrix or embedded) can occur either immediately after the subject or else inside the predicate phrase, though we find that the quantifiers *rov* 'most' and *xelek* 'part of' become less acceptable in predicate-internal position. Examples (6) through (13) show quantifier floating from subject position with transitive and intransitive verbs.³ When *xelek* is not floated, it requires the preposition *me* 'from' on its complement, as shown (12).

- (6) a. *kol ha-yladim yeSenim.*
 all the-boy.mpl sleep.mpl
 All the boys are sleeping.
- b. *Ha-yladim (kulam) yeSenim (kulam).*
 the-boy.mpl all.cs.3mpl sleep.mpl all.cs.3mpl
 The boys are all sleeping.
- (7) a. *kol ha-sefer nirtav.*
 all the-book got.wet.3ms
 The whole book got wet.
- b. *ha-sefer (kulo) nirtav (kulo).*
 the-book all.cs.3ms got.wet.3ms all.cs.3ms
 The book got all wet.

² Possibly, all determiners taking a definite complement appear in the construct state form. See discussion in Section 7.2.

³ Numeral quantifiers encode gender, both in the absolute and the construct state form. See Section 7.2.3.

- (8) a. kol ha-yladim axlu glida.
all the-boy.mpl ate.3pl ice cream
All the boys ate ice cream.
- b. Ha-yladim (kulam) axlu (kulam) glida (kulam).
the-boy.mpl all.cs.3mpl ate.3pl all.cs.3mpl ice cream all.cs.3mpl
The boys all ate ice cream.
- (9) a. SloSet ha-yladim yeSenim.
three.m.cs the-boy.mpl sleep.mpl
The three boys are sleeping.
- b. ha-yladim (SloStam) yeSenim (SloStam).
the-boy.mpl three.cs.3mpl sleep.mpl three.cs.3mpl
The boys are all three of them sleeping.
- (10) a. SloSet ha-yladim axlu glida.
three.m.cs the-boy.mpl ate.3pl ice cream
The three children ate ice cream.
- b. ha-yladim (SloStam) axlu (SloStam) glida
the-boy.mpl three.cs.3mpl ate.3pl three.cs.3mpl ice cream
(SloStam).
three.cs.3mpl
The children ate all three of them ice cream.
- (11) a. rov ha-yladim yeSenim.
most the-boy.mpl sleep.mpl
Most (of the) children are sleeping.
- b. ha-yladim (rubam) yeSenim (?rubam).
the-boy.mpl most.cs.3mpl sleep.mpl most.cs.3mpl
Most (of the) children are sleeping.
- (12) a. xelek me-ha-yladim yeSenim.
part from-the-boy.mpl sleep.pl
Some of the children are sleeping.
- b. ha-yladim (xelkam) yeSenim (?xelkam).
the-boy.mpl part.cs.3mpl sleep.pl most.cs.3mpl
Some (of the) children are sleeping.
- (13) a. rov ha-yladim axlu glida.
most the-boy.mpl ate.3pl ice cream
Most (of the) children ate ice cream.
- b. ha-yladim (rubam) axlu (?rubam) glida (??rubam).
the-boy.mpl most.cs.3mpl sleep.pl most.cs.3mpl
Most (of the) children ate ice cream.

When the quantifiers *rov* and *xelek* are floated, they are often preceded by the preposition *be* 'in', as in (14), in which case they are impeccable in predicate-internal position, and are also ambiguous between D-quantification and A-quantification.⁴

- (14) a. ha-sfarim retuvim be-rubam.
 the-book.mpl wet.pl in-most.cs.3mpl
 Most (of the) books are wet. / The books are mostly wet.
- b. ha-sfarim retuvim be-xelkam.
 the-book.mpl wet.pl in-part.cs.3mpl
 Some of the books are wet. / The books are partly wet.

Judgments are less clear with ditransitive predicates. Our intuition is that a subject quantifier cannot readily be floated into the verb phrase in a ditransitive clause. Examples such as (15) are certainly marked, though we do not find them clearly ungrammatical.

- (15) ha-morim her'u (?kulam)
 the-teacher.mpl showed.3pl all.cs.3mpl
 le-dani (?kulam) et ha-sefer
 to-Dani all.cs.3mpl acc the-book
 (?kulam)
 all.cs.3mpl
 The teachers all showed Dani the book.

Floating out of object position is exemplified in (16), and out of indirect object position in (17).

- (16) axalti et ha-tapuxim kulam.
 ate.1s acc. the-apple.mpl all.cs.3mpl
 I ate all the apples.
- (17) natati tapuxim la-yladim kulam.
 gave.1s apple.mpl to.the-boy.mpl all.cs.3mpl
 I gave apples to all the boys.

When a floated quantifier can be associated with more than one NP in the sentence, as in (18), ambiguity arises.

- (18) ha-morim her'u li et ha-sfarim kulam.
 the-teacher.mpl showed.3pl to.me acc. the-book.mpl all.cs.3ms
 The teachers showed me all the books.
 The teachers all showed me the books.

(19) shows that multiple floated quantifiers are possible, but may not be adjacent.

⁴ These two points are due to Edit Doron (Personal Communication).

- (19) a. SloSet ha-yladim ra'u et kol ha-sfarim.
three.m.cs the-boy.mpl saw.3pl acc. all the-book.mpl
The three boys saw all the books.
- b. ha-yladim ra'u SloStam et ha-sfarim kulam
the-boy.mpl saw.3pl three.m.sc.3mpl acc. the-book.mpl all.cs.3mpl
The three boys saw all the books.
- c. *ha-yladim ra'u et ha-sfarim SloStam kulam / kulam SloStam.

For more discussion of quantifier float in Hebrew see Shlonsky (1991).

7.1.3 Negative Concord

Hebrew is a negative concord language. In the presence of matrix negation, certain negative forms which we refer to as *n-words* occur. Examples are given in (20) and (21). While some pronouns, such as *klum* 'nothing' in (20-b), have special forms, other pronoun and all full NP *n-words* are formed with one of two negative forms: *af* (glossed as *any_c*, since it can only combine with count nouns), which literally means 'also', and *Sum* (glossed as *any_m*, since it can combine with mass nouns and plurals). (22) shows that mass nouns and plurals can only occur with *Sum*. A recent discussion of *Sum* and *af* is found in Levy (2008).

- (20) a. miSehu raa maSu
someone saw.3sg something
Someone saw something.
- b. **af** exad lo raa **klum**
any_c one neg saw.3sg nothing
Nobody saw anything.
- c. **lo** raiti **Sum** davar.
not saw.1s *any_m* thing
I didn't see anything.
- d. **lo** moxrim et ze be-**af/Sum** makom.
neg sell.3pl acc. this in-*any_c/any_m* place
They don't sell this anywhere.
- (21) a. **af/Sum** yeled lo diber.
any_c/any_m boy neg spoke.3ms
No boy spoke.
- b. hu lo diber im **af/Sum** more.
he neg spoke.3ms with *any_c/any_m* teacher
He didn't talk to any teacher.
- (22) a. lo Satiti Sum/*af mayim.
neg drank.1s *any_m/*any_c* water
I didn't drink any water.

- b. lo raiti Sum/*af susim
 neg saw.1s any_m/*any_c horses
 I didn't see any horses.

7.2 Three Basic Classes of Quantifiers

7.2.1 Intersective Quantifiers

Hebrew does not have an indefinite article, and indefinites generally occur bare. Plurality is marked by a suffix *-im* for masculine nouns, *-ot* for feminine nouns, with some idiosyncratic exceptions.

- (23) raiti tmuna Sel ha-rambam me'al ha/la-'ax
 saw.1sg picture of Maimonides above the/to.the-fireplace
 I saw a picture of Maimonides above the fireplace.
- (24) malaxim Saru ba-rexov
 sailor.mpl sang.3pl in.the-street
 Some sailors were singing / sang in the street.

A plural indefinite noun as in (24) can also be preceded by one of the following lexemes to express a meaning roughly similar to 'some' / 'several':

- *kama* 'several'.
- *mispar* 'a number of' (literally 'number') (*mispar* can also follow the head noun).
- *axad-im* (feminine *axad-ot*), the plural version of the numeral *exad* (feminine *axat*) 'one' discussed below.

- (25). a. mispar / kama naSim panu la-avoda ha-zot
 number / some women turned.3pl to.the-work the-this.f
 Several / a number of women applied for this job.
- b. naSim axad-ot panu la-avoda ha-zot.
 women one-fpl turned.3pl to.the-work the-this.f
 A number of women applied to this job.

In subject position, bare indefinites can be interpreted generically. Both (24) above and (26) can be read either existentially or generically.

- (26) naSim panu la-avoda ha-zot.
 women turned.3pl to.the-work the-this.f
 Women applied for this job.

The numeral *exad* 'one' (feminine *axat*) is unique among the numerals in following the head noun (like adjectives do). It can occur on indefinite NPs to indicate non-specificity, either in the sense of ignorance, or lack of concern (27).

- (27) *kaniti la sefer (exad), lo zoxeret / xaSuv eze.*
 bought.1s to.3fs book one neg remember.fsg / important which
 I bought her some book, I can't remember which / it doesn't matter which.

The numeral *exad* 'one' cannot mark the object of an opaque verb on its 'unspecific', or *notional* reading. Thus, (28) can only have a *de-re* reading.

- (28) *ani mexapes xad-keren exad.*
 I seek.ms one-horn one
 I am looking for some unicorn.

The *wh*-word *eze* 'which' (Kagan and Spector 2008), as well as the items *eze-Se-hu* (feminine *eze-Se-hi* or *ezo-Se-hi*) and the higher register *kol-Se-hu* (feminine *kol-Se-hi*), can be used in a similar way, though they are not restricted to singular nouns.

- (29) a. *ten li eze sefer.*
 give.imp.ms to.1s which book
 Give me some book.
- b. *kaniti lo eze sefer / sfarim.*
 bought.1s to.3ms which book / book.mpl
 I bought him some book(s)
- c. *kaniti lo eze-Se-hu/hem sefer / sfarim.*
 bought.1s to.3sm which-that-he/they book / book.mpl
 I bought him some book(s).
- d. *kaniti lo sefer kol-Se-hu.*
 bought.1s to.3sm book all-that-he
 I bought him some book.

Other numerals are described in Section 7.2.3 below.

7.2.2 *Existential Sentences*

Existential sentences in Hebrew are formed with the lexemes *yeS* (positive) and *en* (negative, in more formal varieties written *eyn*), which we gloss as EX and NEX respectively. In the non-present, these lexemes are replaced with forms of the verb *haya* 'be'.

- (30) a. *yeS xameS naSim ba-kita axSav. Sana Se-avra hayu eser.*
 EX five women in.the-class now. year that-passed be.3pl ten
 There are five women in the class now. Last year there were ten.
- b. *en naSim ba-kita axSav. Sana Se-avra gam lo hayu*
 NEX women in.the-class now. year that-passed also neg be.3pl
 There are no women in the class now. Last year there were also none.

Hebrew existential sentences have a range of peculiar morphological and morphosyntactic properties which are not yet well understood and which we do not discuss here (for some discussion and references, see Falk 2004, Francez 2006).

Negative existentials must be formed with *en*, it is not possible to use sentential negation to negate a positive existential.

- (31) *lo yeS anaSim ba-xeder.
 not EX people in.the-room
 There aren't any people in the room.

The negative existential lexeme *en* is also used for sentential negation in older and more formal varieties, as exemplified in (32). When *eyn* is used as sentential negation, it must agree in person, gender and number with a preceding subject (32-b). Such inflection is possible in existentials only when the pivot is indefinite, and only with positive existentials, as shown in (33). (33-a,b) show that inflection is not possible in existentials with a definite pivot. (33-c) shows it is possible in positive, but not negative, existentials with an indefinite pivot.

- (32) a. eyn ata mevin.
 neg you understand
 You do not understand.
- b. ata eynxa mevin.
 you neg.2sm understand
 You do not understand.
- (33) a. en / *eneno oto ba-reshima
 NEX / NEX.3sm acc.3sm in.the-list
 He doesn't appear on the list. (Lit.: There isn't him on the list.)
- b. yeS / *yeSno oto ba-reshima.
 EX / EX.3sm acc.3sm in.the-list
 He appears on the list. (Lit.: There is him on the list.)
- c. yeSnam anaSim ba-reshima.
 EX.3plm people in.the-list
 There are people on the list.
- d. *enam anaSim ba-reshima.
 NEX.3plm people in.the-list
 There aren't people on the list.

The pivot in a negative existential with *en* must occur with an *n-word*, as shown in (34).

- (34) a. yeS miSehu ba-bayit.
 EX someone in.the-house
 There is someone in the house.
- b. *en miSehu ba-bayit
 NEX someone in.the-house
 There isn't anyone in the house.
- c. en af exad ba-bayit.
 NEX n1 one in.the-house
 There isn't anyone in the house.

Possession

The existential lexemes are also used to form possessive constructions, as exemplified in (35). The possessor is marked with the dative preposition *le* 'to'.

- (35) a. yeS li kesef ba-kis.
 EX to.1s money in.the-pocket
 I have money in my pocket.
- b. en li kesef ba-kis.
 NEX to.1s money in.the-pocket
 I don't have money in my pocket.

Restrictions on Determiners

Hebrew existentials can occur with a very wide variety of NP types (the earliest discussion of this we are aware of in the generative literature is Ziv 1982). As shown in (33), pivots can be personal pronouns. Pivots can also be proper names, and can be headed by determiners that are not existential by the definition of Keenan (1987), or that are strong in the sense of Barwise and Cooper (1981), as shown in (36). Note that the examples in (36) are not possessive since no dative case is involved.

- (36) a. yeS et rov ha-sfarim Sela ba-sifriya.
 EX acc. most the-book.mpl of.3fs in.the-library
 The library has most of her books.
- b. yeS et kol ha-hesberim ba-xoveret.
 EX acc. all the-explanation.mpl in.the-booklet
 The booklet has all the explanations.

Thus, Hebrew seems to have virtually no definiteness effect. However, this is not entirely accurate, as there are some interpretational restrictions on pivots that are non-existential and/or strong. In particular, such pivots tends to be interpreted as quantifying over *types* rather than *tokens*. For example, (36-a) is normally interpreted to mean that the library has copies of most of her books, rather than most of the actual token books she owns or has written.

Furthermore, purely locational readings are blocked for such pivots. For example, (37-a), from Ziv (1982), can only mean that Chomsky is on the MIT faculty list, not that he is physically there, for which the canonical predicative locative (37-b) must be used. (37-b) is ambiguous between a locative reading (Chomsky is physically at MIT) and a reading equivalent to that of (37-a) (Chomsky is faculty at MIT).

- (37) a. yeS et xomsky be-MIT.
 EX acc. Chomsky in-MIT
 MIT has Chomsky (on the faculty).
- b. Xomsky be-MIT.
 Chomsky in-MIT
 Chomsky is in MIT.

The contrast can easily be intuited by considering which questions (37-a) and (37-b) can answer. (37-a) (or a word-order variant of it) can answer a question like *why did you chose MIT?*, but not *where is Chomsky?* (37-b) can answer either question.

7.2.3 Numerals and Modified Numerals

Numerals other than *exad/axat* ‘one’ precede the noun. Numerals have masculine and feminine forms.

- (38) a. xameS naSim rakdu.
 five.f women danced.3pl
 Five women danced.
- b. xamiSa gvarim rakdu
 five.m men danced.3pl
 Five men danced.

The numeral for *two* has a different form (similar to a construct state form) when it occurs as a determiner immediately preceding the common noun, and when it occurs in other positions. This is shown in (39).

- (39) a. Sney anaSim rakdu.
 two.m people danced
 Two people danced.
- b. A: kama anaSim rakdu? B: Snayim.
 A: how.many people danced? B: two
 A: How many people came? B: Two.

For discussion of expressions equivalent to *some* or *several* see Section 7.2.1 above. Following are examples of some other modified numerals.

- (40) *More than five*
- a. yoter mi-xameS
 more from-five.f
 More than five
- b. le-mala mi-xameS
 to-up from-five.f
 More than five (formal)
- (41) *less than five*
- a. paxot mi-xameS
 less from-five.f
 Less than five
- b. le-mata mi-xameS
 down from-five.f
 Less than five (formal)

- (42) karov le-eser
 cole to-ten.f
 close to ten

In (43) to (45), the modifier can precede the numeral or follow it. It may also follow the common noun following the numeral.

- (43) *at least five*
 a. le-faxot xameS
 to-less five.f
 at least five
 b. le-xol ha-paxot xameS
 to-all the-less five.f
 at least five
- (44) *approximately ten*
 a. be-erex eser
 in-approximation ten.f
 approximately ten
 b. paxot o yoter eser
 less or more ten.f
 more or less five
 c. eser be-keruv
 ten.f in-closeness
 approximately ten
- (45) kim'at mea
 almost hundred
 almost a hundred
- (46) ben xameS le-eser
 between five.f to-ten.f
 between five and ten
- (47) *infinitely many*
 a. en-sof
 NEX-end
 infinitely many (Lit. 'no end of')
 b. en-sfor
 NEX-count
 uncountably many
 c. bli sof
 without end
 endlessly many
- (48) be-koSi xameS
 in-difficulty five.f
 hardly five

All of the modified numerals discussed here can also be separated from the common noun (this is a phenomenon distinct from quantifier floating, discussed above). Some examples are given in (49).

- (49) yeladim raiti harbe / SloSa / en-sfor / bekoSi exad.
 children saw.Is many / three / NEX-count / hardly one
 Children I saw many / three / infinitely many / hardly one.

In such cases the bare noun is a contrastive topic. A discourse exemplifying the use of this kind of word order is given in (50).

- (50) Samati Se-yeS Sam arayot ve-nemerim, az nasati le-Sam. arayot
 heard.Is that-EX there lions and-tigers, so traveled.Is to-there. lions
 raiti kama, aval nemerim be-koSi exad.
 saw.Is several, but tigers in-difficulty one
 I heard there were lions and tigers there, so I went there. Lions I saw
 several, but tigers hardly even one.

The following modified numerals are syntactically in a type of partitive construction.

- (51) *finitely many*
 a. kamut sofit Sel
 quantity finite.f of
 finitely many (lit.: a finite quantity of)
 b. mispar sofi Sel
 number finite of
 finitely many (lit.: a finite number of)

Sel 'of' is the possessive preposition. In (51), it is used as a partitive and must be followed by a mass or plural noun.

7.2.4 Value Judgment Cardinals

Hebrew used to encode a mass-count distinction between value judgment cardinals, i.e. between the words for *much* vs. *many* and for *little* vs. *few*. However, this distinction is not maintained in spoken varieties today. The mass forms in (52-a) are used practically exclusively in speech, whereas the count forms in (52-b) are considered archaic. Examples (52-c,d) might be considered colloquial.

- (52) a. raiti harbe / meat mayim / anaSim.
 saw.Is much / little water / people
 I saw much / little water / people.
 b. raiti anaSim rabim / meatim.
 saw.Is people many / few.mpl
 I saw many / few people.

- c. raiti male / hamon anaSim
saw.1s full / lots people
I saw many people.
- d. raiti kcat anaSim.
saw.1s little people
I saw few people.
- (53) a. yoter mi-day anaSim ba'u.
more from-enough people came.3pl
Too many people came.
- b. paxot mi-day anaSim ba'u.
less from-enough people came.3pl
Not enough people came.
- c. (lo) maspik anaSim ba'u.
neg enough people came.3pl
(Not) enough people came.

Value cardinals can be adverbially modified to achieve meanings similar to such as *surprisingly many*, as in (54).

- (54) a. raiti kol kax harbe anaSim!
saw.1s all so much people
I saw so many people!
- b. raiti mamaS harbe anaSim!
saw.1s really much people
I saw a whole lot of people.

7.2.5 Interrogatives

The cardinal question word is *kama* 'how many', and the intersective non-cardinal one is *eyze* 'which'. In more formal registers, a distinction is made between the masculine singular *eyze*, the feminine singular *eyzo*, and the plural *elu*.

- (55) kama anaSim ba'u?
how.many people came.3pl
How many people came?
- (56) eyze/elu anaSim ba'u?
which people came.3pl
Which people came?

(56) can also be used to ask *what kinds of people came?*

7.2.6 Boolean Compounds

Some examples of Boolean compounds are given in (57) and (58).

- (57) a. lo yoter mi-xamiSa anaSim ba'u.
neg more from-five.m people came.3pl
Not more than five people came.
- b. le-faxot Snayim aval lo yoter mi-asara anaSim ba'u.
to-less two.m but not more from-ten.m people came.3pl
At least two but not more than ten people came.

Note the difference in the form of the numeral *Snayim* 'two' when it is adjacent to the noun, as in (58-b), and when it is not adjacent, as in (58-a) (cf. the discussion of example (39) above).

- (58) a. Snayim o SloSa anaSim ba'u.
two.m or three.m people came.3pl
Two or three people came.
- b. Sney banim ve-SaloS banot ba'u.
two.m boys and-three.f girls came.3pl
Two boys and three girls came.

(59) shows compounding with negation. The same meaning obtains when *n-words* are used instead of negation, as in (59-c).

- (59) a. (lo) ba'u lo banim ve-lo banot.
neg came.3pl neg boys and-neg girls
Neither boys nor girls came.
- b. lo gvarim ve-lo naSim (lo) rocim oto.
neg men and-neg women neg want.3mpl 3ms
Neither men nor women want it.
- c. af ben ve-af bat lo ba'u.
any_c boy and-any_c girl not came.3pl
No boy and no girl came.

7.2.7 Numeral Classifiers

Hebrew does not in general require numeral classifiers. Count nouns simply follow the numeral, as discussed in Section 7.2.3. However, with mass nouns and some count nouns, various lexemes, which we refer to here as classifiers, are used to express conventionally or naturally delineated units of measure.

Mass and count nouns can be distinguished in that only the former can appear in the singular after a determiner like *harbe*. For current purposes, we take this to be a defining property, i.e. we use 'mass noun' to refer to those nouns that can occur in the singular after *harbe*.

- (60) a. yeS harbe tiras.
EX much corn
There is a lot of corn.

- b. #yeS harbe Sulxan.
 EX much table
 #There is a lot of table.
- c. yeS harbe Sulxanot.
 EX much table.fpl
 There are many tables.

A mass noun can either occur in the singular with a classifier, or else in the plural immediately following the numeral. Plural marking thus turns mass nouns into count. For example, compare (60-a) with (61).

- (61) yeS harbe tirasim.
 EX many corn.mpl
 There are many ears of corn.

Plural mass nouns denote maximal conventionally or naturally delineated quantities (such as an ear of corn). Classifiers can express either maximal quantities or smaller quantities. Examples are given in (62). (Some classifiers do not have lexical meanings other than the units of measure they express. In such cases, the classifier is glossed CLS.)

- (62) a. Sney kilxey tiras.
 two.m CLS.cs corn
 two ears / kernels of corn
- b. Sney tirasim
 two.m corn.mpl
 two ears / kernels of corn
- (63) a. Sney raSey Sum
 two.m heads.cs garlic
 two heads of garlic
- b. Sney Sumim
 two.m garlic.mpl
 two heads of garlic
- (64) a. Stey prusot lexem
 two.f slice.fpl.cs bread
 two slices of bread
- b. Stey kikrot lexem
 two.f CLS.cs bread
 two loaves of bread
- c. Sney leexamim
 two.m bread.mpl
 two loaves of bread

With some mass nouns, a classifier is obligatory and plural marking is not possible.

- (65) Sney *(gargirey) orez / melax
 two.m grain.mpl.cs rice / salt
 Two grains of rice / salt

Count nouns can occur with classifiers that express a quantity different from the conventional single unit associated with the noun. Examples are given in (66).

- (66) a. Sney pilkey tapuz
 two.m portion.mpl.cs orange
 Two pieces of orange.
- b. Sney eSkolot anavim
 two.m CLS.cs grapes
 Two bunches of grapes

Container expressions and measure phrases are exemplified in (67). Container expressions appear in the construct state.

- (67) a. Stey xafisot klafim / cigaryot
 two.f pack.fpl.cs card.mpl / cigarette.fpl
 Two decks of cards / boxes of cigarettes
- b. Sney bakbukey yayin
 two.m bottle.mpl.sc wine
 Two bottles of wine
- c. Sney kilo melax
 two.m kilogram salt
 Two kilograms of salt

The classifier *xatixa* ‘piece’ can precede a mass noun,⁵ inducing a partitive meaning, i.e. expressing a quantity smaller than the conventional single unit associated with the noun when it is in the plural. Examples are given in (68) and (69).

- (68) a. Stey xatixot Sokolad
 two.f piece.fpl.cs chocolate
 Two pieces of chocolate
- b. Sney Sokoladim
 two.m chocolate.mpl
 Two bars of chocolate
- (69) a. Stey xatixot lexem
 two.f piece.fpl.cs bread
 Two pieces of bread

⁵ Only mass nouns describing non-fluid material can be preceded by *xatixa*.

- b. Sney lexamim
two.m bread.mpl
Two loaves of bread

This classifier can also occur with a count noun, in which case it has the effect of turning it into a mass noun and inducing the same partitive reading (cf. English *There is a lot of dog on the road*).

- (70) yeS xatixat Sulxan / kelev ba-rexov.
EX piece.cs table / dog in.the-street
There is a piece of table / dog on the street.

For recent discussion see Rothstein (2009) and Doron and Müller (2011).

7.2.8 Units of Time and Distance

Examples of time expressions:

- (71) a. yaSanti Seva Saot.
slept.ls seven hours
I slept seven hours.
b. yaSanti be-meSex Seva Saot.
slept.ls in-duration seven hours
I slept for seven hours.
- (72) a. bati hena le-Savua.
came.ls here to-week
I came here for a week.
b. nasati le-Sam le-Savua.
went.ls to-there to-week
I went there for a week.
- (73) a. axzor od Siv'a yamim.
will.return.ls more seven day.mpl
I will return in seven days.
b. yeS Siv'a yamim be-Savua.
EX seven day.mpl in-week
There are seven days in a week.

Examples of distance expressions:

- (74) a. Tel-aviv rexoka arbaim kilometer mi-xaifa.
tel-aviv far.f forty kilometer from-Haifa
Tel Aviv is forty kilometers from Haifa.

- b. Tel-aviv ze arbaim kilometer mi-xaifa.
tel-aviv that.m forty kilometer from-Haifa
Tel Aviv is forty kilometers from Haifa.

Examples of comparatives:

- (75) a. Dani namux mi-Dina be-arbaim sentimeter.
Dani short from-Dina in-forty centimeters
Dani is 40 centimeters shorter than Dina.
- b. Dani arbaim sentimeter yoter namux mi-Dina.
Dani forty centimeters more short from-Dina
Dani is 40 centimeters shorter than Dina.

7.2.9 A-Quantifiers

Many adverbial quantifiers are formed with some form of the noun *paam* 'time'.

- (76) a. ani li-f'amim noheg la-avoda.
I to-time.pl drive.ms to.the-work
I sometimes drive to work.
- b. bikarti be-taSkent paamayim / arba peamim.
visited.1s in-Tashkent twice / four time.pl
I visited Tashkent twice / four times.
- c. bikarti be-taSkent paam.
visited.1s in-Tashkent time
I visited Tashkent once.
- d. bikarti be-taSkent harbe peamim.
visited.1s in-Tashkent many time.pl
I visited Tashkent many times.
- e. nahagti la-avoda lo harbe meod peamim.
drove.1s to.the-work neg much very time.pl
I drove to work not very many times.
- f. ani noheg la-avoda harbe / hamon / meat.
I drive.sm to.the-work much / a lot / little
I drive to work a lot / little.

Negative adverbial quantifiers take several forms, all translated as *never*. The form *me-olam* can only occur with a past tense verb. The form *le-olam* only with a future tense verb.

- (77) a. ani af paam lo nahagti / enhag / noheg la-avoda.
I any_c time neg drove.1s / will.drive.1s / drive.1ms to.the-work
I never drove/drive/will drive to work.
- b. ani le-olam lo enhag la-avoda.
I to-world neg will.drive.1s to.the-world
I will never drive to work.

- c. ani me-olam lo nahagti la-avoda.
I from-world neg drove.1s to.the-work
I've never driven to work.

The expression *ey-pa'am* has a meaning roughly parallel to English *ever*. This expression is used in questions, conditionals, and with superlatives, as shown in (78).

- (78) a. nahagta ey-paam la-avoda?
drove.2ms ever to.the-work?
Have you ever driven to work?
- b. im ata ey-paam ba-sviva, tavo levaker.
if you ever in.the-surrounding, will.come.2ms visit.inf
If you're even in the area, come visit.
- c. zot ha-memSala haxi grua ey-paam.
this.f the-government most bad ever
This is the worst government ever.
- d. zot ha-memSala haxi grua Se-ey-paam nivxera.
this.f the-government most bad that-ever be.elected.3fs
This is the worst government that was ever elected.

It can also occur in subordinate clauses of negated or inherently negative verbs (79-a,b). However, unlike English *ever*, it cannot occur in the immediate scope of negation (79-c), where an *n-word* is required. An exception to this seems to be interrogative contexts like (79-d). This is a naturally occurring example, and others similar to it can be found in corpora, though in our own judgment such examples are ungrammatical.⁶

- (79) a. Saxaxti Se-ey-paam nahagti la-avoda.
forgot.1s that-ever drove.1s to.the-work
I forgot that I ever drove to work.
- b. ani *(lo) xoSevet Se-ani ey-paam enhag la-avoda.
I neg think that-I ever will.drive.1s to.the-work
I don't think I will ever drive to work.
- c. *ani lo nahagti ey-paam la-avoda.
I neg drove.1s every to.the-work
Intended: I didn't ever drive to work.
- d. mi lo xalam ey-paam lihiyot kosem?
who neg dreamt.3ms ever be.inf magician.m
Who has not dreamt of being a magician?

The lexeme *midey* is used with varying quantificational force. Preceding *paam*, it is interpreted as a cardinal quantifier meaning roughly 'from time to time'.

⁶ We thank Edit Doron for pointing out such examples to us.

Preceding time-unit nouns like *Sana* ‘year’ it is interpreted as a universal quantifier. Examples are given in (80). This is somewhat reminiscent of the use in English of *every* with variable force in examples like “every now and then” vs. “every year”.

- (80) a. ani noheg la-avoda midey paam.
I drive.1s to.the-work midey time
I drive to work from time to time.
- b. ani noheg la-avoda midey yom.
I drive.1s to.the-work midey day
I drive to work every day

7.3 Generalized Universal (Co-intersective) Quantifiers

D-Quantifiers

Following are examples of co-intersective quantifiers. The determiner *kol*, glossed for convenience as ‘all’, can precede either a bare singular or a definite plural noun. Doron and Mittwoch (1986) show that *kol* can also combine with a bare plural, in which case it is an NPI, as in (81).

- (81) lo nigremu kol nezakim.
neg be.caused.3pl any damage.mpl
No damage was caused.

As noted in Section 7.1.2, when the complement of the determiner is definite, the determiner can float, in which case it agrees in person, number and gender with the noun. (84) exemplifies combinations of *kol* with conjoined nouns. Disjunction works in the same way.

- (82) a. kol meSoreret xolemet.
all poet.f dream.3fs
Every/each poet(s) dream.
- b. kol ha-meSorerot xolmot.
all the-poets.f dream.3fpl
All the poets dream(s).
- (83) a. kol yeled ba-kita katav Sir.
all boy in.the-class wrote.3ms poem
Every/each boy in the class wrote a poem.
- b. kol ha-yladim ba-kita katvu Sir.
all the-children in.the-class wrote.3pl poem
All the children in the class wrote a poem.
- c. ha-yladim ba-kita kul-am katvu Sir.
the children in.the-class all-3pl wrote.pl poem
The children in the class all wrote a poem.

- (84) kol iS, iSa ve-yeled azvu et ha-ir.
 every man woman and-child left.3pl acc. the-city
 Every man, woman and child left the city.

When *kol* occurs with a singular noun complement, it can only be read distributively, as evidenced by the impossibility of (85-a). When *kol* is followed by a plural definite noun, the resulting NP can be read collectively (85-b).

- (85) a. #kol yeled nifgaS ba-kikar.
 all boy met.3ms in.the-square
 # Every boy met in the square.
 b. kol ha-yladim nifgeSu ba-kikar.
 all the-boys met.3pl in.the-square
 All the boys met in the square.

(86) demonstrates that *kol* followed by a definite and by a bare singular noun have different scopal behavior inside a possessive NP.

- (86) a. tmuna Sel kol ha-yladim amda al ha-Sulxan.
 picture of all the-children stood.3fs on the-table
 A picture of all the children stood on the table. (Possibly one picture, several children)
 b. tmuna Sel kol yeled amda al ha-Sulxan.
 picture of all boy stood.3fs on the-table
 A picture of every boy stood on the table. (As many pictures as children)

The default interpretation of the sentences in (87-a,b) is generic, i.e. the sentences deny the generalization that cats are grey. However, (87-a) also has a non-generic interpretation, in which some restricted set of cats is said to include non-grey members. This reading is not available for (87-b).

- (87) a. lo kol ha-xatulim (hem) aforim.
 neg all the-cats (COP.mpl) grey.pl
 Not all cats are grey / Not all the cats are grey.
 b. lo kol xatul (hu) afor.
 neg all cat (COP.ms) grey
 Not every cat is grey.

Examples of exception phrases are given in (88).

- (88) a. kol ha-studentim xuc mi-Snayim xolim.
 all the-students out from-two sick.pl
 All the students except two are sick.
 b. kol ha-studentim milvad yosi xolim.
 all the-students except Yosi sick.pl
 All the students except Yosi are sick.

- c. kol student xuc mi- / milvad yosi yaxol laavor et ha-bxina
 all student out from- / except yosi can.ms pass.inf acc. the-exam
 Every student except Yosi can pass the exam.

Hebrew provides evidence that exceptives can occur with non-universals (García Álvarez 2009).

- (89) harbe studentim xuc mi-yosi mitnagdim la-acuma.
 many students out from-yosi oppose.mpl to.the-petition
 Many students besides Yosi oppose the petition.

The quantifier *ha-kol* corresponds to English *everything*.

- (90) a. axalti ha-kol.
 ate.1s the-all
 I ate everything.
 b. ha-kol ta'im.
 the-all tasty
 Everything is tasty.
 c. natati la (et) ha-kol.
 gave.1s to.her acc. the-all
 I gave her everything.

A-Quantifiers

Following are examples of co-intersective adverbial quantifiers and frequency adverbs.

- (91) *tamid* 'always'
 a. ani (kim'at) tamid nosea la-avoda ba-otobus.
 I (almost) always ride to.the-work in.the-bus
 I (almost) always take the bus to work.
 b. ani tamid nextax kSe-ani mitgaleax.
 I always get.cut.ms when-I shave.ms
 I always cut myself when I shave.
 (92) *kol paam* 'every time'
 a. ani (kimat) kol paam nofel.
 I (almost) all time fall.ms
 I fall (almost) every time.
 b. Dani nextax (be) kol paam Se-hu mitgaleax.
 Dani get.cut.ms (in) all time that-he shave.ms
 Dani cuts himself whenever he shaves.

- (93) *kol ha-zman* ‘all the time’
- a. ani (kimat) kol ha-zman nofel.
I (almost) all the-time fall.ms
I fall (almost) all the time.
 - b. Dani nextax kol ha-zman kSe-hu mitgaleax.
Dani get.cut.ms all the-time when-he shave.ms
Dani cuts himself all the time when he shaves.

Reduplication

Universal A-quantifiers can be formed productively with reduplication of a time-unit word. For example, the reduplicative expression *yom yom* ‘day day’ means ‘daily’. Examples are given in (94).

- (94) *yom yom* ‘daily’
- a. ani noheg la-avoda yom yom.
I drive.ms to.the-work day day
I drive to work daily.
 - b. ani mitgaleax yom yom kSe-ani melamed.
I shave.ms day day when-I teach.ms
I shave daily when I teach.
 - c. ani bodek do’ar Sa’a Sa’a.
I check.ms mail hour hour
I check mail every hour.
 - d. erev erev megi’a iton.
evening evening arrives.ms newspaper
Every evening a newspaper arrives.

Reduplication is also used in a similar way to form distributive quantifiers, described in Section 7.5.14.

Quantifiers Based on Interrogatives

Hebrew equivalents of English *wh*-ever quantifiers are formed with the *wh*-words as follows.

- (95) *mi* ‘who’
- a. mi Se-nirSam me-roS mekabel hanaxa.
who that-sign.up.ms from-head receive.ms reduction
Whoever signs up in advance gets a reduction.
 - b. mi Se-’asa et ze Se-yakum.
who that-did.3ms acc. this that-will.stand.3ms
Whoever did this, stand up!

- (96) *ma* ‘what’
 Dani oxel ma Se-notnim lo.
 Dani eat.ms what that-give.mpl to.him
 Dani eats whatever he is given.
- (97) *matay* ‘when’
 Dani oxel matay Se-efSar.
 Dani eat.ms when that-possible
 Dani eats whenever possible.
- (98) *ex* ‘how’
 Dani mitlabeS ex Se-omrim lo.
 Dani dress.ms how that-say.mpl to.him
 Dani dresses however he is told to.

An interesting property of *wh-ever* phrases in Hebrew is that they license, and sometimes require, expletive negation or the particle *rak* ‘only’. For example, (98) can also be expressed as (99-a), and (96) as (99-b). For a recent discussion of expletive negation in Hebrew see Eilam (2009).

- (99) a. Dani oxel matay Se-**rak** efSar.
 Dani eat.ms when that-only possible
 Dani eats whenever possible.
- b. Dani oxel ma Se-**lo** notnim lo.
 Dani eat.ms what that-not give.mpl to.him
 Dani eats whatever he is given.

In an episodic, extensional context, the presence or absence of expletive negation can mark the difference between a quantificational free relative interpretation involving universal force, and an interpretation similar to that of a definite description. This is exemplified by the contrast in (100).

- (100) a. Dani axal ma Se-natati lo.
 Dani ate.3ms what that-gave.1s to.him
 Dani ate what I gave him.
- b. Dani axal ma Se-lo natati lo.
 Dani ate.3ms what that-not gave.1s to.him
 Dani ate whatever I gave him.

7.4 Proportional Quantifiers

D-Quantifiers

The determiner *most* is expressed in spoken Hebrew by the noun *rov* ‘majority’ in the construct state (101-a) or in a full possessive form (101-b). In more formal registers the noun *marbit* ‘most’ is also used (101-c).

- (101) a. *rov* *ha-meSorerim xolmim*.
majority.cs the-poets dream.mpl
Most (of the) poets dream.
- b. *rubam* *ha-gadol Sel ha-rehitim* *Svurim*.
majority.cs.3mpl the-big.ms of the-furniture.mpl broken.mpl
The great majority of the furniture is broken.
- c. *marbit* *ha-meSorerim xolmim*.
majority.fs.cs the-poet.mpl dream.mpl
Most (of the) poets dream.

The exact status of *rov* is not entirely clear to us. It has clear uses as a noun meaning ‘majority’.

- (102) a. *ha-rov* *hitnaged* *la-haxlata*.
the-majority objected.ms to.the-decision
The majority opposed the decision.
- b. *be-demokratya ha-rov* *maxlit*.
in-democracy the-majority decides.ms
In democracy the majority rules.

Its quantificational use might be argued to involve this noun in the construct state. The fact that *rov* requires a definite NP complement might support this view. However, agreement facts might be taken to argue against it. When a construct state NP is the subject of an agreeing predicate, agreement is always with the construct state noun, as in (103-a). However, an NP in which *rov* occurs as a determiner triggers agreement with the common noun, not with *rov*, as shown for number and gender agreement in (103). In (103-a) the adjective *Svura* ‘broken’ is singular and feminine, like the construct state noun *tmunat* ‘picture (of)’, and unlike the common noun *yladim* ‘children’, which is masculine and plural. In (103-b), the verb *Saru* ‘sang’ agrees not with *rov*, but with the plural common noun *yeladot* ‘girls’.

- (103) a. *tmunat* *ha-yladim* *Svura*.
picture.fs.cs the-boy.mpl broken.fs
The picture of the children is broken.
- b. *rov* *ha-yeladot gvohot*.
majority.ms.cs the-girl.fpl tall.fpl
Most (of the) girls are tall.

Nevertheless, this is not conclusive evidence, as clear occurrences of *rov* in the construct state also fail to trigger agreement on an agreeing predicate, which instead agrees with the common noun, as shown in (104).

- (104) a. *kalbam* *Sel ha-yladim* *barax*.
dog.ms.cs.3mpl of the-boy.3mpl escaped.3ms
The children’s dog ran away.

- b. rubam Sel ha-yladim nirdemu /
 majority.ms.cs.3mpl of the-boy.mpl fell.asleep.3mpl /
 *nirdam.
 fell.asleep.3ms
 Most of the children fell asleep.

The following proportional quantifiers are formed with the preposition *mi/me* ‘from’, or with the preposition *mitox* ‘from’. The latter is morphologically complex, composed of the preposition *mi* and the noun *tox* ‘inside’ in the construct state. In the following examples, both are glossed as ‘from’.

- (105) a. Siv’a mi-/mitox asara meSorerim xolmim.
 seven from ten poets dream.mpl
 Seven out of ten poets dream.
- b. rak exad mi-kol asara studentim yekabel milga.
 only one from-all ten.m students will.receive.3ms scholarship
 Only one out of ten students will get a scholarship.
- c. afilu exad mitox asara morim lo yodea et ha-tSuva.
 even one from ten.m teachers neg knows.ms acc. the-answer
 Not even one teacher in / out of ten knows the answer.

Partitives are also formed with the preposition *mi-*. Partitive determiners generally require definite complements.

- (106) a. Smonim axuz me-ha-morim xolim.
 eighty percent from-the-teachers sick.pl
 Eighty percent of the teachers are sick.
- b. Sney SliS me-ha-morim xolim.
 two.cs third from-the-teachers sick.pl
 Two thirds of the teachers are sick.
- c. xelek gadol/katan me-ha-morim xolim.
 part big/small from-the-teachers sick
 A large/small part of the teachers is sick.

More partitive quantifiers are given in (107). The noun *xaci* ‘half’, which is stressed on the final syllable, is usually pronounced as *xeci*, with stress on the first syllable, in colloquial speech.

- (107) a. paxot mi-reva mi-
 less from-quarter from
 less than a quarter of
- b. axuz katan me-
 percentage small from
 a small percentage of

- c. xaci/xeci me-
half from
half of
- d. bidyuk / paxot me- / yoter me- xeci me-
exactly / less from / more from half from
exactly / less than / more than half of
- e. xamiSit / SiSit / Sminit me -
fifth / sixth / eighth from
a fifth / sixth / eighth of

A-Quantifiers

Proportional A-quantifiers in Hebrew are morphologically complex. Some examples are given in (108).

- (108) a. ani la-rov noheg la-avoda.
I to.the-majority drive.1s to.the-work
I usually drive to work.
- b. ani be-derex klal noheg la-avoda.
I in-way.cs rule drive to.the-work
I usually drive to work.
- c. ani noheg la-avoda le-itim nedirov / rexokot / krovot .
I drive.1s to.the-work to-times rare.pl / far.pl / close.pl
I rarely / seldom / often drive to work.
- d. ani harbe peamim noheg la-avoda
I many times drive.1s to.the-work
I often drive to work.
- (109) be-derex klal / la-rov kSe ani ayef ani ocer ba-cad.
in-way.cs rule / to.the-majority when I tired.ms I stop.ms in.the-side
Usually when I'm tired I pull over.
- (110) gvarim (hem) be-derex klal / la-rov yoter gvohim mi-naSim.
men (are) in-way.cs rule / to.the-majority more tall.pl from-women
Men are usually taller than women.

7.5 Follow Up Questions

7.5.1 *Definite NPs*

The definite article in Hebrew is the clitic *ha*. As mentioned earlier, definiteness is marked on the head noun as well as on all modifiers, as shown in (111).

- (111) a. ha-xatul
the-cat
The cat
- b. ha-xatul ha-Saxor
the-car the-black
The black cat

Definite cardinal quantifiers are formed with the construct state form of a cardinal determiner and a definite noun, as exemplified in (112-a). As mentioned in Section 7.1.2, the cardinal determiner can be floated, in which case it agrees with the head noun in person and number, as shown in (112-b).

- (112) a. SloSet ha-xatulim Sxorim
three.cs.m the-cats black.mpl
The three cats are black.
- b. ha-xatulim SloStam Sxorim
the-cats three.cs.3mpl black
The cats are all three of them black.

Demonstratives

The Hebrew demonstratives are masculine *ze* and feminine *zot* (alternate form *zoti*, possibly a contraction from *zot + hi* 'be.f') in the singular, and *ele* (with alternate form *ehu* in formal registers) in the plural. Demonstratives are here glossed as DEM. They can occur on their own, as in (113).⁷

- (114) a. ze ha-sefer Se-katavti.
DEM the-book that-wrote.1s
This/that is the book I wrote.
- b. zot ha-kos Se-Savarti.
DEM the-cup that-broke.1s
This/that is the cup I broke.
- c. ele ha-sfarim Se-bikaSta.
DEM the-book.ms that-requirest.2ms
These are the books you asked for.

⁷ Demonstratives are also used in copular clauses such as (113-a,b). The status of these constructions is controversial (Sichel 1997, Doron 1983, Hazout 1994, Fuerst 2007).

- (113) a. Dani ze ha-xaver haxi tov Seli.
Dani DEM the-friend most good of.1s
Dani is my best friend.
- b. xatul zot xaya mafxida.
cat DEM animal scary
A cat is a scary animal.

Adnominal demonstratives distinguish distal and proximal forms. The former are formed by appending the definite article to a demonstrative. The latter by appending the definite article to a nominative pronoun. This is summarized in (115). Examples of demonstratives are given in (116).

(115) **Adnominal demonstratives**

proximal	
sg.	pl.
m. ha-ze	ha-ele (ha-elu)
f. ha-zot (ha-zoti, ha-zu)	
distal	
m. ha-hu	ha-hem
f. ha-hi	ha-hen

- (116) a. ha-iSa ha-zot/zoti (hi) ima Seli.
 the-woman the-this.f (is.f) mother of.1s
 This woman is my mother.
- b. ha-studentim ha-ele (hem) xaxamim
 the-students the-these (are.pl) smart.mpl
 These students are smart.
- c. ha-studentim ha-hem (hayu) xaxamim.
 the-students the-those (were.pl) smart.plm
 Those students were smart.

In more formal varieties, bare demonstratives can occur adnominally, in which case they have both proximal and distal readings. This is not possible with the pronouns that form the basis for distal adnominal demonstratives (117-c).

- (117) a. iSa zot/zu
 woman this.f
 This/that woman
- b. studentim ele
 students these
 These/those students
- c. *studentim hem
 students those
 Those students

Possessives

Since spoken Hebrew has mostly lost the construct state as a productive grammatical construction, it has only one way of forming nominal possessives, using the preposition *Sel* 'of'. Possessive NPs can be definite, as in (118-a), or indefinite as in (118-b). The non-productivity of the construct state in modern Hebrew is evidenced by the fact that neither of the NPs in (118) have construct state alternates.

- (118) a. ha-studentim Sel Tanya
 the-students of Tanya
 Tanya's students
- b. studentim Sel Tanya
 students of Tanya
 Students of Tanya's

A possessive NP can have quantified NPs on both sides of the preposition *Sel*. Some examples of quantified possessives are given in (119). In these sentences, the possessor quantifier is interpreted as outscoping the quantifier over things possessed (though there are cases where scoping is ambiguous, as in (86) above).

- (119) a. ha-mexonit/mexoniyot Sel rov ha-morim Sxora/Sxorot.
 the-car/cars of majority.cs the-teachers black.f/black.fpl
 Most teachers' car/cars is/are black.
- b. kol mexonit Sel kol more nigveva.
 all car of all teacher was.stolen.3fs
 Every car of every teacher was stolen.
- c. kim'at kol ha-mexoniyot Sel kama morim Sxorot.
 almost all the-cars of some teachers black.pl
 Almost all of some teachers' cars are black.

There seem to be restrictions on the cooccurrence of quantifiers in possessive NPs, though their exact nature is not clear to us. For example, for at least some speakers, a cardinal quantifier in the possessed NP position requires a partitive structure.

- (120) a. ??le-faxot SaloS mexoniyot Sel harbe morim Sxorot.
 to-less three.f cars of many teachers black.fpl
 Intended: At least three of many teachers' cars are black.
- b. le-faxot SaloS me-ha-mexoniyot Sel harbe morim Sxorot.
 to-less three.f from-the-cars of many teachers black.fpl
 Intended: At least three of many teachers' cars are black.
- (121) a. ??kama amudim Sel rov ha-sfarim kruim.
 some pages of majority.cs the-books torn.mpl
 Intended: Some of many books' pages are torn.

- b. kama me-ha-amudim Sel rov ha-sfarim kruim.
 some from-the-pages of majority.cs the-book.mpl torn.pl
 Intended: Some of many books' pages are torn.

Furthermore, there are restrictions on the distribution of *n-words* in possessives. Some examples are given in (122). More discussion is found in Section 7.5.13.

- (122) a. ??**ha-mexoniyot** Sel **af more** lo Sxorot.
 the-cars of any_c teacher neg black.fpl
 Intended: No teacher's car(s) is/are black.
- b. ??**kol ha-mexoniyot** Sel **af more** lo Sxorot.
 all the-cars of any_c teacher neg black.fpl
 Intended: No teacher is such that all of her cars are black.
- c. ***kol mexonit** Sel **af more** lo Sxora.
 every car of any_c teacher neg black.fs
 Intended: No teacher is such that every car of hers is black.
- d. **af mexonit** Sel **af more** lo Sxora.
 any_c car of any_c teacher neg black.fs
 No teacher's car is black.
- e. ***af mexonit** Sel **kol more** lo Sxora.
 any_c car of all teacher neg black.fs
 Intended: None of every teacher's cars are black.
- f. ***af mexonit** Sel **rov ha-morim** lo Sxora.
 any_c car of majority.cs the-teachers neg black.fs
 Intended: None of most teacher's cars are black.

7.5.2 Generic NPs

In Hebrew, both bare singulars and bare plurals can be interpreted generically (Doron 2003).

- (123) a. dvora (lo) okecet.
 bee (neg) stings.fs
 Bees (don't) sting.
- b. dvora okecet?
 bee stings.fs
 Do bees sting?
- c. dvorim (lo) okcot.
 bees (neg) sting.fpl
 Bees (don't) sting.

As Doron shows, Hebrew bare singulars can name kinds, unlike English bare singulars.

- (124) namer hitpateax mi-xatul.
 tiger developed.3sm from-cat
 The tiger developed from the cat. (cf. *A tiger developed from a cat* which has no kind reading).

Definite NPs, both plural and singular, can also refer to kinds.

- (125) a. ha-namer hu yonek.
 the-tiger be.m mammal
 The tiger is a mammal.
 b. ha-nemerim yikaxdu tox Sana.
 the-tigers will.become.extinct.pl inside year
 The tiger will become extinct within a year.

7.5.3 Morphological Complexity of Quantifiers

Monomorphemic A-Quantifiers

- (126) a. *tamid* ‘always’
 b. *paam* ‘once’
 c. *harbe* ‘often’
 d. *male* ‘very often’
 e. *hamon* ‘very often’

Multimorphemic A-Quantifiers that are a single phonological word

- (127) a. *lifamim* ‘sometimes’
 b. *me/le-olam* ‘never’
 c. *la-rov* ‘usually’

Monomorphemic D-Quantifiers

- (128) a. *rov* ‘majority of’
 b. *kol* ‘all/every/each/any’
 c. *marbit* ‘most’
 d. *exad* ‘one’
 e. *harbe* ‘many’
 f. *male* ‘many’
 g. *hamon* ‘very many, tons (of)’
 h. *meat* ‘few’
 i. *af / Sum* ‘any_c’, ‘any_m’
 j. *maksimum* ‘maximum’
 k. *minimum* ‘minimum’

Thus, Hebrew has a monomorphemic determiner *all*, as well as a monomorphemic *one*. However, Hebrew has only one monomorphemic universal quantifier. Whether or not Hebrew has a monomorphemic proportional determiner

is not entirely clear, and depends on how one analyzes words like *rov* ‘most’, discussed in Section 7.4.

Hebrew has several monomorphemic quantifiers translating *many*. There is no monomorphemic *no*.

7.5.4 Selectional Restrictions

As mentioned above, the proportional *rov* cannot occur with a bare noun but requires a definite NP complement. If the common noun is count, then quantification is over individuals when the noun is plural (129-b), and over parts of individuals when it is singular (129-c).

- (129) a. *rov yeled
majority.cs child
*Most child
- b. rov ha-yladim yeSenim
majority.cs the-boy.mpl sleep.mpl
Most of the children are sleeping.
- c. rov ha-Sulxan naki
majority.cs the-table clean
Most of the table is clean.

The universal *kol* can occur with either a bare singular or a definite plural noun.

- (130) a. kol yeled
all child
Every / each / any child
- b. kol ha-yladim
all the-boy.mpl
Every child / all the children.

All cardinals greater than one generally require a plural complement. However, in some cases singular complements are also possible. It is not clear to us what exactly licenses such singular complements. Intuitively, they seem to occur in NPs that are not thematic arguments of their predicates, but which instead act as measure or extent phrases.

- (131) a. hayu Sam Slosim yeled.
were.pl there thirty child
There were thirty children there.
- b. bney yisrael nadedu arbaim Sana.
sons.cs Israel wandered.pl forty year
The Israelites wandered for forty years.
- c. karati kvar SloSim amud.
read.1s already thirty page
I read already thirty pages.

The value cardinals *harbe* ‘many’ and *meat* ‘few’ take a bare plural complement (132), or a definite complement in the partitive construction (133). Partitives are discussed in Section 7.5.9.

- (132) a. *harbe yeladim*
many children
Many children
- b. *meat yeladim*
few children
Few children
- (133) a. *harbe me-ha-yladim*
many from-the-boy.mpl
Many of the children
- b. *meat me-ha-yeladim*
few of-the-boy.mpl
Few of the children

7.5.5 Decreasing NPs

Decreasing NPs were described above, and some examples are repeated here.

- (134) a. *paxot mi-SloSa anaSim*
less from-three people
Less than three people
- b. *lo kol yeled*
not all child
Not every child
- c. *paxot mi-reva mi-ha-yladim*
less from-quarter from-the-children
Less than a quarter of the children
- d. *af yeled*
any_c boy
No boy

Decreasing NPs license the NPI *ey-paam*, discussed in Section 7.2.9, as exemplified in (135). It seems that this expression is subject to the same anti-locality constraint described by Csirmaz and Szabolcsi (Chapter 8, this volume) for Hungarian: *ey-paam* cannot occur in the same minimal clause with explicit negation, hence the ungrammaticality of (135-c,d).

- (135) a. *paxot mi-SloSa anaSim ra'u ey-paam et elohim.*
less from-three people saw.pl ever acc God
Less than three people ever saw God.

- b. paxot mi-reva mi-ha-yldaim ra'u ey-paam
 less from-quarter from-the-children saw.pl ever
 et elohim.
 acc God
 Less than a quarter of the children ever saw God.
- c. *af yeled lo ra'a ey-paam et elohim.
 any_c boy neg saw ever acc. God
 No boy has ever seen God.
- d. *lo kol yeled ra'a ey-paam et elohim.
 neg all boy saw ever acc. God
 Not every child ever saw God.

7.5.6 Boolean Compounds

Boolean compounds of D-quantifiers were described in Section 7.2.6. Examples of compounds of A-quantifiers are in (136).

- (136) a. nahagti la-avoda le-faxot paamayim aval lo yoter mi-Ses
 drove.1sg to.the-work to-less twice but neg more from-six
 peamim.
 times
 I drove to work at least twice but no more than six times.
- b. dani hicbia ba-bxirot la-rov aval lo tamid
 Dani voted.ms in.the-elections to.the-majority but neg always
 la-smol.
 to.the-left
 Dani usually but not always voted for the left in the elections.

7.5.7 Exceptives

Some exceptives were described in Section 7.3 above. As described there, they involve the form *xuc mi-* or *milvad*. The examples in (137) show that there is no reason to assume these expressions to form a constituent with the determiner.

- (137) a. xuc mi-dani bau Slosim anaSim.
 outside from-Dani came.pl thirty people
 Except for Dani thirty people came.
- b. bau milvad dani SloSim anaSim.
 came.pl except Dani thirty people
 Except for Dani thirty people came.

In more formal registers, Hebrew has another exceptive, *ela*, which is only licensed under negation.

- (138) a. *(lo) raiti ela et yosi.
neg saw.1s ela acc. yosi
I saw nobody except Yosi.
- b. *(lo) axalti ela gezer.
neg ate.1s ela carrot
I ate nothing but carrots.

ela cannot occur with a matrix subject NP.

- (139) *ela yosi lo axal.
ela yosi neg ate.3ms
Intended: Nobody except Yosi ate.

- (140) a. I saw but one man.
b. *But one man arrived.

The lexemes *yeter* and *S'ar*, both meaning ‘rest of’ or ‘rest’, exhibit a problem similar to the one discussed for *rov* ‘most’ in Section 7.4. As with *rov*, these lexemes have clear uses as nouns (141-c), as well as uses that seem more determiner-like (141-a,b). When they occur as determiners, they do not trigger agreement on the main predicate, unlike construct state nouns.

- (141) a. *yeter* / *S'ar* ha-studentim nixSelu.
rest.of the-student.mpl failed.3mpl
The rest of the students failed.
- b. Dani avar. kol [*yeter* / *S'ar*] ha-studentim nixSelu.
Dani passed.3mpl all rest the-student.mpl failed.3mpl
Dani passed. All the rest of the students failed.
- c. Dani avar. kol ha-*[yeter / S'ar]* nixSelu.
Dani passed.3mpl all the-rest failed.3mpl
Dani passed. All the rest failed.
- d. kax exad ve-ten li et ha-*[yeter / S'ar]*.
take.IMP.2ms one and-give.IMP.2ms acc. the-rest
Take one and give me the rest.

7.5.8 Only

The expressions for ‘only’ is *rak* and the higher register *bilvad*. *bilvad* is, historically, morphologically complex. It is related to the exceptive *milvad*. Both seem to be derived from the adjective *levad* ‘alone’ and a preposition, *be-* ‘in’ and *mi-* ‘from’ respectively, though we do not know their actual etymology. Synchronically, both are simple forms.

- (142) a. rak Dani ba.
only Dani came.ms
Only Dani came.
- b. dani bilvad ba.
dani only came.ms
Only Dani came.
- c. rak studentim kiblu hanaxa.
only students got.3pl reduction
Only students got a reduction.
- d. studentim bilvad kiblu hanaxa.
students only got.3pl reduction
Only students got a reduction.
- (143) a. axalti rak SloSa tapuxim.
ate.1s only three.m apple.mpl
I ate only three apples.
- b. axalti SloSa tapuxim bilvad.
ate.1s three.m apple.mpl only
I ate only three apples.

7.5.9 *Partitives*

Hebrew has syntactically complex partitive quantifiers. Proportional partitives were described in Section 7.4. The determiner in a partitive may also be cardinal, interrogative, or negative.

- (144) a. Snayim me-ha-studentim
two from-the-student.mpl
Two of the students
- b. harbe me-ha-studentim
many from-the-student.mpl
Many of the students
- c. eyze me-ha-studentim?
which from-the-student.mpl?
Which of the students?
- d. af exad me-ha-studentim
n1 one from-the-student.mpl
None of the students
- e. xaci me-ha-studentim
half from-the-student.mpl
Half of the students

The universal determiner *kol* cannot on its own occur in a partitive structure, but it can do so as part of the complex *kol exad* ‘every one’. The resulting quantifier is distributive. (Other distributive readings induced by *kol exad* are described in Section 7.5.14).

- (145) *kol exad me-ha-studentim*
 all one from-the-student.mpl
 Each one of the students

It is possible that Hebrew has morphologically simple partitives, namely *rov* ‘most’ and *marbit* ‘most’, described in Section 7.4, and *yeter* ‘rest’ and *S’ar* ‘rest’, in Section 7.5.7. However, as discussed, this depends on whether these lexemes are to be analyzed as determiners or as construct state nouns.

7.5.10 *Quantifiers Functioning as Predicates*

Only cardinal determiners can be predicative.

- (146) a. *ha-studentim hayu rabim.*
 the-students be.3pl many.pl
 The students were numerous.
- b. *anaxnu SloSa.*
 we three.m
 We are three.
- c. **anaxnu kol / rov.*
 we all / most
 *We are all / most.

However, quantifiers formed from universal and proportional determiners can also be used predicatively.

- (147) a. *anaxnu kol ha-kvuca.*
 we all the-team
 We are the entire team.
- b. *ele rov ha-klafim.*
 these most the-cards
 These are most of the cards.
- c. *ha-yladim Seli hem Sney SliS me-ha-kita.*
 the-children of.1s be.pl two.cs third from-the-class
 My children are two thirds of the class.

7.5.11 *Determiners Functioning as NPs*

Universal and proportional determiners cannot function as NPs.

- (148) ha-anivot hayu yekarot az kaniti Stayim / harbe / meat / kama
 the-ties were.pl expensive.pl so bought.1s two / many / few / some
 / *rov / *kol.
 / *most / *all
 The ties were expensive so I bought two / many / few / some / *most / *all.

For the determiners *kol* and *rov* to function as NPs they must occur in the construct state with inflection marking the person, gender and number of the noun that denotes their domain.

- (149) ha-anivot hayu yekarot az kaniti et ruban /
 the-ties were.pl expensive.pl so bought.1s acc. most.cs.3fpl /
 kulan.
 all.cs.3fpl
 The ties were expensive so I bought most / all of them.

7.5.12 *Distribution*

Quantified NPs can occur in all grammatical functions.

- (150) a. SloSa anaSim ba'u.
 three.m people came
 Three people came.
- b. raiti SloSa anaSim.
 saw.1s three.m people
 I saw three people.
- c. aniti al kol Se'ela.
 answered.1s on all question
 I answered every question.
- d. natati SloSa sfarim le-kol yeled.
 gave.1s three.m book.mpl to-all child
 I gave three books to every child.
- e. rov ha-mafginim ne'ecru.
 majority.cs the-demonstrator.mpl were.arrested.3pl
 Most demonstrators were arrested.
- f. Sney ha-horim Sel kol mafgin ne'ecru.
 two.cs the-parents of every demonstrator were.arrested.3pl
 Every demonstrator's two parents were arrested.

As in English, overtly negated NPs are better in subject position than in other positions.

- (151) a. lo kol student ana al kol se'ela.
 neg all student answered on every question
 Not every student answered every question.

- b. *kol student ana al lo kol Se'ela.
every student answered.3sm on neg all question
*Every student answered not every question.
- c. *natati le-lo kol student sefer.
gave.1s to-neg every student book
*I gave not every student a book.
- d. ??kol yeled lo axal af tapuax.
all boy neg ate.3sm any_c apple
??Every boy ate no apple.
- e. af yeled lo axal kol tapuax.
any_c boy neg ate.3sm every apple
No boy ate every apple.

7.5.13 Scope Ambiguities

When a predicate has two or more quantified NP arguments, scope ambiguities arise. (152) has both a subject wide scope (SWS) and an object wide scope (OWS) reading, though OWS seems to us preferred.

- (152) orexet axat kar'a kol tyuta.
editor one.f read.3fs all draft
One editor read every draft.

When the co-intersective determiner *kol* has a definite plural complement, the SWS reading is very strongly preferred.

- (153) orexet axat kar'a et kol ha-tyutot.
editor one.f read.3sf acc. all the-drafts
One editor read all the drafts.

In (154), the collective reading and SWS readings are prominent. OWS is harder to get.

- (154) SaloS morot badku mea bxinot.
three.f teachers.f check.3pl hundred exams
Three teachers graded a hundred exams.

In (156), the SWS reading is most prominent.

- (155) harbe morot badku mea / et kol ha- bxinot.
many teachers.f checked.3plf hundred / acc. all the- exams
Many teachers read a hundred / all the exams.

The expression *kol exad/axat* forces distributive readings.

- (156) harbe morot badku kol axat mea / et kol ha- bxinot.
many teachers.f checked.3fpl all one.f hundred / acc. all the- exams
Many teachers each read a hundred / all the exams.

For cardinals, including modified numerals, in object position, narrow scope is strongly preferred, though a wide scope reading is also possible for some speakers. The OWS reading is readily available if the object NP is stressed.

- (157) a. kol student kara le-faxot maxaze exad Sel levin.
all student read.3ms to-less play one of Levin
Every student read at least one play by Levin.
- b. kol student kara SloSa maxazot Sel levin.
all student read.3ms three.m play of Levin
Every student read three plays by Levin.

The following examples show the scope possibilities in *wh*- questions.

- (158) a. eyze student ana al haxi harbe Se'elot? (SWS)
which student answered.3ms on most many question.fpl?
Which student answered the most questions?
- b. eyze student ana al kol ha-Se'elot? (SWS)
which student answered.3ms on all the-question.fpl?
Which student answered all the questions?
- c. eyze student ana al kol Se'ela? (SWS/OWS)
which student answered.3ms on all question?
Which student answered every question?
- (159) a. al eyze Se'ela ana kol student? (SWS/OWS)
on which question answered.3ms every student
Which question did every student answer?
- b. al eyze Se'elot ana kol student? (SWS/OWS)
on which questions answered.3ms every student
Which questions did every student answer?
- (160) a. al eyze Se'ela anu kol ha-studentim? (SWS/OWS)
on which question answered.3pl all the-student.mpl?
Which question did all the students answer?
- b. al eyze Se'ela kol ha-studentim anu? (SWS)
on which question all the-student.mpl answered.3pl?
Which question did all the students answer?
- c. al eyze Se'elot anu kol ha-studentim? (SWS)
on which questions answered.3pl all the-student.mpl?
Which questions did all the students answer?
- d. al eyze Se'elot kol ha-studentim anu? (SWS)
on which questions all the-student.mpl answered.3pl?
Which questions did all the students answer?

Self-Embedding QNPs

As discussed in Section 7.5.1 above, in self-embedding QNPs such as quantified possessives, the possessor NP tends to take scope over the possessed NP. However, if the embedded NP consists of *kol* ‘each’ followed by a singular noun, it scopes over the whole QNP.

- (161) Sney xaverim Sel kol sar
 two.cs friends of each minister
 Two friends of each minister
 *TWO x : x IS A FRIEND OF EACH MINISTER
 FOR EVERY MINISTER x : TWO FRIENDS OF x .

In (162), with a relational noun, narrow scope for the possessor is strongly preferred, though (163) shows that given enough context, wide scope is also possible when the determiner is stressed.

- (162) ima Sel kol ha-sarim
 mother of al the-ministers
 All the ministers’ mother
 THE x : x IS THE MOTHER OF ALL THE MINISTERS
 ??FOR EVERY MINISTER x , x ’S MOTHER.

- (163) A: ima Sel sar ha-bri’ut gara be-xul.
 mother of minister.cs the-health lives.sf in-abroad
 The health minister’s mother lives abroad.
 B: ima Sel KOL ha-sarim gara be-xul.
 mother of all the-monisters lives.sf in-abroad
 ALL ministers’ mothers live abroad.
 FOR EVERY MINISTER x : x ’S MOTHER LIVES ABROAD.

As mentioned in Section 7.5.1, there are restrictions on the cooccurrence of QNPs in possessives which have to do with negation. When the possessed NP is an *n-word*, it can cooccur naturally with a referential possessor NP, as in (164-a). It can also cooccur naturally with another *n-word* in the possessor, as in (164-b). However, it cannot cooccur with a QNP, as the examples in (164-c,d) show. (164-d) is marginally possible if the possessor NP receives narrow scope, but as mentioned earlier, narrow scope for *kol*+singular NP, interpreted as ‘each’, is difficult to get.

- (164) a. af xaver Sel dani lo ba.
 any_c friend of Dani neg came.3ms
 None of Dani’s friends came.
 b. af xaver Sel af yeled lo ba.
 any_c friend of any_c boy neg came.3ms
 None of any boy’s friends came.

- c. *af xaver Sel harbe yladim lo ba.
 any_c friend of many boys neg came.3ms
 ?? None of many boys' friends came.
- d. *af xaver Sel kol yeled lo ba.
 neg_c friend of every child neg came.3ms
 Intended: Every boy is such that none of his friends came.
 Marginally possible: NO *x* SUCH THAT *x* IS A FRIEND OF EACH BOY
 CAME.

Similarly, the possessor NP cannot be an *n*-word unless the possessed NP is also an *n*-word (as in (164-b)).

- (165) a. ??kol xaver Sel af yeled lo ba.
 all friend of any_c boy neg came.3ms
 Intended: No boy is such that every friend of his came.
- b. ??rov ha- / harbe / SloSa xaverim Sel af yeled lo bau.
 majority.cs the- / many / three.m friends of any_c boy came
 Intended: No boy is such that most / many / three of his friends
 came.

In short, the generalization seems to us to be that within a possessive NP, an *n*-word cannot, or cannot easily, cooccur with a QNP.

Ambiguity Between Nominal and Verbal Quantifiers

Many verbal and nominal quantifiers can scope freely.

- (166) a. Sney yeladim Saru kol paam.
 Two boy.mpl sang.3pl every time
 Two children sang every time.
 FOR TWO CHILDREN *x*: *x* SANG EVERY TIME
 FOR EVERY TIME *t*, TWO CHILDREN SANG AT *t*
- b. kol ha-yladim Saru paamayim.
 all the-boy.mpl sang.3pl time.dual
 All the children sang twice.
 FOR ALL CHILDREN *x*: *x* SANG TWICE
 FOR TWO TIMES *t*, ALL CHILDREN SANG AT *t*

When the nominal quantifier is *kol* followed by a singular noun, i.e. on its interpretation as 'each', it preferably has wide scope.

- (167) kol yeled Sar paamayim.
 each boy sang.3ms time.dual
 Each child sang twice.
 FOR EACH CHILD *x*: *x* SANG TWICE
 ??FOR TWO TIMES *t*, ALL CHILDREN SANG AT *t*

Scope in Existentials

In an existential, the pivot NP tends to scope below any QNP in the coda (Kuno 1971, Francez 2007, 2009)

- (168) yeS Sney kursim kol yom.
 EX two.cs course.mpl all day
 There are two classes every day
 FOR EVERY DAY d , THERE ARE TWO CLASSES ON d
 FOR TWO CLASSES c , c TAKES PLACE EVERY DAY.

7.5.14 Distributivity

The expression *kol exad/axat* mentioned in Section 7.5.9 can occur following a verb to yield a distributive reading of the subject.

- (169) a. ha-xayalim hexziku kol exad Stey xanitot.
 the-soldier.mpl held.3pl all one two.cs spears.
 The soldiers held two spears each.
- b. SloSa xayalim hexziku kol exad Stey xanitot.
 three soldier.mpl held.3pl all one two.cs spears.
 Three soldiers held two spears each.

Another form of distributivity can be achieved by reduplication, either of a numeral or of a common noun. In (170), not only is one of the arguments distributed, but there is an (uncancellable) implication that the different events involved happen in temporal sequence. This implication is not present with stative predicates, as shown in (171). For example, in (171-b), there is no requirement that the songs became great in sequence. Reduplication with stative predicates is only possible with the numeral *one*.

- (170) a. ha-yladim nixnesu exad exad / Snayim Snayim la-kita.
 the-children entered.3pl one one / two two to.the-class
 The children entered the class one by one / two by two.
- b. ha-rofa badka et ha-yldaim exad exad / Snayim
 the-doctor examined.3fs acc. the-children one one / two
 Snayim / yeled yeled
 two / boy boy
 The doctor examined the children one (boy) at a time / two at a time.
- c. ha-xayot nixnesu la-teva zugot zugot.
 the-animals entered.3pl the-arc couples couples
 The animals entered the arc one pair at a time.

- (171) a. ha-mexoniyot hayu dfukot axat axat.
 the-cars were.pl crappy one one
 The cars were all crappy.
- b. ha-Sirim Sela me'ulim exad exad.
 the-songs of.3fs good.pl one one
 Her songs are all great.

7.5.15 *Count and Mass*

The determiner *kol* cannot combine with mass nouns and can combine with a bare count noun only when the noun is singular (except for the NPI used of *kol* mentioned in Section 7.3).

- (172) a. kol yeled
 all child
 Every child
- b. *kol yeladim
 all children
 Every children
- c. *kol sukar
 every sugar
 *Every sugar

Numerals can combine with plural count nouns but not mass nouns.

- (173) a. Sney yladim
 two.cs children
 Two children
- b. *Sney sukar
 two.cs sugar
 Two sugar (Possible only on conventional reading, e.g. two spoonfuls.)

The determiners in (174) can combine with both plural count nouns and mass nouns.

- (174) a. *kama?* 'how many?'
 b. *harbe* 'many/much'
 c. *me'at* 'few/little'

In more formal varieties, the adverbial *kcat* 'a little' combines with mass but not count nouns. However, in spoken varieties this restriction is not maintained. Thus, examples like (175) would be considered ungrammatical by prescriptivist grammarians, but are abundant in informal spoken and written registers. (176) shows *kcat* in its adverbial use.

- (175) ba'u rak kcat anaSim.
 came.3pl only a.little people
 Only a few people came.
- (176) ani kcat ayefa.
 I a.little tired.f
 I am a little tired.

7.5.16 *The Indexing Function of Universal Quantifiers*

The domain of the universal quantifier *kol* (or *kol* + numeral, (177-c)) can be used as an index set for the enumeration of another set. No other quantifier is possible in this kind of construction.

- (177) a. yoter (ve-yoter) anaSim konim subaru kol Sana.
 more (and-more) people buy.pl Subaru every year.
 More (and more) people buy Subarus each year.
- b. al kol ben adam Se-met noldaim xamiSa.
 on every son.cs human that-die.sm born.mpl five.m
 For every death there are five births.
- c. al kol SloSa anaSim Se-metim nolad exad.
 on every three.m people that-die.pl born.ms one
 For every three deaths there is one birth.

An effect similar to that of (177-a) can be achieved by adverbials, as in the following examples.

- (178) a. yoter anaSim konim subaru ba-Sanim ha-axronot.
 more people buy.3pl Subaru in.the-years the-last.pl
 More people buy Subarus in recent years.
 For each recent year n , the number of subarus bought during n is larger or equal to the number of Subarus bought the previous year.
- b. mi-Sana le-Sana yoter anaSim konim subaru.
 from-year to-year more people buy.3pl Subaru
 From year to year, more people buy Subarus.
- c. ke-xol Se-nos'im daroma yeS paxot ecim.
 as-all that-go.pl south EX less tree.mpl
 There are less and less trees as you go south.

Rate Phrases

- (179) a. ha-rakevet nosaat arba-meot kilometer le-Saa.
 the-train travels.3fs four-hundreds kilometer to-hour
 The train goes 400 km/hr.

- b. ani rac esrim kilometer be-/le-yom.
I run.sm twenty kilometer in-/to-day
I run 20 km a day.
- c. Dan roxec panim SaloS peamim be-yom / kol yom.
Dan wash.sm face three.f times in-day / all day
Dan washes his face three times a day / every day.

7.5.17 Type ⟨2⟩ Quantifiers

- (180) a. eze studentim anu al eze Se'elot?
which student.mpl answered.3pl on which question.fpl?
Which students asked which questions?
- b. kol ha-studentim anu al otan Se'elot.
all the-student.mpl answered.3pl on same.f question.fpl
All the students answered the same questions.
- c. kol student ana al Se'ela axeret.
all student answered.3ms on question other.f
Each student answered a different question.

(181-a) says that not all students answered the same questions. It does not require that no two students answer the same question. Similarly, (181-b) says only that the judges were not all in agreement about the conclusions.

- (181) a. studentim Sonim anu al Se'elot Sonot.
student.mpl different.plm answered.3pl on question.fpl different.plf
Different students answered different questions.
- b. Softim Sonim hesiku maskanot Sonot
judge.mpl different.plm drew.3pl conclusion.fpl different.f
me-oto ti'un.
from-same.m argument
Different judges drew different conclusions from the same argument.
- (182) a. dani ve-rut xayim be-xadarim nifradim (be-oto bayit).
Dani and-Rut live.pl in-room.mpl separate.pl (in-same.m house)
Dani and Rut live in separate rooms (in the same house).
- b. kol ha-miStatfim lavSu anivot be-oto ceva.
all the-participants wore.3pl ties in-same.m color
All the participants wore the same color ties.
- c. dan rakad im rut aval af exad axer lo rakad
Dan danced.3ms with Rut but any_c one other.m neg danced.3sm
im af exad.
with any_c one
Dan danced with Rut but no one else danced with anyone else.

Hebrew does not have equivalents to the English sentences in (183).

- (183) a. Some cars are faster than others.
 b. Some girls' mothers are bigger than other girls' mothers

To express these sentences in Hebrew, one of several possible periphrastic constructions is required. Possible translations of (183-a) are shown in (184), and of (183-b) in (185).

- (184) a. lo kol ha-mexoniyot mehirot be-ota mida.
 neg all the-car.fpl fast.pl in-same.f measure
 Not all cars are fast to the same degree.
 b. yeS mexoniyot yoter mehirot ve-paxot mehirot.
 EX car.fpl more fast.fpl and-less fast.fpl
 There are faster and slower cars.
- (185) lo le-kol ha-banot yeS ima be-oto godel.
 not to-all the-girls EX mother in-same.m size
 Not all girls have the same size mother.

7.5.18 Type $\langle\langle 1, 1 \rangle, 1\rangle$ Quantifiers

Comparative D-Quantifiers

Comparative D-quantifiers in Hebrew have the same distribution as other QNPs, with the exception of possessive NPs.

- (186) a. yoter / paxot banim mi-banot bau.
 more / less boy.mpl from-girl.fpl came.3pl
 More/ less boys than girls came.
 b. axalti yoter tapuxim mi-bananot.
 ate.1s more apple.mpl from-banana.fpl
 I ate more apples than bananas.
 c. dibarti im yoter / paxot banim mi-banot
 talked.1s with more / less boy.mpl from girl.fpl
 I talked to more / less boys than girls.
 d. ani maxSiv yoter banim mi-banot le-xaverim Seli.
 I consider more boy.mpl from-girl.fpl to-friends of.1s
 I consider more boys than girls friends.

In a possessive NP, comparatives are somewhat marginal.

- (187) a. ? ha-kelev Sel yoter banim mi-banot barax.
 the-dog of more boys from-girls escaped
 More boys' than girls' dog escaped.

- b. ??ha-yladim Sel yoter amerikaim mi-germanim miStamSim
 the-child.mpl of more Americans from-Germans use.pl
 be-samim.
 in-drug.mpl
 The children of more Americans than Germans take drugs.

To express the meaning of the English determiner *as many ... as* Hebrew employs a locution meaning literally ‘the same number as’.

- (188) a. yeS le-faxot oto mispar Sel banim ve-banot ba-kita.
 EX to-less same.m number of boy.mpl and-girl.fpl in.the-class
 There are at least as many boys as girls in the class.
- b. yeS le-faxot oto mispar Sel banim ba-kita kmo Sel banot.
 EX to-less same.m number of boys in.the-class as of girls
 There are at least as many boys as girls in the class.
- c. yeS bidyuk oto mispar Sel toSavim po kmo be-italya
 EX exactly same.m number of resident.mpl here as in-Italy
 There is exactly the same number of residents here as in Italy.

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Chapter 8

Quantification in Hungarian

Aniko Csirmaz and Anna Szabolcsi

8.1 Basic Properties of Hungarian

Before turning to the checklist proper, we describe and summarize some basic properties of Hungarian. The section presents a few general observations about the morphology and syntax of Hungarian, followed by a discussion of some issues specific to quantifiers.

8.1.1 *Some Morphological and Syntactic Properties*

8.1.1.1 Morphology

Vowel Harmony

Hungarian is an agglutinative language. Allomorphic variation (as well as vowel inventory within morphemes) is regulated by vowel harmony; a specific morpheme, if harmonic, may show backness harmony only (with vowels being uniformly back or front), or rounding as well as backness harmony (with front vowels being either uniformly rounded or unrounded). The multiplicative suffix *-szor*, *-szer*, *ször*, for example, has three allomorphs whose distribution is determined by the vowel of the stem (a front unrounded vowel in (1a), a back vowel in (1b) and a front rounded vowel in (1c)).

- | | | | | | | |
|-----|----|----------|----|---------------|----|--------------|
| (1) | a. | egy-szer | b. | három-szor | c. | öt-ször |
| | | one-mult | | three-mult | | five-mult |
| | | ‘once’ | | ‘three times’ | | ‘five times’ |

If a harmonic suffix is discussed, the allomorphs are all listed in this chapter. For a more detailed discussion of vowel harmony and various aspects of the phonology of Hungarian, see Siptár and Törkenczy (2007).

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Adverbial Suffix

The suffix *-an, en* plays a significant role in the following discussion. In absence of conclusive evidence to the contrary, it is treated here as a single type of affix with multiple interpretations. In the glosses, it is marked by a subscript (*-an_{Adv}*, *-en_{Adv}*). The suffix can appear with a harmonizing vowel or the vowel may be elided, yielding the three possible realizations *-n, -an, en*. The suffix can yield an adverb, as shown by the deadjectival adverb below:

- (2) a. gyors b. gyors-an
 quick quick-an_{Adv}
 ‘quick’ ‘quickly’

The same suffix on a quantifier yields a predicative element. The predicative quantifier requires a human argument:

- (3) a. {A diákok / * a könyvek} hárm-an voltak
 the students-nom / the books-nom three-an_{Adv} were
 ‘The students / the books were three’
- b. A legtöbben {az elsős diákok / ?? a vadász-kutyák}
 the most-an_{Adv} the first year students-nom / the hunting-dogs-nom
 voltak
 were
 ‘The first-year students / the hunting dogs were the most numerous’
- c. {A diákok / * a könyvek} mindannyi-an a
 the students-nom / the books-nom all.as.many-an_{Adv} the
 szobában voltak
 room-inessive were
 ‘The students / the books were all in the room’

8.1.1.2 Glosses

The glosses in the examples do not indicate every morphological component. Unless the details are relevant, only the appropriate English equivalent is provided. Several morphemes in Hungarian, including singular number, nominative case and present tense, are null. Of these, only nominative case is marked in the glosses.

8.1.1.3 Word Order, Focus and Left Dislocation

Word order is flexible in Hungarian; it is not determined by the grammatical function of the constituents, but rather by semantic and pragmatic properties. Topics generally appear at the left edge of the clause, as shown below.

In a neutral sentence (a declarative affirmative sentence without focus) a verbal particle, if there is one, immediately precedes the verb. The particle is generally selected by the verb – in (4) *olvas* ‘read’ selects *el* ‘away’ – and it often

has a directional interpretation.¹ In (4), the particle only yields perfective interpretation, and has no directional meaning (for convenience, the elements that function as particles are marked by subscript throughout).

- (4) A diákok_{topic} el_{particle} olvasták a verset
 the students-nom away read the poem-acc
 ‘The students read the poem’

Focused constituents immediately precede the verb. If a clause contains focus, the particle appears in a postverbal position, as shown below (capital letters indicate focusing). Focus has contrastive interpretation, and generally has an exhaustive interpretation.

- (5) A diákok_{topic} [a VERSET]_{focus} olvasták el_{particle}
 the students-nom the poem-acc read away
 ‘The students read the POEM’ (and not the essay)

Constituents may also undergo left dislocation or contrastive topicalization. These constituents are located at the left edge of the clause, and have a contrastive interpretation. Left dislocated constituents form an independent prosodic unit, and they have a marked, fall-rise intonation. The left dislocated constituent is italicized below.

- (6) *A verset* el_{particle} olvasták a diákok
 the poem-acc away read the students-nom
 ‘The poem, the students read’ (but perhaps they didn’t read the essay or the novel)

In addition to left dislocation (contrastive topicalization), focusing (especially contrastive and corrective focusing) can also affect some interpretative properties of the focused constituents. In general, however, both left dislocation and focusing will be ignored in the following discussion. For more details and overviews of other issues in Hungarian, including that of quantifiers and negation, see É. Kiss (2002), Kenesei et al. (1998), Kiefer and É. Kiss (1994), and the articles in the series *Approaches to Hungarian* (Kenesei 1985–2011).

8.1.2 Some Properties of Quantifiers

Although Section 8.15 addresses the distribution of quantifiers in more detail, the remarks below will help the reader process the examples throughout the chapter.

¹ In addition to *el*, *olvas* may appear with other particles; the interpretation is somewhat different (for example, with *fel* ‘up’, the meaning is ‘read aloud’ and with *meg* ‘perfective’, the resulting interpretation is ‘count up’).

Quantifiers appear in designated regions in the Hungarian preverbal field. Proceeding from left to right, contrastive topics can be followed by neutral topics (region 1), quantifiers (region 2), and counting or focused expressions (region 3) (É. Kiss 1994, Szabolcsi 1997, 2010). Regions 1 and 2 only contain increasing quantifiers. Region 3, which is immediately preverbal, can contain increasing, decreasing, and non-monotonic quantifiers alike. Quantifiers in region 2, whether universal or existential, receive an obligatorily distributive interpretation. Any number of quantifiers can appear in regions 1 and 2, as long as they have the appropriate semantic properties; region 3 can only host one quantifier.

In the preverbal field, scope is determined by the left-to-right order of the quantifiers. Accordingly, sets of students can vary with books in the second, but not in the first example in (7) (possibly ‘referential’ uses of indefinites should be ignored in evaluating such descriptive generalizations).

- (7) a. Több, mint hat diák minden könyvet $el_{particle}$ olvasott
 more than six student-nom every book-acc perf read
 ‘More than six students read every book’
 (more than six students > every book)
- b. Minden könyvet több, mint hat diák olvasott $el_{particle}$
 every book-acc more than six student-nom read perf
 ‘Every book was read by more than six students’
 (every book > more than six students)

The order of quantifiers which appear in the post-verbal field is not constrained by semantic properties. Arguably the post-verbal constituents are ordered by phonological weight (É. Kiss 2009), and the scope of post-verbal quantifiers is affected by prosodic factors (Brody and Szabolcsi 2003, Hunyadi 1999, 2002, Jackson 2008, Surányi 2003). Multiple post-verbal quantifiers have ambiguous scope, and a stressed post-verbal universal quantifier may take scope over a preverbal quantifier.

Left dislocation (contrastive topicalization) also affects the interpretation of quantifiers. Left dislocated elements, which have a marked fall-rise contour, take narrow scope with respect to preverbal operators, including negation. In other words, they behave for scope interpretation as though they were in the post-verbal field.

Finally, a comment on the internal structure of quantifier expressions. If the noun appears with a quantifier or numeral, the noun head has no overt number marking. Any constituent that agrees with a QP or numeral shows singular rather than plural marking:

- (8) a. a fiú fut b. a fiúk futnak
 the boy-nom run-3sg the boy-plural-nom run-3pl
 ‘The boy runs’ ‘The boys run’
- (9) {minden / sok / két} fiú fut
 every / many / two boy-nom run-3sg
 ‘All / many / two boys run’

With this background information, let us proceed to the Quantifier Questionnaire proper.

I Core Quantifiers: Three Basic Semantic Classes

The core quantifiers are illustrated below.

8.2 Generalized Existential (Intersective) Quantifiers

8.2.1 *D-Quantifiers*

Cardinal quantifiers are illustrated below. With these quantifiers, the noun lacks plural marking.

- (10) a. Láttam Churchill egy képét a kandalló felett
 saw-I Churchill one picture-possessive-acc the fireplace above
 ‘I saw a / one picture of Churchill above the fireplace’
- b. *Néhány* tengerész énekel az utcán
 some sailor-nom sings the street-supressiveive
 ‘Some sailors are singing in the street’

Numerals higher than ‘one’ (e.g. *hat* ‘six’) receive an ‘exactly’ interpretation when they bear focus accent in the immediately preverbal position. In post-verbal position they are stressed but cannot be focused, and they may have an ‘at least’ interpretation. There is no dedicated indefinite article. The numeral *egy* ‘one’ differs from higher numerals in that it is unstressed unless focused; in that case it is used and translated as ‘a(n)’.

- (11) a. HAT tengerészt láttam b. ‘Láttam ‘hat ‘tengerészt
 six sailor-acc saw-I saw-I six sailor-acc
 ‘I saw (exactly) six sailors’ ‘I saw six sailors’
- (12) a. EGY tengerészt láttam b. ‘Láttam egy ‘tengerészt
 one sailor-acc saw-I saw-I one sailor-acc
 ‘I saw (exactly) one sailor’ ‘I saw a sailor’

When the verb is negated, a post-verbal numeral phrase that is entirely destressed receives narrow existential scope. *Egy* ‘one’ is a positive polarity item and is preferably omitted here. A post-verbal numeral phrase which is stressed as above receives wide existential scope:

- (13) ‘Nem láttam hat tengerészt / (egy) tengerészt.
 not saw-I six sailor-acc / one sailor-acc
 ‘I haven’t seen six sailors altogether / one sailor’

- (14) 'Nem láttam 'hat 'tengerészt / egy 'tengerészt.
 not saw-I six sailor-acc / one sailor-acc
 'There are six sailors/there is a sailor that I haven't seen'

Negative determiners are negative concord items (cf. Section 8.14). They include the following: *sehány* 'no number [count noun]', *semmi*, *semennyi* 'no amount [mass noun]', *semelyik* 'none (of)', as shown in (15). *Nulla* 'zero' is not used as a negative determiner (16).

- (15) a. *sehány diák* b. {*semmi / semennyi*} *víz*
 NC.how.many student NC.what / NC.how.much water
 'no student' 'no water'
- c. *semelyik diák* d. *semmilyen diák / víz*
 NC.which student NC.what.kind student / water
 'none of the students' 'no student / water'
- (16) a. *Semmi érdeklődést nem* b. * *Nulla érdeklődést mutatott*
 NC.what interest-acc not zero interest-acc showed
 mutatott 'He showed zero interest'
 showed
 'He showed no interest'

Interrogative expressions appear in focus position, immediately preceding the verb (cf. Section 8.1.1.3).

- (17) *Hány diák ment át_{particle} a vizsgán?*
 how many student-nom went through the exam-superessive
 'How many students passed the exam?'
- (18) *Hány diák jött el_{particle} az előadásra?*
 how many student-nom came away the lecture-sublative
 'How many students came to the lecture?'
- (19) *Mely diákok mentek át_{particle} a vizsgán?*
 which students-nom went_{pl} through the exam-superessive
 'Which students passed the exam?'

Value judgment quantifiers include the unmodified quantifiers *sok* 'many, much', *kevés* 'few, little' and *elég* 'enough'.

Focusing makes an interpretive difference with *sok*. In a non-focused, neutral position, as in (20a), the monotone increasing quantifier expression *sok diák* evokes a set of known individuals. If it is focused, as in (20b), *sok* provides a numerical judgment. Decreasing quantifiers must appear in the focus position when they precede the verb, with the particle following the verb (21).

- (20) a. *Sok diák ki_{particle} ment*
 many student-nom out went
 'Many students left'

- b. Sok diák ment ki_{particle}
 many student-nom went out
 ‘The students who left were many’
- (21) a. * Kevés diák ki_{particle} ment
 few student-nom out went
 ‘Few students left’
- b. Kevés diák ment ki_{particle}
 few student-nom went out
 ‘Few students left’

There is no distinction between mass and count nouns for value judgment quantifiers. The nouns *diák* ‘student’ and *víz* ‘water’ can both appear with *sok*, *kevés* or *elég*:

- (22) a. sok diák / víz / szeretet b. kevés diák / víz / szeretet
 many student / water / love few student / water / love
 ‘many students / much water / much love’ ‘few students / little water / little love’
- c. elég diák / víz / szeretet
 enough student / water / love
 ‘enough students / enough water / enough love’

Some additional examples with value judgment quantifiers:

- (23) a. Sok diák ott volt az előadáson, de kevés
 many student-nom there was the lecture-superessive but few-nom
 értette
 understood
 ‘Many students attended the lecture, but few understood it’
- b. Elég tag volt jelen ahhoz, hogy határozatképesek
 enough member-nom was present it.to that decision competent-pl
 legyenek
 be-subj.3pl
 ‘Enough members attended to constitute a quorum’

8.2.2 A-Quantifiers

- (24) a. János hat-szor meg bukott a vizsgán, mielőtt
 J-nom six-mult perfective failed the exam-superessive before
 heted-szer-re át_{particle} ment volna
 seventh-mult-onto through went be.conditional
 ‘János failed the exam twice before passing it the third time’
- b. i. Gyakran / időnként múzeumba megy hétvégenként
 often / occasionally museum-illative goes weekend-dist
 ‘He often / occasionally visits museums on weekends’

- ii. Soha nem megy múzeumba hétvégenként
 never not goes museum-illative weekend-dist
 ‘He never visits museums on weekends’

A-quantifiers are illustrated below. Multiplicatives (e.g. *twice*, *ten times*, *many times*) are cardinal numerals with the multiplicative suffix *-szor*, *-szer*, *-ször*. Frequency adverbs appear with one of the distributive suffixes (*-nként* or *-onta*, *-ente*), as shown in (26). For a more in-depth discussion of A-quantifiers in Hungarian, see Csirmaz (2009).

(25) Multiplicatives

- | | |
|--|---|
| a. kétszer
two times
‘twice’ | b. n-szer
n-times
‘n times’ |
| c. sokszor
many times
‘many times’ | d. nem nagyon sokszor
not very many times
‘not very many times’ |

(26) Frequency adverbs

- | | |
|--|--------------------------------------|
| a. idő-nként
time-distributive
‘sometimes, occasionally’ | b. het-ente
week-dist
‘weekly’ |
| c. órá-nként
hour-dist
‘hourly’ | |

(27) Other A-quantifiers

- | | |
|-------------------------------|--|
| a. néha
seldom
‘seldom’ | b. (szinte) soha
(almost) never
‘(almost) never’ |
|-------------------------------|--|

8.3 Generalized Universal (Co-intersective) Quantifiers

8.3.1 D-Quantifiers

The basic D-quantifiers in Hungarian are *mind(en)* ‘every’, *mindegyik* ‘each’ and *az összes* ‘all’. *Minden* can form a complex quantifier with wh-words, as shown below.

- | | | |
|---|---|--|
| (28) a. minden könyv
mind-en _{Adv} book
‘every book’ | b. minden-ki
mind-en _{Adv} -who
‘everyone’ | c. minden-hol
mind-en _{Adv} -where
‘everywhere’ |
|---|---|--|

- | | | | |
|----|--|--|-------------------------------------|
| d. | minden
mind-en _{Adv}
'everything' | e. * minden-mi
mind-en _{Adv} -what
'everything' | f. mind-egyik
mind-one
'each' |
|----|--|--|-------------------------------------|

In addition to *minden*, *bár*-elements can also have a universal interpretation, as shown in (29c).

- (29) a. {Minden / mindegyik} gyerek nyert egy díjat
mind-en_{Adv} / mind-one child-nom won a price-acc
'Every / each child won a prize'
- b. {Minden / bármelyik} nyelvész meg tudja válaszolni azt
mind-en_{Adv} / any linguist perfective can answer-inf that-acc
a kérdést
the question-acc
'Any linguist can answer that question'²
- c. Bárki, aki be_{particle} fejezi a vizsgát, kap egy
any-who-nom who-nom in finishes the exam-acc gets a
díjat
price-acc
'Whoever finishes the exam gets a prize'³

Hungarian has a number of quantificational elements with universal interpretation. The remainder of this subsection offers a more in-depth description of these elements.

Mind, Minden

Universal interpretation may be expressed, among others, by *mind* and *minden*. The morpheme *mind* occurs in a variety of morpho-syntactic constructions which (i) do not have a unitary analysis in the literature and (ii) do not have literal equivalents in English. Acknowledging the special nature of *mind*, it is glossed as 'mind' below, and the translation of the examples gives an approximation of the meaning.

The following discussion contrasts *mind* and *minden* (the latter contains the adverbial suffix *-en*). Following a list of the environments where the two expressions appear, we note some additional properties. The data and characterizations provided constitute a pretheoretical description; no specific account is offered.

The environments where *mind* and *minden* appear are illustrated below.

² The word *bármelyik* is morphologically complex; it contains the wh-word *melyik* 'which' and the morpheme *bár* 'any'.

³ Similarly to *bármelyik* in the preceding example, *bárki* is morphologically complex, containing *bár* 'any' and the wh-word *ki* 'who'.

- (30) Minden
- | | |
|--------------------------------|-------------------------------|
| a. mind-en diák | b. mind-en |
| mind-en _{Adv} student | mind-en _{Adv} |
| ‘every student’ | ‘everything’ |
| c. mind-en-ki | d. mind-en-hol |
| mind-en _{Adv} -who | mind-en _{Adv} -where |
| ‘everyone’ | ‘everywhere’ |

- (31) Mind
- a. Predicative expression (cf. Section 8.1.1.1)
 A diákok tegnap mind el_{particle} jöttek
 the students-nom yesterday mind away came
 ‘The students all came yesterday’
- b. mind {az összes / a harminc} diák
 mind the all / the thirty student
 ‘all the students’ / ‘all the thirty students’
- c. mind János, mind Péter
 mind János mind Péter
 ‘János and Péter both’

Mind and *minden* are in complementary distribution; they cannot be interchanged in the preceding examples. Some properties of *mind* and *minden* are enumerated below. Alongside paired *is* ‘also’, paired *mind* express ‘both’:

- (32) {János is és Péter is / mind János, mind Péter}
 János-nom too and Péter-nom too / mind János-nom mind Péter-nom
 magas
 tall
 ‘Both János and Péter are tall’

Noun phrases quantified by *mind* or *minden* can be introduced by the overt definite article *a/az* ‘the’ when an appropriate phrase intervenes between them. Intervening personal pronouns are especially relevant, since they do not take articles themselves:

- (33) a. * a mind-en találkozás
 the mind-en_{Adv} meeting
 ‘every meeting’

- b. a vele való mind-en találkozás
 the he-with being mind-en_{Adv} meeting
 ‘every meeting with him’
- c. a te mind-en titkod
 the you mind-en_{Adv} secret-possessive,2sg
 ‘your every secret’
- d. a te vala-mennyi titkod
 the you some-how.many secret-possessive,2sg
 ‘your every secret’

According to Szabolcsi (1994), *a/az* does not introduce definiteness, but it converts the phrase into an argument (such that the resulting expression can function as an argument of a predicate); definiteness is a feature, not a morpheme.

Both *mind* and *minden* force a distributive interpretation (in contrast with the conjunction *és* ‘and’):

- (34) a. {Minden fiú / mind a két fiú} fel_{particle} emelte a
 every boy-nom / every the two boy-nom up lifted the
 zongorát
 piano-acc
 ‘Every boy / both boys lifted the piano’ (separately, *together)
- b. i. János és Péter barátok
 János-nom and Péter-nom friends
 ‘János and Péter are friends’
- ii. *Mind János, mind Péter barátok
 Mind János-nom mind Péter-nom friends
 ‘*János and Péter are both friends’

In addition, *mind* and *minden* may appear with mass nouns. They are restricted to environments that have a semantically or pragmatically negative flavor.

- (35) a. i. Mind-en víz szennyezett
 Mind-en_{Adv} water-nom polluted
 ‘All water is polluted’
- ii. A víz mind szennyezett
 the water-nom mind polluted
 ‘All of the water is polluted’
- b. János meg_{particle} ivott mind-en kávé
 János-nom perfective drank mind-en_{Adv} coffee-acc
 ‘János drank all the coffee’

- c. Mind-en gázt $ki_{particle}$ termelt a vállalat
 mind-en_{Adv} gas-acc out produced the company-nom
 ‘The company extracted all the gas’

Mindegyik

The distribution and interpretation of *mindegyik* is similar to that of *minden*; examples (33a–c) and (34a) can be replicated with *mindegyik*. Unlike *minden*, however, *mindegyik* is strictly a count quantifier. This contrast can be related to a morphological difference. *Mindegyik* contains the morpheme corresponding *egyik* ‘one’; it is expected then that it is ungrammatical with mass nouns (in contrast with the universals *mind* and *minden*)⁴:

- (36) a. mind-en sár b. mind az összes sár c. *mind-egyik sár
 mind-an_{Adv} mud mind the all mud mind-one mud
 ‘all the mud’ ‘all the mud’ ‘*each mud’

Az összes

Az összes (the all) has universal interpretation, similarly to the quantificational elements above. *Összes* heads the complement of the definite determiner (37). The definite expression *az összes* is a plural definite; the following properties, which distinguish this expression from universal quantifiers, follow from this fact. As noted in Section 8.3.1, *az összes* appears among topics, in region 1 (38). A postverbal *az összes* is also unable to take wide scope over preverbal constituents, in contrast with *mind* and *minden* (39) (‘ indicates salient stress).

- (37) [az [összes könyv]]
 the all book
 ‘all the books’
- (38) a. [Az összes vendég] [mindent] $meg_{particle}$ kóstolt
 the all guest-nom everything-acc perfective tasted
 ‘All the guests tasted everything’ (all the guests > everything)
- b. * [Mindent] [az összes vendég] $meg_{particle}$ kóstolt
 everything-acc the all guest-nom perfective tasted
 ‘Everything was tasted by all the guests’ (everything > all the guests) (intended)
- (39) a. Kevés diák olvasott el_{particle} ‘minden könyvet’
 few student-nom read away every book-acc
 ‘Every book was read by few students’ (every book > few students)

⁴ The determiner *mindegyik* may appear with a mass noun if the latter has a kind reading. With this coerced interpretation, (36c) is acceptable.

- b. Kevés diák olvasta *el_{particle}* az ‘összes könyvet’
 few student-nom read_{def} away the all book-acc
 ‘All the books were read by few student’ (all the books > few students) (unavailable)

Valamennyi

The morphologically complex quantificational determiner *valamennyi* is ambiguous between the existential ‘some (smallish) amount/number of’ and the universal ‘each’ interpretations. Its morphological makeup by itself predicts the existential interpretation; no compositional analysis has been proposed for the universal one.

- (40) a. János *el_{particle}* olvasott / *olvasta *vala-mennyi* könyvet
 János-nom away read_{indef} / read_{def} some-how.many book-acc
 ‘János read some books’ (existential *valamennyi*)
 b. János *vala-mennyi* könyvet *el_{particle}* olvasta / *olvasott
 János-nom some-how.many book-acc away read_{def} / read_{indef}
 ‘János read every book’ (universal *valamennyi*)

8.3.2 A-Quantifiers

A-quantifiers are always morphologically complex, as discussed in more detail in Section 8.19.2. Some examples of co-intersective A-quantifiers are given below.

- (41) a. *mind-ig*
 every-until
 ‘always’
 b. *minden alkalommal*
 every occasion-with
 ‘every time’
 c. *minden egyes alkalommal*
 every single time-with
 ‘every time’
- (42) a. *Mindig* busszal megyek iskolába
 always bus-instrumental ride-I school-illative
 ‘I always ride the bus to school’
 b. János minden alkalommal *meg_{particle}* vágja magát, amikor
 János-nom every time-instrumental perfective cuts self-acc when
 borotválkozik
 shaves
 ‘János cuts himself every time he shaves’

8.4 Proportional Quantifiers

8.4.1 *D-Quantifiers: D + N*

The simple proportional quantifiers are given in (43). Modified and complex examples appear in (44); and (45) offers some additional examples.

- (43) a. a legtöbb (könyv) b. a fele (könyv)
 the most book the half-possessive book
 ‘most books’ ‘half of the books’
- (44) a. (csak / pontosan / csupán / legalább / több, mint) tízből hét
 just / exactly / merely / at least / more than ten-from seven
 (könyv)
 book
 ‘(just / exactly / only / merely / at least / more than) seven out of ten
 (books)’
- b. tízből csak egy (könyv)
 ten-from only one book
 ‘only one book in ten’
- c. tízből egy (könyv) sem
 ten-from one book nor
 ‘not one (book) in ten’⁵
- (45) a. {Sok / Kevés} Nobel-díjas skandináv
 many / few Nobel-prize.with Scandinavian
 ‘Many / Few Nobel Prize winners have been Scandinavian’
- b. A legtöbb költő álmodozik
 the most poet-nom daydreams
 ‘Most poets daydream’
- c. Tízből hét költő álmodozik
 ten-from seven poet-nom daydream
 ‘Seven out of ten poets daydream’
- d. Tízből több, mint két diák fog díjat nyerni
 ten-from more than two student-nom will prize-acc win-infinitive
 ‘More than two students in ten will get a prize’
- e. Tízből egy tanár sem tudja a választ arra a
 ten-from one teacher-nom nor knows the answer-acc that-sublative the
 kérdésre
 question-sublative
 ‘Not one teacher in ten knows the answer to that question’

⁵ We treat *se(m)* as the negative concord item counterpart of *is* ‘too’; cf Section 8.14 and Surányi (2002, 2006) for more details.

8.4.2 A-Quantifiers

A-quantifiers are morphologically complex (cf. Section 8.19.2). They often contain an adverbial, multiplicative or distributive suffix, as noted below.

- (46) a. sűrű-n b. gyakr-an c. ritká-n
 frequent-n_{Adv} often-an_{Adv} thin-n_{Adv}
 ‘frequently’ ‘often’ ‘rarely’
- d. néha e. legtöbb-ször f. rendszer-int
 seldom most-multiplicative system-as
 ‘seldom’ ‘mostly’ ‘regularly’, ‘usually’
- g. rendszer-es-en h. idő-nként
 system-adj-n_{Adv} time-distributive
 ‘regularly’, ‘usually’ ‘occasionally’
- i. időnként de nem gyakran j. általá-ban
 occasionally but not often general-in
 ‘occasionally but not often’ ‘generally’
- (47) a. A nők legtöbb-ször Reaganra szavaztak
 the women-nom most-mult Reagan-sublative voted
 ‘Women mostly voted for Reagan’
- b. Rendszerint nem állnak meg egy kávéra a
 regularly not stop perfective one coffee-sublative the
 törvényen kívüliek miközben a rendőrök elől menekülnek
 law-superessive outside-pl while the policemen from escape
 ‘Usually when outlaws flee the police they don’t stop for coffee’
- c. János {gyakran / sűrűn} megy busszal
 János-nom often / frequently goes bus-instrumental
 iskolába
 school-illative
 ‘János often / frequently rides the bus to school’
- d. János {néha / ritkán} megy múzeumba vasárnap
 János-nom seldom / rarely goes museum-illative Sunday
 ‘János seldom / rarely visits museums on Sundays’

8.5 Morphosyntactically Complex Quantifiers

8.5.1 Complex D-Quantifiers

8.5.1.1 Cardinal Quantifiers

Morphologically complex cardinal quantifiers appear below.

- (48) a. több, mint kettő
more than two
'more than two'
- b. kettőnél több
two-adeptive more
'more than two'
- c. % kettőtől több
two-ablative more
'more than two' (dialectal)
- d. pontosan / csak / éppen tíz
exactly / only / just ten
'exactly / only / just ten'
- e. kevesebb, mint száz
less/ fewer than hundred
'less/ fewer than a hundred'
- f. száznál kevesebb
hundred-than fewer
'fewer than a hundred'
- g. % száz-tól kevesebb
hundred-ablative fewer
'fewer than a hundred' (dialectal)
- h. legalább / legfeljebb öt
at.least / at.most five
'at least / at most five'
- i. közel / majdnem két-száz
close / almost two-hundred
'nearly / almost two hundred'
- j. öt és tíz között
five and ten between
'between five and ten'
- k. ? éppen(hogy)
exactly
véges-számú
finite-numbered
'just finitely many'
- l. {végtelen / % végtelenül} sok
infinite / infinitely many
'infinitely many'
- m. alig néhány
hardly several
'hardly any'
- n. {(jó)néhány / (jó)pár} ház
(good) several / (good) pair house
'many houses'
- o. gyakorlatilag / majdnem semennyi
practically / almost NC.how.much
'practically / almost no'
- p. nagyjából / körülbelül hozzávetőlegesen tíz
around / approximately roughly ten
'about / approximately ten'
- (49) a. {(Több, mint) öt / Éppen öt / Nagyjából tíz} nő van az
more than five / exactly five / around ten woman-nom is the
órán
class-superessive
'(More than) five / Just five / About ten women are in the class'
- b. {Jó-néhány / alig néhány / majdnem minden} nyelvész
good-few / hardly few / almost every linguist-nom
zenész (is)
musician too
'Quite a few / Hardly any / Almost all linguists are musicians (too)'

- c. {Megszámlálhatatlanul sok / meglepően sok} kék törpe
 uncountably many / surprisingly many blue dwarf-nom
 létezik
 exists
 ‘There are uncountably many / surprisingly many blue dwarfs’

Separation of *Mint*-Phrase in Comparatives

In comparatives, the *mint*-phrase can be separated from the comparative adjective or quantifier (50). Separation, with the *mint*-phrase in clause-final position, is obligatory when the *mint*-phrase itself is clausal (51).

- (50) a. Kevesebb, mint öt fiú volt ott
 fewer than five boy-nom was there
 ‘Fewer than five boys were there’
 b. Kevesebb fiú volt ott, mint öt
 fewer boy-nom was there than five
 ‘There were fewer boys than five’
- (51) a. * Kevesebb fiú, mint lányt láttam, volt ott
 fewer boy than girl-acc saw-I was there
 ‘There were less boys there than I saw girls’
 b. Kevesebb fiú volt ott, mint amennyi lányt láttam
 fewer boy was there than as-many girl-acc saw-I
 ‘There were fewer boys there than I saw girls’

Comparatives, as shown above, may contain the comparative *mint* ‘than’. The comparative construction can also contain a locative case marker:

- (52) a. Péter-nél (tíz centiméterrel) magasabb
 Péter-adessive ten centimeter-instrumental taller
 ‘Ten centimeters taller than Peter’
 b. % Péter-től (tíz centiméterrel) magasabb
 Péter-ablative ten centimeter-instrumental taller
 ‘Ten centimeters taller than Peter’

Slavic languages, including Russian, also use both a clausal form (53a) and a morphologically complex form in comparatives, as shown by the genitive morphology on the numeral in (53b).

- (53) a. bol’she / men’she chem pjat’ mal’chikov
 more / fewer than five boys-genitive
 ‘More / fewer than five boys’

- b. bol'she / men'she pjati mal'chikov
 more / fewer five-genitive boys-genitive
 'More / fewer than five boys'

N-Phrases

(54) N-phrases

- a. sehány ház b. egy ház sem
 NC.how.many house one house nor
 'no house' 'no house'
- c. gyakorlatilag {senki / semmi} d. majdnem {senki / semmi}
 practically NC.who / NC.what almost NC.who / NC.what
 'practically no one / nothing' 'almost no one / nothing'
- e. se-melyik / se-hány / se-mennyi ház
 NC.which / NC.how.many / NC.how.many house
 'Neither house / no house'

Not ... Every

The negative *nem minden* 'not every' is a complex quantifier, forming a single constituent. This extends to other quantifiers, including *mindegyik* 'each' and *az összes* 'all'. The contrast with *minden* is shown by their different distribution.

Within the preverbal field, the positive universal quantifiers are excluded from the immediately preverbal position. Negated universals precede the verb and appear with a postverbal particle, forcing the adoption of the structure in (57).

- (55) a. {* minden fiú / nem minden fiú} jött el_{particle}
 every boy-nom / not every boy-nom came away
 'Every boy / not every boy came'
- b. {* mindegyik fú / nem mindegyik fiú} jött el_{particle}
 each boy-nom / not each boy-nom came away
 'Each boy / not each boy came'
- c. {* az összes fiú / nem az összes fú} jött el_{particle}
 the all boy-nom / not the all boy-nom came away
 'All the boys / not all the boys came'
- (56) {minden / mindegyik / az összes} fiú el_{particle} jött
 every / each / the all boy-nom away came
 'Every boy / each boy / all the boys came'
- (57) [[nem minden] fiú] 'not every boy'

8.5.1.2 Value Judgment Cardinals

Value judgment cardinals are illustrated below. Some nominal expressions – including *kevés NP* ‘few NP’ – are restricted to the immediately preverbal position that is occupied either by a focused phrase or a counting quantifier (this corresponds to region 3 in terms of section 1). Other phrases may be focused, but they can also appear in regions 1 and 2, which precede foci. If the particle follows the verb, the preverbal constituent is focused.

- (58) a. Túl sok diák jött *el_{particle}* az előadásra
 too many student-nom came away the lecture-sublative
 ‘Too many students came to the lecture’
- b. Nem jött *el_{particle}* elég diák az előadásra
 not came away enough student-nom the lecture-sublative
 ‘Not enough students came to the lecture’
- (59) a. {Meglepően sok / *meglepően kevés} adminisztrátor *el_{particle}*
 surprisingly many / surprisingly few administrator-nom away
 jött a buliba
 came the party-illative
 ‘Surprisingly many / surprisingly few administrators came to the party’
- b. {Meglepően sok / meglepően kevés} adminisztrátor jött
 surprisingly many / surprisingly few administrator-nom came
el_{particle} a buliba
 away the party-illative
 ‘Surprisingly many / surprisingly few administrators came to the party’

The value judgment modifier *túl* ‘too’ can affect the position of the nominal; it forces the nominal to appear in an immediately preverbal (focus) position (60c):

- (60) a. [(Meglepően) sok diák] {*el_{part}* olvasta / olvasta *el_{part}*} a verset
 surprisingly many student-nom away read / read away the
 poem-acc
 ‘(Surprisingly) many students read the poem’
- b. [Nem sok diák] {**el_{part}* olvasta / olvasta *el_{part}*} a verset
 not many student-nom away read / read away the poem-acc
 ‘Not many students read the poem’
- c. [Túl sok diák] {**el_{part}* olvasta / olvasta *el_{part}*} a verset
 too many student-nom away read / read away the poem-acc
 ‘Too many students read the poem-acc’

8.5.1.3 Exceptive Modifiers

In Hungarian, exceptive expressions may contain the exclusive particle *csak* ‘only’, or they may contain *X-t kivéve* ‘excepting X, lit. taking out X’, *X kivételével* ‘with the exception of X’, *X-en kívül* ‘besides X, lit. outside of X’, or *X-től eltekintve* ‘disregarding X, apart from X’. Members of the latter set behave alike, so we only give examples with ‘excepting X’. *Csak*-exceptives must be licensed by negation (they are strong NPIs) (61a-ii, 61b-ii), while this is not a requirement for *kivéve*-exceptives. None of these expressions seems to have the exact same distribution as *but*-exceptives in English.

- (61) a. i. Jánost kivéve minden diák korán érkezett az
 János-acc excepting every student-nom early arrived the
 órára
 class-sublative
 ‘Every student except János came to class early’
- ii. *Minden diák korán érkezett az órára, csak
 every student-nom early arrived the class-sublative only
 János
 János-nom
 ‘Every student but János came to class early’
- b. i. Jánost kivéve egy diák sem ment el_{particle} későn a
 János-acc excepting one student nor went away late the
 buliból
 party-relative
 ‘No student except János left the party late’
- ii. Nem ment el_{particle} későn a buliból egy diák sem, csak
 not went away late the party-relative one student nor only
 János
 János-nom
 ‘No student but János left the party late’

Additional examples with *kivéve*-exceptives appear below.

- (62) a. Kettőt kivéve minden diák át_{particle} ment a
 two-acc excepting every student-nom through went the
 vizsgán
 exam-suppressive
 ‘Every student except two passed the exam’
- b. {Majdnem / közel} minden diák alá_{particle} írta a
 almost / close every student-nom under wrote the
 kérvényt
 petition-acc
 ‘Almost / nearly every student signed the petition’

- c. A legolcsóbb modelleket kivéve a legtöbb mosogatógépnek van
the cheapest models-acc excepting the most dishwasher-dat is
kis víz-fogyasztású beállítása
small water-consumption-adj setting-possessive

‘Most dishwashers except very low-end models have a water-saving feature’

Kivéve-Exceptives

Exceptive phrases with *kivéve* ‘excepting’ and its variants do not need to surface as a single constituent:

- (63) a. Pétert kivéve tegnap mindenkivel találkoztam
Péter-acc excepting yesterday everyone-instrumental met-I
‘I met everyone yesterday, except for Peter’
b. Mindenkivel találkoztam tegnap, Pétert kivéve
everyone-instrumental met-I yesterday Péter-acc excepting
‘I met everyone yesterday, except for Peter’

Plural *kivéve*-exceptives can appear with a variety of quantifier expressions; singular ones (‘except for Péter’) are unacceptable or marginal with non-universals:

- (64) (A) hatodikosokat kivéve {mindenkivel / sok diákkal /
the sixth graders-acc excepting everyone-instr / many students-instr /
kevés diákkal / a legtöbb diákkal} találkoztam
few students-instr / the most students-instr met-I
‘I met with everyone / many students / few students / most students,
except for the sixth graders’
- (65) Pétert kivéve {mindenkivel / *sok diákkal / *kevés
Péter-acc except everyone-instr / many students-instr / few
diákkal / *a legtöbb diákkal} találkoztam
students-instr / the most students-instr met-I
‘I met with everyone / many students / few students / most students,
except for Peter’

Csak-Exceptives

Csak-exceptives are licensed by negation. They may be accompanied by a negative concord item (with which they do not form a constituent) or stand on their own:

- d. i. (*kis) kisebbség
small minority
'a (small) minority of'
- ii. {törpe / elenyésző} kisebbség
dwarf / infinitesimal minority
'very small minority' (intended)
- e. több, mint húsz százalék f. kevesebb, mint egy negyed
more than twenty percent less than one quarter
'more than twenty percent of' 'less than one quarter of'
- g. húsz és harminc százalék h. egy tizedét kivéve mind
twenty and thirty percent one tenth-acc except all
között 'all but a tenth of'
between
'between twenty and thirty percent
of'
- i. (csak) egy kis százalék j. fél
only one small percentage half
'(just) a small percentage of' 'half (of)'
- k. mind
all
'all'
- l. mekkora {százalék / töredék / hányad}
how big percentage / fraction / fraction
'what percentage / fraction of?'
- m. {több / kevesebb}, mint pontosan fél
more / less than exactly half
'more / less than exactly half (of)'

The proportional quantifiers listed in the **D+of+N** group have the distribution of possessed nouns. The restrictor, which has the same form and distribution as a possessor, appears either without overt case marking or as a dative constituent. The parallels between possessors and the proportional quantifiers are illustrated below.

(69) Possessive structure

- a. a diákok ösztöndíj-a
the student stipend-possessive
'the stipend of the students'
- b. a diákok-nak az ösztöndíj-a
the students-dat the stipend-possessive
'the stipend of the students'

(70) Proportional quantifiers

- a. a diákok {nyolcvan százalék}-a
the students eighty percent-possessive
'eighty percent of the students'
- b. a diákok-nak {nyolcvan százalék}-a
the students-dat eighty percent-possessive
'eighty percent of the students'

If the restrictor is not overtly specified, then the possessive suffix may be absent. Alternatively, the proportional quantifier may have a possessive suffix which is fused with an agreement morpheme (e.g. (71b-ii)). The structure proposed is given in (71a).

- (71) a. i. [restrictor] [proportional Q-possessive suffix]
(possessive suffix, no agreement)
- ii. [proportional Q]
(no overt restrictor, no possessive suffix)
- iii. [*pro_{restrictor}*] [proportional Q-possessive suffix+agreement]
(no overt restrictor, possessive suffix and agreement)
- b. i. Az amerikai tinédzserek hatvan százaléka túlsúlyos
the American teenagers sixty percent-possessive overweight
'Sixty percent of American teenagers are overweight'
- ii. {Hatvan százalék / hatvan százalékuk} túlsúlyos
sixty percent / sixty percent-possessive,3pl overweight
'Sixty percent of them are overweight'
- c. i. Az amerikaiak kevesebb mint egyharmada kétnyelvű
the Americans less than one third-possessive bilingual
'Less than a third of Americans are bilingual'
- ii. Kevesebb, mint egyharmad / kevesebb, mint
less than one third / less than
egyharmaduk kétnyelvű
one third-possessive,3pl bilingual
'Less than a third of them are bilingual'

8.5.1.5 Boolean Compounds

- (72) a. or
Két vagy három diák jött a buliba
two or three student-nom came the party-illative
'Two or three students came to the party'

- b. and
Két diák és három tanár jött a buliba
two student-nom and three teacher-nom came the party-illative
'Two students and three teachers came to the party'
- c. neither ... nor
Se két diák, se három tanár nem jött a
nor two student-nom nor three teacher-nom not came the
buliba
party-illative
'Neither two students, nor two teachers came to the party'
- (73) a. Nem minden költő álmodozik
not every poet-nom daydreams
'Not all poets daydream'
- b. Legalább kettő, de nem több, mint tíz diák kap
at.least two but not more than ten student-nom receives
ösztöndíjat jövőre
scholarship-acc next.year-sublative
'At least two but not more than ten students will get scholarships next year'
- c. A legtöbb diák liberális, de nem mind
the most student-nom liberal but not all
'Most but not all students are liberal'
- d. Vagy nagyon kevés vagy nagyon sok diák megy át_{particle}
either very few or very many student-nom goes across
a vizsgán
the exam-supressiveive
'Either very few or very many students will pass the exam'
- e. Se minden tanár, se minden diák nem jött el_{particle}
nor every teacher-nom nor every student-nom not came away
a buliba
the party-illative
'Neither every teacher nor every student came to the party'
- f. Tízből nem több, mint egy tanár tudja a választ
ten-elative not more than one teacher-nom knows the answer-acc
erre a kérdésre
that-sublative the question-sublative
'Not more than one teacher in ten knows the answer to that question'

8.5.1.6 Partitives: D+of+NP_{def.pl}

- (74) a. i. Azok közül a tolvajok közül {mindet / mindegyiket /
those from the thieves from every-acc / each-acc /
mindkettőt} el_{particle} kapták
every.two-acc away caught-3pl
‘All / each / both of those thieves were caught’
- ii. Azok közül a tolvajok közül csak kettőt kaptak el_{particle}
those from the thieves from only two-acc caught-3pl away
‘Only two of those thieves were caught’
- iii. Azok közül a tolvajok közül egyiket sem kapták el_{particle}
those from the thieves from one-acc nor caught-3pl away
‘Not one of those thieves was caught’⁶
- b. A raboknak nem több, mint harmada szökött meg_{particle}
the prisoners-dat not more than third-possessive escaped perfective
‘Not more than a third of the prisoners escaped’
- c. i. János nem látott {azokból a filmekből / azok
János-nom not saw those-relative the movies-relative / those
közül a filmek közül} egyet sem
from the movies from one-acc nor
‘János didn’t see any of those films’
- ii. ? János nem látta azoknak a filmeknek egyikét
János-nom not saw those-dat the movies-dat one-poss-acc
sem
nor
‘János didn’t see any of those films’

Partitives can be expressed as two constituents: a predicative quantifier suffixed with *-an_{Adv}*, *-en_{Adv}* and a postpositional phrase with *közül*.

- (75) A diákok közül csak ketten mentek át_{particle} a vizgán
the students from only two_{predicative} went through the exam-superessive
‘Just two of the students passed the exam’

In the preceding example, *ketten* ‘two’ forms a constituent distinct from *a diákok közül* ‘from the students’. Relational and wh-partitives can also appear as a possessive structure. In general, possessive structures may involve a dative or a case-less possessor; the possessor is obligatorily dative if the possessee is a wh-phrase.

⁶ The verbs differ in object agreement. Indefinite objects trigger the ‘indefinite’ agreement and universals as well as negated quantifiers trigger the ‘definite’ agreement.

- (76) a. A diákok közül mindenki b. A diákok mindegyike
 the students from everyone the students every-possessive
 ‘all of the students’ (*közül*) ‘all of the students’ (possessive)
- c. A diákoknak mindegyike
 the students-dat every-possessive
 ‘all of the students’ (possessive)

As the examples show, Hungarian has syntactically complex partitives. There is no morphologically simple determiner that would have a partitive interpretation.

8.5.2 Complex A-Quantifiers

The following examples include bounding phrases, shown in (77f,g).

8.5.2.1 Cardinal Quantifiers

- (77) a. Sean {pontosan kétszer / több, mint ötször} volt Dublinban
 S-nom exactly twice / more than five-mult was Dublin-inessive
 ‘Sean has been to Dublin {exactly twice / more than five times}’
- b. Sue {néhány hétvégén / a legtöbb
 S-nom some weekend-superessive / the most
 hétvégén / majdnem minden pénteken} busszal
 weekend-superessive / almost every Friday-superessive bus-instr
 megy dolgozni
 goes work-inf
 ‘Sue takes the bus to work on some / most weekends / almost every Friday’
- c. Ann {szinte soha nem / csak időnként} megy busszal
 Ann-nom almost never not / only occasionally goes bus-instr
 iskolába
 school-illative
 ‘Ann {almost never / only occasionally} takes the bus to school’
- d. Ann kétszer olyan gyakran megy busszal, mint te
 Ann-nom twice so often goes bus-instr than you
 ‘Ann takes the bus to school twice as often as you do’
- e. Ann kétszer annyit szív, mint te
 Ann-nom twice as much-acc smokes than you
 ‘Ann smokes twice as much as you do’⁷

⁷ The word *annyi* is glossed as either ‘as many’ or ‘as much’ because the Hungarian equivalent can appear with either count or mass nouns.

- f. Ed harminc éven át évi ötven hetet,
 E-nom thirty year-superessive across year-adj fifty week-acc
 hetente öt napot dolgozott
 week-dist five day-acc worked
 ‘Ed worked five days a week, 50 weeks a year for 30 years’
- g. János minden héten öt nap naponta kétszer
 János-nom every week-superessive five day day-dist two-mult
 húsz fekvőtámaszt csinál
 twenty push-up-acc does
 ‘János does twenty push-ups twice a day, five days a week’

8.5.2.2 Boolean Compounds

- (78) a. Az elnök-választásokon Ann {legtöbbször /
 the president-elections-superessive Ann-nom most-dist /
 ?általában}, de nem mindig egy demokratára szavazott
 usually but not always one Democrat-sublative voted
 ‘In presidential elections Ann has usually but not always voted for a
 Democrat’
- b. Ed legalább kétszer, de nem több, mint ötször futott neki
 Ed-nom at.least two-mult but not more than five-mult ran it-dat
 a vizsgának
 the exam-dat
 ‘Ed has taken the exam at least twice but not more than five times’
- c. Ann sokáig alszik hétvégén és
 Ann-nom much-until sleeps weekend-superessive and
 ünnepnapokon, kivéve húsvétkor
 holidays-superessive except Easter-at
 ‘Ann sleeps late on weekends and on holidays except for Easter’

II Selected Topics

8.6 Comparative Quantifiers

8.6.1 Comparative D-Quantifiers

- (79) a. Több diák vegán, mint tanár
 more student-nom vegan than teacher-nom
 ‘More students than teachers are vegans’

- b. A riporter kétszer annyi diákot interjúvolt meg_{part},
the reporter-nom twice as many student-acc interviewed perfective
mint tanárt
than teacher-acc
'The reporter interviewed twice as many students as teachers'
- c. Ugyanannyi diákkal beszéltünk, mint tanárral
same.as many student-inst spoke-we than teacher-inst
'We talked to the same number of students as teachers'
- d. Mennyivel több diák írta alá_{particle} a kérvényt
how.many-inst more student-nom wrote under the petition-acc
mint tanár?
than teacher-nom
'How many more students than teachers signed the petition?'
- e. i. Ugyanannyi diák és tanár biciklijét lopták
same.as many student and teacher bicycle-poss-acc stole-they
el_{particle}
away
'Just as many students as teachers' bicycles were stolen'
- ii. Pont annyi diák, mint tanár biciklijét
exactly as many student than teacher bicycle-possessive-acc
lopták el_{particle}
stole-they away
'Just as many students' as teachers' bicycles were stolen'
- iii. Pont annyi diák biciklijét lopták
exactly as many student bicycle-possessive-acc stole-they
el_{particle}, mint tanárét
away than teacher-possessive-acc
'Just as many students' as teachers' bicycles were stolen'
- f. Arányosan több diák, mint tanár írta alá_{particle} a
proportionally more student-nom than teacher-nom wrote under the
kérvényt
petition-acc
'Proportionally more students than teachers signed the petition'

Some expressions built from two place adnominal determiners are illustrated below.

- (80) a. i. Több X, mint Y ii. Y-nál több X
more X than Y Y-locative more X
'more X than Y' 'more X than Y'

- b. i. Kevesebb X, mint Y ii. Y-nál kevesebb X
 fewer X than Y Y-locative fewer X
 ‘Fewer X than Y’ ‘Fewer X than Y’
- c. (Pontosan) annyi X, mint Y d. Ötször annyi X, mint Y
 exactly as many X than Y five times as many X than Y
 ‘(Exactly) as many X as Y’ ‘Five times as many X as Y’

8.7 Type (2) Quantifiers

The Hungarian equivalents generally contain the quantifiers seen above. The equivalents of *different*, however, behave otherwise. The interpretation of the questions possibly differing across students can only be expressed as shown in (81c).

- (81) a. Különböző emberek különböző dolgokat szeretnek
 different persons-nom different things-acc like-3pl
 ‘Different people like different things’
- b. i. {Minden / mindegyik / az összes} diák ugyanazokat
 every / each / the all student-nom the same-acc
 a kérdéseket válaszolta meg_{particle} a vizsgán
 the questions-acc answered perfective the exam-superessive
 ‘All the students answered the same questions on the exam’
- ii. {Minden / mindegyik / az összes} diák {más /
 every / each / the all student-nom different /
 más-más kérdést} válaszolt meg_{particle} a
 different-different question-acc answered perfective the
 vizsgán
 exam-superessive
 ‘Each student answered a different question on the exam’
- c. i. A diákok {különböző / más-más} kérdéseket
 the students-nom different / different-different questions-acc
 választak meg_{particle}
 answered perfective
 ‘The students answered different questions’
 (*különböző*: at least two different questions; *más-más*: different
 questions for each student)
- ii. Különböző diákok {különböző kérdéseket /
 different students-nom different questions-acc /
 más-más kérdéseket} választak meg_{particle}
 different-different questions-acc answered perfective
 ‘Different students answered different questions.’ (all the
 questions were different)

- iii. *{Más diák / más-más diák}
 different student-nom / different-different student-nom
 {különböző kérdéseket / más kérdéseket /
 different questions-acc / different questions-acc /
 más-más kérdéseket} válaszolt meg_{particle}
 different-different questions-acc answered perfective
 ‘Different students answered different questions.’
- iv. Nem ugyanazokat a kérdéseket válaszolta meg_{particle}
 not same-plural-acc the questions-acc answered perfective
 minden diák
 every student-nom
 ‘Different students answered different questions’ (some
 questions were different)}
- d. Melyik diák melyik kérdést válaszolta meg_{particle}?
 which student-nom which question-acc answered perfective
 ‘Which student answered which questions?’ (pair list interpretation)
- e. i. János és Vili szomszédos falvakban laknak
 János-nom and Vili-nom neighboring villages-inessive live
 ‘János and Vili live in neighboring villages’
- ii. ?János és Vili egymással versengő pártokat
 János-nom and Vili-nom each.other-inst rival parties-acc
 támogatnak
 support
 ‘János and Vili support rival political parties’
- f. János táncolt Mari-val, de senki más nem táncolt
 János-nom danced Mari-inst but nobody different-nom not danced
 senki mással
 nobody different-inst
 ‘János danced with Mari but no one else danced with anybody else’
- g. i. Ann gyakran többször meg_{particle} nézi ugyanazt a
 Ann-nom often more-mult perfective watches same-acc the
 filmet
 movie-acc
 ‘Ann often sees the same movie more than once’
- ii. Ann soha nem nézi meg_{particle} többször ugyanazt
 Ann-nom never not watches perfective more-multi same-acc
 a filmet
 the movie-acc
 ‘Ann never sees the same movie more than once’

- h. A festményeket különböző szobákban, vagy ugyanazon szoba
 the paintings-acc different rooms-inessive or same room
 átellenes falaira kell akasztani
 opposite walls-possessive-sublative must hang-infinitive
 ‘The paintings should be hung in separate rooms or on opposite walls
 of the same room’
- i. Különböző esküdtek {különböző / más-más}
 different jurors-nom different / different-different
 következtetéseket vontak le_{particle} ugyanazokból az
 conclusions-acc concluded down same-pl-elative the
 érvekből
 arguments-elative
 ‘Different jurors drew different conclusions from the same arguments’
 (for each juror, a conclusion different from all other jurors)
- (82) A férfiak általában magasabbak, mint a nők
 the men-nom average-in taller-pl than the women-nom
 ‘Men are usually taller than women’

The interpretation of examples which contain the distributive *különböző* ‘different’ or the reduplicated *más-más* (different-different) ‘different’ (cf. (81i)) differs according to the quantificational properties of other expressions in the clause. The two relevant interpretations below are (a) each juror reached conclusions that are different from those of all other jurors, or (b) the jurors reached at least two distinct conclusions among themselves. (a) is a one-to-one correspondence, (b) merely implicates multiplicity. See examples in Section 8.17. Note, in addition, that not only definite plurals but also distributive universals can serve as sorting keys (see Section 8.8 below for the significance of this fact).

8.8 Distributive Numerals and Binominal ‘Each’

- (83) a. Az asszisztensek {mind / mindegyike} hatvan vizsgát osztályozott
 the assistants-nom all / each sixty exam-acc graded
 le_{particle}
 down
 ‘The assistants graded sixty exams each / apiece’
- b. Az asszisztensek összesen hatvan vizsgát osztályoztak le_{particle}
 the assistants-nom in.total sixty exam-acc graded down
 ‘The assistants graded sixty exams between them’

Numerals that have a distributive interpretation in Hungarian are either reduplicated numerals or distributive quantifiers (the latter are numerals with

an instrumental *-val, -vel* suffix). Both types are illustrated below, and a more detailed discussion of both types follows. The discussion builds heavily on Balusu (2006) and Szabolcsi (2010); both works address reduplicated numerals.

(84) Reduplicated quantifiers

- a. A katonák két-két lándzsát vittek
 the soldiers-nom two-two spear-acc carried
 ‘The soldiers carried two spears each’ (two spears carried by each soldier)
- b. Két férfi három-három bőröndöt vitt
 two man-nom three-three suitcase-acc carried
 ‘Two men carried three suitcases each’

(85) Numerals with an instrumental suffix

- a. A katonák kettesével vitték a lándzsákat
 the soldiers-nom two-inst carried the spears-acc
 ‘The soldiers carried the spears two by two’ (two spears carried by each soldier, or each spear is carried by two soldiers)
- b. A diákok kettesével sorakoztak fel_{particle}
 the students-nom two-inst lined up
 ‘The students lined up two by two’

8.8.1 Reduplicated Numerals

Reduplicated numerals are formed by reduplicating the numeral; these distributive elements are nominal. The numeral may form a constituent with the NP that is interpreted as the sorting key (86a, 86b), or it may appear as a discontinuous element (86c, 86d). The sorting key of the distributive expression is unambiguous; it is either the NP that the numeral forms a constituent with, or the NP that the discontinuous quantifier is associated with.

- (86) a. A férfiak [három-három bőröndöt] vittek
 the men-nom three-three suitcase-acc carried
 ‘The men carried three suitcases each’ / *‘Three men carried each suitcase’
- b. [Három-három férfi] vitte a bőröndöket
 three-three man-nom bought the suitcases-acc
 ‘Three men carried each suitcase’ / *‘The men carried three suitcases each’

- c. A férfiak a bőröndöket az utcán
 the men-nom the suitcases-acc the street-superessive
 {hárm-an}-{hárm-an} vitték
 three-an_{Adv}-three-an_{Adv} carried
 ‘Three men carried each suitcase’ / *‘The men carried three suitcases each’
- d. A férfiak bőröndöt az utcán hármat-hármat
 the men-nom suitcase-acc the street-superessive three-acc-three-acc
 vittek
 carried
 ‘The men carried three suitcases each’ / *‘Three men carried each suitcase’

Reduplicated distributives only have a participant-key reading. In this respect, Hungarian reduplicated distributives differ from those in Telugu (87), where a temporal and a spatial key readings are also available (Balusu 2006, Szabolcsi 2010):

- (87) prati pilla-vaaDu renDu renDu kootu-lu-ni cuus-ee-Du
 every kid two two monkey.pl.acc see.past.3sg
 ‘Every kid saw two monkeys’ (Balusu 2006:(11)–(12))
- Every child each saw two monkeys (participant key reading)
 - Every child saw two monkeys in each time interval (temporal key reading)
 - Every child saw two monkeys in each location (spatial key reading)
- (88) Minden gyerek két-két majmot látott
 every child-nom two-two monkey-acc saw
 ‘Every child each saw two monkeys’
- Every child each saw two monkeys (participant key reading)
 - *Every child saw two monkeys in each time interval (temporal key reading)
 - *Every child saw two monkeys in each location (spatial key reading)

Balusu (2006) argues that in Telugu, participant-key readings are a specific instantiation of event-key readings – a claim that Szabolcsi (2010) generalizes to other languages, including the English binominal *each* construction. The conclusion is enforced by the availability of ‘participant’ key readings with universal quantifiers.

In (87), Balusu notes, the sorting key appears to be a distributive universal expression. From the temporal and spatial key readings, it is apparent that

some additional distributive mechanism is necessary to yield the appropriate readings. This creates a problem for the analysis of examples where the sorting key appears to be a distributive universal, e.g. *every child*, since the universal quantifier independently associates with its own distributive operator. The additional distributive operator, required by the reduplicated numeral, yields a redundancy.

In response to this problem, Balusu (2006) suggests that participant key readings are event key readings. Apparent participant-key readings arise when there is a one-to-one correspondence between individuals and events. This is possible when all the relevant monkey-sightings by a child are collected into one sum-event. Balusu's account extends to Hungarian as well, since a distributive universal serves as the (apparent) sorting key in (88).

Balusu (2006) notes that the plurality requirement blocks the participant key reading if the Telugu reduplicated numeral appears with a singular DP. Only the temporal and spatial key readings are available:

- (89) Raamu renDu renDu kootu-lu-ni cuus-ee-Du
 Ram two two monkey.pl.acc see.past.3sg
 'Ram saw two two monkeys' (Balusu 2006:(9))
- *Ram saw two monkeys (participant key reading)
 - Ram saw two monkeys in each time interval (temporal key reading)
 - Ram saw two monkeys in each location (spatial key reading)

For Hungarian reduplicated nominals, it was shown that only a participant key reading is available (in present terms, these numerals require that individuals and events be in a one-to-one relation). It is expected then that with singular DPs, these distributive examples will be ungrammatical:

- (90) * Ram két-két majmot látott
 R-nom two-two monkey-acc saw
 *'Ram saw two monkeys each'
- *Ram saw two monkeys (participant key reading; blocked by plurality condition)
 - *Ram saw two monkeys in each time interval (temporal key reading; not available)
 - *Ram saw two monkeys in each location (spatial key reading; not available)

The following examples are excluded in a similar fashion.

- (91) a. * Két-két fiú jött
 two-two boy-nom came
 'The boys came in twos'

- b. * A diák két-két könyvet olvasott
 the student-nom two-two book-acc read
 ‘The student read the books in twos’

8.8.2 Numerals with Instrumental Case Marking

The instrumental-marked numerals function as an adverb. Unlike reduplicated numerals, the sorting key can be ambiguous. In the following example, it may be either the subject or the object.

- (92) A férfiak a bőröndöket az utcán hárm-asá-val
 the men-nom the suitcases-acc the street-superessive three-adj-inst
 vitték
 carried_{3pl}
 ‘Three men carried each suitcase’ / ‘The men carried three suitcases each’⁸

The participant key NP of the instrumental distributive element must be non-quantified. In contrast with (92), each of the following pair is unambiguous in terms of the participant key⁹:

- (93) a. {Minden / a legtöbb} katona kettesével vitte a lándzsákat
 every / the most soldier-nom two-inst carried the spears-acc
 ‘Each soldier / Most soldiers carried the spears in twos’ / *‘Each
 spear was carried by the soldiers in twos’
- b. {Minden / a legtöbb} lándzsát kettesével vittek a katonák
 every / the most spear-acc two-inst carried the soldiers-nom
 ‘Each spear / most spears were carried by the soldiers in twos’ /
 *‘Each soldier carried the spears in twos’

The instrumental distributive element has all three readings which are permitted by Telugu reduplicated numerals. In the following examples, participle, temporal and spatial key readings are all equally available:

- (94) Minden idomár kettesével szállította a majmokat
 every trainer-nom two-inst transported the monkeys-acc
 ‘Every trainer transported the monkeys in twos’
- a. Every trainer each transported two monkeys (participant key
 reading)

⁸ The suffix *-as* in *hárm-as* yields an adjective from the numeral.

⁹ Both examples are multiply ambiguous, as they permit a participant, temporal and spatial key reading as well; see the discussion immediately below.

- b. Every trainer transported two monkeys in each time interval (e.g. two monkeys transported on every single journey by every trainer; temporal key reading)
- c. Every trainer transported two monkeys in each location (e.g. two monkeys in each crate; spatial key reading)

Given that temporal and spatial key readings are available for instrumental distributives, it is predicted that they are not subject to the plurality condition. This expectation is borne out (compare (91)); both temporal and spatial key readings are available below.

- (95) a. Ram kettesével szállította a majmokat
R-nom two-inst transported the monkeys-acc
'Ram transported the monkeys in twos'
- b. A diák kettesével szedte a lépcsőfokokat
the student-nom two-inst took the steps-acc
'The student took two steps at a time'
- c. Kettesével jöttek a fiúk
two-inst came the boys-nom
'The boys came in twos'
- d. A diák kettesével olvasta a könyveket
the student-nom two-inst read the books-acc
'The student read the books in twos'

8.9 Mass Quantifiers and Noun Classifiers

Hungarian has a number of classifiers briefly discussed below (cf. Csirmaz and Dékány (in press), Beckwith 1992). Some quantifiers combine with count nouns only, and others with both count and mass nouns. There are no quantifiers that would combine with mass nouns exclusively.

- (96) Count, but not mass nouns
- a. két 'two', tíz 'ten'
 - b. hány 'how many', *vala-hány* (some-how.many) 'some', *se-hány* (NC. how.many) 'none'
 - c. *mind-egyik* (every-one) 'every', *néhány* 'several' (small amount)¹⁰

¹⁰ *Néhány* 'several' is morphologically complex. It contains the suffix *hány*, which means 'how many/much' is isolation (cf. *vala-hány* 'some'). The prefix *né-* has an existential interpretation; it is also found in *né-ha* (né-if) 'sometimes, infrequently' and *né-hol* (né-where) 'someplace'.

- (97) Both mass and count nouns
- a. mennyi ‘how much/many’, vala-mennyi (some-how.much/many) ‘some’, se-mennyi (nc.how.much/many) ‘none’
 - b. minden ‘every’
 - c. az összes ‘all the’
 - d. sok ‘much/many’, rengeteg ‘much/many’, (egy) kevés ‘(a) little/few’
 - e. (nem) elég ‘(not) enough’
 - f. temérdek ‘a lot’, temérdeknyi ‘a lot’, töménytelen ‘a lot’
 - g. marok-nyi (fist-nyi) ‘fistful’¹¹

8.9.1 Numeral Classifiers

Selected Sortal Classifiers

This subsection gives a bird’s eye view of classifiers in Hungarian, and notes their relevance for the interpretation of bare nouns. It is suggested that Hungarian nouns are specified as mass nouns in the lexicon (with the exception of nouns referring to humans; cf. Farkas and de Swart 2003), and that they may appear with a variety of overt or covert classifiers.

Numeral classifiers are widely attested in Hungarian, but they are optional (98). The productive sortal classifier is *darab* ‘piece’ for inanimate nouns, which can appear with any (inanimate) count noun. Other classifiers also exist; a non-exhaustive list is given below.

- | | |
|--|--|
| (98) a. két (cső) kukorica
two tube corn
‘two ears of corn’ | b. két (darab) szappan
two piece soap
‘two bars of soap’ |
| c. két (darab) / (csík) rágó
two piece / stick gum
‘two sticks of gum’ | d. pár papír(-lap)
several paper sheet
‘several sheets of paper’ |
| e. egy (vegni) kenyér
one loaf bread
‘one loaf of bread’ | f. tíz (szem) cukorka
ten piece candy
‘ten pieces of candy’ |
- (99) tincs ‘strand (of hair)’; fürt ‘bunch (of grapes)’; szál ‘strand (for flower, yarn)’; tábla ‘board (chocolate)’; tö ‘root (of rooted plants)’

Darab ‘Piece’

The general, productive sortal classifier *darab* has a homonym, the measure expression *darab*. The latter has a partitive interpretation, corresponding to ‘a piece (of)’. Stress placement distinguishes the two homonyms. The sortal *darab*

¹¹ See Section 8.9.3 on more details concerning the suffix *-nyi*.

is unstressed; it is the numeral and the head noun that bear some degree of stress. The measure *darab*, in contrast, is stressed and the numeral in these constructions bears no stress. The measure phrase *darab* is marked with those count nouns that can only refer to maximal individuals, such as *szék* ‘chair’ below.¹²

- (100) a. torta
cake
‘an entire cake / a piece of cake’
- b. egy torta
one cake
‘one (entire) cake’
- c. ‘egy darab ‘torta
one piece cake
‘one (entire) cake’
- d. egy ‘darab ‘torta
one piece cake
‘one piece of cake’
- (101) a. szék
chair
‘a chair / *a piece of a chair’
- b. hat szék
six chair
‘six chairs’
- c. ‘hat darab ‘szék
six piece chair
‘six chairs’
- d. { * hat ‘darab ‘szék / OK hat ‘szék-darab }
six piece chair / six chair-piece
‘six pieces of chairs’ / ‘six pieces of a chair’

The classifier *darab* ‘piece’ cannot appear with mass nouns; they require *adag* ‘portion’ instead.¹³

- (102) a. * két darab {bor / arany / homok / sár}
two piece wine / gold / sand / mud
‘two pieces of wine / gold / sand / mud’
- b. két adag {bor / arany / homok / sár}
two portion wine / gold / sand / mud
‘two portions of wine / gold / sand / mud’

¹² *Torta* ‘cake’ is a count rather than a mass noun; it can appear with plural marking (*torták* ‘cakes’), and the resulting interpretation is that of multiple cakes rather than multiple types (or individual portions) of cakes.

¹³ If the classifiers *darab* ‘piece’ vs. *adag* ‘portion’ are taken to identify count and mass nouns, respectively, then some nouns are ambiguous. *Csokoládé* ‘chocolate’ and *torta* ‘cake’ can appear with both classifiers. Ignoring coerced interpretations, *bor* ‘wine’ and *lekvár* ‘jam’ are only acceptable with *adag* ‘portion’, while *könyv* ‘book’ or *vers* ‘poem’ only permits the classifier *darab* ‘piece’. The former are thus mass nouns, while the latter are count.

A mass noun with a numeral has either a ‘portion’ or a ‘type’ interpretation, as in (103a), if such conventionalized interpretations are available. An adjective modifying the mass noun can disambiguate the two coerced readings. With individual-level adjectives, only the type interpretation is available (103b) and with stage-level adjectives, only the portion interpretation is possible (103c). If an adjective is ambiguous between these two readings, as in (103d), the two adjective interpretations correspond to the appropriate coerced reading. Only the type or portion interpretation is indicated in the translation.

- (103) a. két bor
two wine
‘two portions / types of wine’
- b. két jó bor
two good wine
two types / *two portions
- c. két hideg bor
two cold wine
‘two portions’ / *‘two types’
- d. két penészes sajt
two moldy cheese
(a) ‘two types of moldy cheese (which are meant to have mold, e.g. Brie and Roquefort)’ (individual-level) / (b) ‘two portions of cheese that have mold (went bad)’ (stage-level)

Another Sortal Classifier

In the preceding examples, classifiers were shown to be optional. With collective terms which refer to groups of humans, the classifier cannot be deleted (104a). In fact, some collective terms cannot appear with a numeral even if a classifier is present (104b).

- (104) a. húsz *(fő) {személyzet / legénység}
twenty head staff / crew
‘twenty members of staff / crew’
- b. * húsz (fő) {őrség / diákság}
twenty head guard / student body
‘twenty members of (an) guard / (a) student body’

8.9.2 Collective Classifiers

Collective classifiers do not necessarily require an overt noun to be present; an optional, illustrative noun is given below. There appear to be four classes of collective classifiers; they differ in (a) whether they permit an overt noun, and (b) if an overt noun is possible, what structure the noun may appear in.

(105) Overt noun possible 1 (classifier N or N classifier)

- | | |
|---|---|
| a. egy csapat (focista)
one team soccer.player
'a team of soccer players' | b. egy focista-csapat
one soccer.player-team
'a team of soccer players' |
|---|---|

(106) Overt noun possible 2 (N classifier)

- | | |
|--|---|
| a. egy (méh)-raj
one bee-swarm
'a swarm (of bees)' | b. egy szakasz (katona)
one platoon soldier
'a platoon (of soldiers)' |
|--|---|

(107) No overt noun

- | | |
|--|---|
| a. egy horda *(ember)
one horde man
'a horde (of men)' | b. egy gulya *(tehén)
one herd cow
'a herd (of cattle)' |
|--|---|

Some collective classifiers may appear with an overt noun only the noun describes a specific kind – in the following example, the overt noun must refer to a specific breed of horses (e.g. Lipizzaner).

- | | |
|---|--|
| (108) a. egy ménés {*(ló) / *(lipicai)}
one herd horse / Lipizzaner
'a herd of horses/ Lipizzaner horses' | b. * egy ló ménés
one horse herd
'a herd of horses' (intended) |
| c. egy lipicai ménés
one Lipizzaner herd
'a herd of Lipizzaner horses' | |

8.9.3 Container Expressions and Measure Phrases

Container expressions precede the noun and any adjectives that modify the noun. Note that no overt partitive is present.

- | | |
|---|---|
| (109) a. két üveg bor
two bottle wine
'two bottles of wine' | b. egy doboz tej
one carton milk
'one carton of milk' |
| c. sok doboz cukorka
many box candy
'many boxes of candy' | d. sok üveg finom francia bor
many bottle tasty French wine
'many bottles of tasty French wine' |

A container expression that is suffixed with *-nyi* measures quantity, which corresponds to the quantity measured by the container:

- (110) a. két üveg-nyi bor b. sok doboz-nyi cukorka
 two bottle-nyi wine many box-nyi candy
 ‘two bottles’ quantity / worth of ‘many boxes’ worth of candy’
 wine’

Measure phrases also precede nouns and any adjectives. They either appear as bare measure phrases or bear the suffix *-nyi*:

- (111) a. egy kiló só b. egy kilónyi só
 one kilogram salt one kilogram-nyi salt
 ‘a kilogram of salt’ ‘a kilogram of salt’

8.10 Existential Constructions

Existential constructions are verb-initial. If both the pivot and the coda follow the verb, then the familiar weak – strong distinction can be observed; only weak DPs can appear as pivots ((112), but cf. (114)). If the coda precedes the verb, then the interpretation is locative rather than existential, so both weak and strong DPs are grammatical (113). The existence predicate *van* ‘is’ also reveals the contrast; the existence predicate is optional in locative sentences, but obligatory in existential ones.

- (112) a. *(Van) {egy / két / néhány / sok} könyv (a polcon)
 is one / two / several / many book-nom the shelf-supressiveive
 ‘There is one book / There are two books / There are several books /
 There are many books (on the shelf)’
 b. * Van {minden / a legtöbb} könyv (a polcon)
 is every / the most book-nom the shelf-supressiveive
 *‘There is every book / There are most books (on the shelf)’
- (113) a. {Egy / két / néhány / sok} könyv a polcon (van)
 one / two / several / many book-nom the shelf-supressiveive is
 ‘One book / Two books / Several books / many books are on the
 shelf’
 b. i. {Minden / A legtöbb} könyv a polcon (van)
 every / the most book-nom the shelf-supressiveive is
 ‘Every book is on the shelf’ / ‘Most books are on the shelf’
 ii. * {Minden / A legtöbb} könyv van a polcon
 every / the most book-nom is the shelf-supressiveive
 ‘Every book is on the shelf’ / ‘Most books are on the shelf’

8.10.1 *Definiteness Effect*

As noted above, only weak DPs can appear as pivots in existential sentences. Strong quantifiers may be acceptable, though, if they quantify over kinds rather than individuals:

- (114) Van minden könyv a polcon
 is every book-nom the shelf-superessive
 ‘There is every kind of book on the shelf’

8.10.2 *Negation*

The examples in (115) are negative existentials which contain the negated existence predicate *nincs* ‘isn’t’ or *nincsenek* ‘aren’t’. These examples illustrate the possibility of NP-ellipsis and predicative quantifiers as well. Optional ellipsis is indicated by parentheses and predicative quantifiers are suffixed with *-an_{Adv}*, *-en_{Adv}*.

- (115) a. Most nincs lengyel diák az órámön; de
 now isn’t_{sg} Polish student-nom the class-my-superessive but
 tavaly {sok (lengyel diák) volt / sok-an voltak}
 last year many Polish student-nom was_{sg} / many-*an_{Adv}* were_{pl}
 ‘There are no Polish students in my class now, but last year there were many Polish students / they were many’
- b. Most nincs sok lengyel diák az órámön, de
 now isn’t_{sg} many Polish student-nom the class-my-superessive but
 tavaly {sok (lengyel diák) volt / sok-an voltak}
 last year many Polish student-nom was_{sg} / many-*an_{Adv}* were_{pl}
 ‘There are not many Polish students in my class now, but last year they were many’
- c. Nincsenek lengyel diákok az órámön
 aren’t_{pl} Polish students-nom the class-my-superessive
 ‘There are no Polish students in my class’

In structures other than existence constructions, negation involves the preverbal negation *nem* (cf. (116a)). The negative predicate *nincs* appears, in addition to existential constructions, in locative structures (116b) and possessives (116c).

- (116) a. János nem talált egy könyvet
 János-nom not found one book-acc
 ‘János did not find a book’

- b. Sok könyv nincs a polcon
 many book-nom isn't the shelf-suppressive
 'Many books are not on the shelf'
- c. Jánosnak nincs két könyve
 János-dat isn't two book-possessive
 'János does not have two books'

8.10.3 Possession

Existential predicates express possession as well – both alienable and inalienable possession (cf. Szabolcsi 1994). The possessor appears with dative case marking. The possessee has a possessive suffix, $-(j)a$, $-(j)e$. The possessor and the possessee show person and number agreement, which suggests that the possessor and the possessee initially form a single constituent, with the possessor extracted.

- (117) a. {Néhány / Pár} fiatal lány van a házban
 several / pair young girl-nom is the house-inessive
 'There are some young girls in the house'
- b. Rabe ház-á-nak bádogtet-eje van
 R house-possessive-dat tin roof-possessive is
 'Rabe's house has a tin roof'
- (118) a. A diákok-nak van pénz-ük
 the students-dat is money-poss,3pl
 'The students have money'
- b. Nektek van pénzetek
 you,pl-dat have money-poss,2pl
 'You_{pl} have money'
- c. Sok diáknak van {pénze / *pénzük}
 many student-dat is money-poss / money-poss,3pl
 'Many students have money'

The verb shows number agreement with the possessee:

- (119) a. Jánosnak van lov-a
 János-dat is horse-poss
 'János has a horse'
- b. Jánosnak vannak lov-a-i
 János-dat are horse-poss-pl
 'János has horses'

8.11 Floating Quantifiers

The quantifiers that are separate from the NP they modify are predicative, and appear with the adverbial suffix $-an_{Adv}/-en_{Adv}$. With non-universal quantifiers and a definite nominal, the interpretation is partitive; (120c) and (120e) are

interpreted as *Many/Few of the students came to the party*, respectively. If the NP lacks a definite determiner, as in (120d), (120f), the quantifier specifies the cardinality of the set of students.

- (120) a. A diákok tegnap {mind / mind-annyi-an /
the students-nom yesterday every / every-as many-an_{Adv} /
mind-ahány-an} el_{particle} jötték a buliba
every-that.many-an_{Adv} away came the party-illative
‘The students all came to the party’
- b. A diákok {mind-kett-en / mind a kett-en /
the students-nom every-two-en_{Adv} / every the two-en_{Adv} /
*mind-ötvennyolc-an / mind az ötvennyolc-an} el_{particle} jötték a
every-fifty.eight-an_{Adv} / every the fifty.eight-an_{Adv} away came the
buliba
party-illative
‘The students both came to the party’ / ‘All fifty eight of the students
came to the party’
- c. A diákok tegnap sok-an el_{particle} jötték a
the students-nom yesterday many-an_{Adv} away came the
buliba
party-illative
‘Many of the students came to the party’
- d. Diákok tegnap sok-an jötték a buliba
students-nom yesterday many-an_{Adv} came the party-illative
‘Many students came to the party yesterday’
- e. A diákok tegnap keves-en jötték el_{particle} a buliba
the students-nom yesterday few-en_{Adv} came away the party-illative
‘Few of the students came to the party’
- f. Diákok tegnap keves-en jötték a buliba
students-nom yesterday few-en_{Adv} came the party-illative
‘Few students came to the party yesterday’

Numerals can also appear with the *-an_{Adv}/en_{Adv}* suffix:

- (121) a. (A) két diák el_{particle} jött tegnap a buliba
the two student-nom away came yesterday the party-illative
‘(The) two students came to the party yesterday’
- b. A diákok tegnap kett-en jötték el_{particle} a buliba
the students-nom yesterday two-en_{Adv} came away the party-illative
‘Two of the students came to the party yesterday’
- c. Diákok tegnap kett-en jötték a buliba
students-nom yesterday two-en_{Adv} came the party-illative
‘Two students came to the party’

- (122) a. (A) {három / ötvennyolc} fiú szaladt
 (the) three / fifty.eight boy-nom ran
 ‘(The) three / fifty eight boys were running’
- b. A fiúk {hárm-an / ötvennyolc-an} szaladtak
 the boys-nom three-an_{Adv} / fifty.eight-an_{Adv} ran-plural
 ‘Three / Fifty eight of the boys were running’
- c. Fiúk tegnap {hárm-an / ötvennyolc-an} szaladtak
 boys-nom yesterday three-an_{Adv} / fifty.eight-an_{Adv} ran-plural
 ‘Three / fifty eight boys were running yesterday’

Discontinuous quantifiers can modify various types of NPs. Quantifiers with the suffix *-an_{Adv}*/*-en_{Adv}* can only modify the subject (123a). In another type of discontinuous structure, the quantifier has the same case marking as the NP. In the latter type of discontinuous quantifier, the NP may contain neither a determiner nor plural marking. A discontinuous structure where the NP and the quantifier have the same case marking is not restricted to subjects (cf. (123b), (123c)).

- (123) a. i. A fiúk tegnap sok-an futottak
 the boys-nom yesterday many-an_{Adv} ran
 ‘Many of the boys ran yesterday’ (subject, adverb suffix)
- ii. Fiúk tegnap sok-an futottak
 boys-nom yesterday many-an_{Adv} ran
 ‘Many boys ran yesterday’ (subject, adverb suffix)
- iii. Fiú tegnap sok futott
 boy-nom yesterday many-nom ran
 ‘Many boys ran yesterday’ (subject, shared nominative case marker)
- b. i. *A fiúkat tegnap sok-an láttam
 the boys-acc yesterday many-an_{Adv} saw-I
 ‘Yesterday I saw many boys’ (direct object, adverb suffix)
- ii. Fiút tegnap sokat láttam
 boy-acc yesterday many-acc saw-I
 ‘Yesterday I saw many boys’ (direct object, shared accusative case marker)
- c. i. *A fiúknak tegnap sok-an adtam csokit
 the boys-dat yesterday many-an_{Adv} gave-I chocolate-acc
 ‘I gave chocolate to many boys yesterday’ (indirect object, adverb suffix)
- ii. Fiúnak tegnap soknak adtam csokit
 boy-dat yesterday many-dat gave-I chocolate-acc
 ‘I gave chocolate to many boys yesterday’ (indirect object, shared dative case marker)

The adverbial suffix *-an_{Adv}*/*-en_{Adv}* or the case marking on the quantifier disambiguates structures where the quantifier could be associated with different NPs:

- (124) a. Diákok könyvet sok-an vettek tegnap
 students-nom book-acc many-an_{Adv} bought yesterday
 ‘Many students bought books yesterday’ / *‘Students bought many books yesterday’
- b. Diák könyvet sok vett tegnap
 student-nom book-acc many-nom bought yesterday
 ‘Many students bought books yesterday’ / *‘Students bought many books yesterday’
- c. Diák(ok) könyvet sokat vett(ek) tegnap
 student(s)-nom book-acc many-acc bought(-pl) yesterday
 ‘Students bought many books yesterday’ / *‘Many students bought books yesterday’

Discontinuous quantifiers can also be associated with a possessor:

- (125) a. Három barátomnak olvastam a versét
 three friend-my-dat read-I the poem-poss-acc
 ‘I read a poem of three of my friends (each)’
- b. Barátomnak háromnak olvastam a versét
 friend-my-dat three-dat read-I the poem-poss-acc
 ‘I read a poem of three of my friends (each)’
- c. Barátomnak a versét háromnak olvastam
 friend-my-dat the poem-poss-acc three-dat read-I
 ‘I read a poem of three of my friends (each)’

8.12 Bare Quantifiers

8.12.1 Bare Quantifiers as Predicates

Predicative quantifiers usually appear with the adverbial suffix *-an*, *en*; cardinal numerals and value judgment quantifiers can equally appear in these structures (126a). Only value judgment quantifiers can appear as bare quantifiers; cardinals are excluded (126b).

- (126) a. A diákok akik át_{particle} mentek a vizsgán
 the students-nom who-pl across went the exam-superessive
 {kevesen / sokan / tízen} voltak
 few-en_{Adv} / many-an_{Adv} / ten-en_{Adv} were
 ‘The students who passed the exam were few / many / ten’

- b. {Sok / Kevés / *tíz} a hal a folyóban
 many / few / ten the fish-nom the river-inessive
 ‘The fish in the river are many / few / ten’

8.12.2 Bare Quantifiers as Arguments

- (127) a. A nyakkendők nagyon olcsók voltak; {hármát / egy párat / sokat / mindet / a legtöbbet / mindegyiket} meg_{particle} vettem
 the ties-nom so cheap-pl were three-acc / one pair-acc / many-acc / all-acc / the most-acc / each-acc perfective bought-I
 ‘The ties were so cheap I bought three / several / many / all / most / each’
- b. Ezek az autók eladó.
 these-nom the cars-nom for sale
 ‘Here are the cars I have available.’
- i. {A legtöbb / Mind / Mindegyik / Némelyik} jó állapotban
 the most / all / each / some good condition-in
 van
 is
 ‘Most / All / Each / Some are in good condition’
- ii. Csak néhány van jó állapotban
 only few is good condition-in
 ‘Only a few are in good condition’

8.13 Relations Between Lexical Universal, Existential and Interrogative Pronouns

Universal quantifiers, n-expressions, existential quantifiers and free choice indefinites contain a morpheme that corresponds to an interrogative. Some forms in the paradigm (for instance, with the universal *minden* ‘everything’) are exceptions to this generalization.

- (128) a. Interrogatives
 ki, hol, mi, mikor
 who, where, what, when
 ‘who, where, what, when’
- b. Universal quantifiers
 minden-ki, minden-hol, minden, mind-ig
 every-who, every-where, everything, every-until
 ‘everyone, everywhere, everything, always’

- c. Negative concord items
 sen-ki, se-hol, sem-mi, sem-mikor
 NC.who, NC.where, NC.what, NC.when
 ‘nobody, nowhere, nothing, never’
- d. Existential quantifiers
 vala-ki, vala-hol, vala-mi, vala-mikor
 some-who, some-where, some-what, some-when
 ‘someone, somewhere, something, sometime’
- e. Free choice indefinite *akár*
 akár-ki, akár-hol, akár-mi, akár-mikor
 even-who, even-where, even-what, even-when
 ‘anyone, anywhere, anything, anytime’¹⁴
- f. Free choice indefinite *bár*
 bár-ki, bár-hol, bár-mi, bár-mikor
 any-who, any-where, any-what, any-when
 ‘anyone, anywhere, anything, anytime’

8.14 Decreasing D-Quantifiers

A brief comment about negation in Hungarian. Hungarian is a strict negative concord language (resembling Russian and Modern Greek, in contrast with Romance). Negative concord items contain the morpheme *sen-* and a *wh*-word; they are glossed as NC throughout. As the following examples illustrate, negation is obligatory if the n-concord item is preverbal in Hungarian, but not in Italian.

- (129) a. Senki *(nem) dolgozott b. Nessuno (*no) ha lavorato
 NC.who-nom not worked no one not has worked
 ‘Nobody worked’ ‘Nobody worked’
- c. *(Nem) dolgozott senki d. *(No) ha lavorato nessuno
 not worked NC.who-nom not has worked no one
 ‘Nobody worked’ ‘Nobody worked’

¹⁴ Cf. Abrusán (2007) for arguments to the effect that *akár* is parallel to English *even* when it appears with an R-expression rather than an interrogative:

- (1) Akár János is el_{particle}jöhet
 even János-nom too away may-come
 ‘Even János may come’ (Abrusán 2007:ex (17))

Negative concord items may be accompanied by *sem* ‘nor’, which we treat as the negative counterpart of *is* ‘too’. If *sem* appears preverbally, negation is absent:

- (130) a. Senki *sem* (**nem*) b. *(*Nem*) dolgozott senki
 NC.who-nom nor not not worked NC.who-nom
 dolgozott *sem*
 worked nor
 ‘Nobody worked’ ‘Nobody worked’

In terms of scope, Hungarian negative concord items behave like universal *minden*-expressions, suggesting that NC items are universal expressions which take scope above negation (cf. Giannakidou 2000 for Modern Greek). However, negative concord items are grammatical in existential constructions, as (131) shows; this is unexpected if negative concord items are exclusively universal.

- (131) a. Senki *nem* volt a kertben
 NC.who-nom not was the garden-inessive
 ‘Nobody was in the garden’
 b. *Nem* volt a kertben senki
 not was the garden-inessive NC.who-nom
 ‘Nobody was in the garden’

Two solutions are available for negative concord items; both stipulate some sort of ambiguity. First, NC items may quantify over individuals, with the following interpretations: (a) universal quantification over individuals, with wide scope over negation and (b) existential quantification over individuals and narrow scope under negation. Second, NC items may be ambiguous between an individual and a kind quantifier – both expressing universal quantification scoping over negation. For negative existential sentences, the resulting interpretation is existential quantification over instantiations. We do not distinguish between these possibilities here. For further discussion on Hungarian NC items, see, among others, Puskás (1998), Surányi (2003, 2006), Szabolcsi (1981), Tóth (1999).

8.14.1 Decreasing NPs

There are various decreasing NPs in Hungarian and various complex quantifiers yield such NPs.

- (132) a. {Egy diák *sem* / *Sehány* diák *nem*} jött az
 one student-nom nor / NC.how.many student-nom not came the
 előadásra
 lecture-sublative
 ‘No students came to the lecture’
 b. i. Kevesebb, mint öt diák vett részt
 fewer than five student-nom took part-acc
 ‘Fewer than five students attended’

- ii. {Ötnél / % Öttől} kevesebb diák vett részt
 five-adesive / five-ablative fewer student-nom took part-acc
 ‘Fewer than five students attended’
- c. Nem minden gyerek sír sokat
 not every child-nom cries much-acc
 ‘Not all children cry a lot’
- d. i. Kevesebb, mint a diákok negyede ment át_{particle} a
 fewer than the students fourth-possessive went through the
 vizsgán
 exam-supressive
 ‘Less than a quarter of the students passed the exam’
- ii. A diákoknak kevesebb, mint a negyede ment
 the students-dat less than the fourth-possessive went
 át_{particle} a vizsgán
 through the exam-supressive
 ‘Less than a quarter of the students passed the exam’
- e. Tízből nem több, mint hét matróz szív Players-t
 ten-relative not more than seven sailor-nom smoke P-acc
 ‘Not more than seven out of ten sailors smoke Players’

8.14.2 Decreasing NPs and Negative Polarity Items

Negation and decreasing quantifiers can license NPIs. The elements licensed are weak NPIs which have the form [[*vala* ‘some’ + wh-word] + *is* ‘too’] (cf. Tóth 1999, Surányi 2006). *Vala*-NPIs are licensed in some averidical environments, and they are subject to an anti-locality requirement; the NPIs cannot appear in the same minimal clause as negation (cf. also Progovac 1994 for *i*-NPIs in Serbo-Croatian, which have similar properties). Decreasing elements can also license *vala*-NPIs; these licensors can appear in the same clause as the NPI. The NPIs are illustrated below in (133). The ungrammaticality of the examples in (133b), (134 a,b) is due to the violation of the anti-locality requirement or to the markedness of the NPI elements *valamilyen* ... *is* and *valahány* ... *is*. The NPIs are italicized below.

- (133) a. Nem hiszem, hogy *valaki* is el_{particle} megy
 not believe-I that someone-nom too away goes
 Moszkvába
 Moscow-illative
 ‘I don’t believe that anyone will go to Moscow’
- b. *A diákok nem olvastak el_{particle} *valamit* is
 the students-nom not read away something-acc too
 ‘The students didn’t read anything’

- c. {Kevés diák / ?kevesebb, mint hat diák} olvasott
 few student-nom / fewer than six student-nom read
 el_{particle} *valamit* *is*
 away something-acc too
 ‘Few students / fewer than six students read anything’
- (134) a. * Sem János, sem Vili nem volt Moszkvában *valaha*
 nor János-nom nor Vili-nom not was Moscow-inessive sometime
is
 too
 ‘Neither János nor Vili was ever in Moscow’
- b. Nem több, mint két diák látott {?valamilyen madarat *is*
 not more than two student-nom saw some kind bird-acc too
 / ?*valahány* *madarat is* / *valamit is*}
 / some quantity bird-acc too / something-acc too
 ‘Not more than two students saw any bird / any number of birds /
 anything’¹⁵
- c. A diákok kevesebb, mint fele volt *valaha is*
 the students fewer than half-possessive was sometime too
 Pinszkben
 Pinsk-inessive
 ‘Less than half of the students was ever in Pinsk’

8.15 Distribution

8.15.1 Grammatical Roles

Hungarian quantifier phrases appear in all major grammatical functions. Some examples illustrating this flexibility follow.

- (135) a. Subject
 Csak három diák ment át_{particle} a vizsgán
 only three student-nom went through the exam-supressive
 ‘Only three students passed the exam’
- b. Object
 János csak három kérdést válaszolt meg_{particle} a
 János-nom only three question-acc answered perfective the
 vizsgán
 exam-supressive
 ‘János answered just three questions on the exam’

¹⁵ There are no *vala*-NPIs that correspond to the first two NPIs.

- c. Other case marked nominals
- i. Goal / recipient (dative case marking)
 A könyvtár minden diák-nak küldött értesítést
 the library every student-dat sent notice-acc
 ‘The library sent a notice to all the students’
 - ii. Locative case marking
 A legtöbb ház-ban van villany
 the most house-inessive is electricity-nom
 ‘There’s electricity in most houses’
- d. Complement of postpositions
- i. A legtöbb ház mellett van egy fészer
 the most house beside is a shed-nom
 ‘There is a shed beside most houses’
 - ii. Minden szakaszvezető mögött állt egy közlegény
 every sergeant behind stood one private-nom
 ‘There was a private standing behind every sergeant’
- e. Possessors
- i. Possessor of subject
 Minden diák orvosa megfelelő képesítéssel
 every student doctor-poss-nom appropriate certification-inst
 rendelkezik
 equipped
 ‘Every student’s doctor is well qualified’
 - ii. Possessor of object
 Két diák orvosát le_{particle} tartóztatták
 two student doctor-poss-acc down arrested
 ‘Two students’ doctors were arrested’

8.15.2 *Quantifier and Definite NP Positions*

As noted in the introduction, quantifiers appear in different quantifier regions in the preverbal field in Hungarian. The position in either of these regions is exclusively determined by the quantificational or semantic properties of the expression; the grammatical function of the QNP plays no role. Following É. Kiss (1994) and Szabolcsi (1997, 2010), three quantifier regions can be identified in the preverbal field, as shown in (136). The ordering of the quantifiers, with the regions marked, is illustrated in (137).

(136) [Topic]₁ [Quantifier]₂ [Focus / Counter]₃ verb

- (137) [sok szakács]₁ [minden fűszerből]₂ [túl keveset]₃ tett a levesbe
 many cook-nom every spice-elative too little-acc put the soup-in
 ‘Many cooks put too little of every spice into the soup’

Expressions in region 1 are interpreted as topics; definite NPs and some quantifiers can appear in this position. Plural expressions in this region have a cumulative or collective interpretation, while those in region 2 are interpreted distributively. Non-monotone and decreasing quantifiers are in region 3; these expressions compete with foci for this position, as noted above. The fact that the preverbal element is in region 3 is indicated, among others, by the postverbal (rather than immediately preverbal) position of the verbal particle *el* ‘away’:

- (138) {Pontosan hat diák / kevesebb, mint hat diák / kevés
 exactly six student-nom / fewer than six student-nom / few
 diák / legfeljebb hat diák} jött *el*_{particle}
 student-nom / at most six student-nom came away
 ‘{Exactly six students / fewer than six students / few students / at most six students} came’

In sum, definite NPs can appear in region 1 and 3; any quantifier which may appear in one of these regions can appear in the same position as a definite NP.

A consequence of this ordering is that a definite expression cannot appear between two universal quantifiers, since the latter are restricted to the second, distributive quantifier region:

- (139) a. A buliban mindenki mindent meg_{particle} kóstolt
 the party-inessive everyone-nom everything-acc perfective tasted
 ‘Everyone tasted everything at the party’
 b. *Mindenki a buliban mindent meg_{particle} kóstolt
 everyone-nom the party-inessive everything-acc perfective tasted
 ‘Everyone tasted everything at the party’

The relative ordering among expressions – which follows from the position occupied in the three regions described above – can be established for various quantifiers and referential expressions. There are expressions, however, for which relative order cannot be established (cf. Bernardi and Szabolcsi 2008, especially Section 6). For example, the distributive universal quantifier *minden* ‘every’ and the negative universal *senki* ‘nobody’ have conflicting co-occurrence restrictions vis-a-vis negation. It follows from these restrictions that the two types of universal cannot cooccur preverbally, and no direct ordering can be established for them.

- (140) a. A szakács mindent meg_{particle} főzött
 the cook-nom everything-acc perfective cooked
 ‘The cook cooked everything’

- b. Senki nem főzött levest
 NC.who-nom not cooked soup-acc
 ‘Nobody cooked soup’
- c. *Mindent senki nem főzött (meg_{particle})
 everything-acc NC.who-nom not cooked perfective
 ‘Nobody cooked everything’
- d. *Senki mindent nem főzött (meg_{particle})
 NC.who-nom everything-acc not cooked perfective
 ‘Nobody cooked everything’

The linear order of quantifiers in the preverbal domain determines relative scope; any scope-taking element has wide scope over those that follow it (É. Kiss 1987, 2002, Brody and Szabolcsi 2003, Bernardi and Szabolcsi 2008).

Quantifier phrases can also follow the verb. In this position, the ordering of the quantifier expressions is not transparently constrained by the quantifier regions noted above (arguably the postverbal constituents are ordered by phonological weight (É. Kiss 2009)). The scope of postverbal quantifiers can be affected by prosodic factors (É. Kiss 2002, Brody and Szabolcsi 2003, Surányi 2003); a postverbal universal quantifier with salient stress can have wide scope over preverbal quantifiers. Otherwise, a postverbal quantifier takes narrow scope with respect to preverbal operators, and within the postverbal field, scope is ambiguous. The difference in translations is meant to highlight the scope distinctions.

- (141) a. Kevés diák olvasott el_{particle} minden könyvet
 few student-nom read away every book-acc
 ‘Every book was read by few students’ (every book > few students; stressed postverbal quantifier)
- b. Kevés diák olvasott el_{particle} minden könyvet
 few student-nom read away every book-acc
 ‘Few students read every book’ (few students > every book; unstressed postverbal quantifier)
- c. TAVALY olvasott el_{particle} minden könyvet kevés diák
 last.year read away every book-acc few student-nom
 ‘It was last year that few students read every book’
 (every book > few students / few students > every book;
 ambiguous)

Quantifiers as well as definite NPs may also undergo left dislocation. These constituents are contrastive topics; they have a marked, fall-rise intonation, and they take narrow scope with respect to preverbal operators. The left dislocated constituent is italicized below.

- (142) [*Minden könyvet*] kevés diák olvasott $el_{particle}$
 every book-acc few student-nom read away
 ‘Few students read every book’ (few students > every book)

Quantifier order is also discussed in Section 8.1.2 and quantifier scope is addressed in more detail in the following section.

8.16 Scope Ambiguities

Quantifier scope is also discussed in some detail in Sections 8.1.2 and 8.15.2 above. It is possible for two or more arguments or modifiers of a predicate to be bound by QNPs. As noted in those sections, the scope among quantifiers (and negation as well as focus) in the preverbal field is determined by linear order. A postverbal quantifier may take narrow scope with respect to preverbal operators (wide scope is only possible for stressed universal quantifiers). In order to exclude an irrelevant, specific reading of the indefinite, a modified numeral is used below.

- (143) a. Legalább egy szerkesztő minden kéziratot $el_{particle}$ olvasott
 at.least one editor-nom every manuscript-acc away read
 ‘At least one editor read every manuscript’ (at least one editor > every manuscript)
- b. Minden kéziratot $el_{particle}$ olvasott legalább egy szerkesztő
 every manuscript-acc away read at.least one editor-nom
 ‘Every manuscript was read by at least one editor’ (every manuscript > at least one editor)

Collective and Distributive Readings

For unmodified indefinites, such as those given in (144), a collective interpretation is preferred, so there is no scope ambiguity.

- (144) a. Három tanár osztályozott száz dolgozatot
 three instructor-nom graded hundred exam-acc
 ‘Three instructors graded a hundred exams’
- b. Három tanár száz dolgozatot osztályozott
 three instructor-nom hundred exam-acc graded
 ‘Three instructors graded a hundred exams’
- c. Száz dolgozatot osztályozott három tanár
 hundred exam-acc graded three instructor-nom
 ‘Three instructors graded a hundred exams’

- d. Száz dolgozatot három tanár osztályozott
 hundred exam-acc three instructor-nom graded
 ‘Three instructors graded a hundred exams’

Certain modifiers yield either a cumulative or collective interpretation; others force distributive interpretations. The expressions within the curly brackets in (145a) result in either a cumulative or a collective interpretation. That is, the individual instructors grade individual exams and in sum three instructors grade a total of one hundred exams (cumulative reading) or the three instructors may grade one hundred exams as a group (collective reading) (cf. Landman 2000). Only a distributive interpretation is possible in (145b) (cf. also Sections 8.7 and 8.8). The distributive expressions *mindannyian*, *mindnyájan* – unlike other distributive expressions – can only appear with a non-quantified, definite phrase (145b-ii).

- (145) a. Cumulative or collective interpretation

Három tanár {összes-en / összesség-é-ben / együtt /
 three instructor-nom total-en_{Adv} / totality-possessive-in / together /
 együtt-es-en / együtt-véve} száz dolgozatot osztályozott
 together-adj-en_{Adv} / together-taken hundred exam-acc graded
 le_{particle}
 down
 ‘Three instructors graded one hundred exams total’¹⁶

- b. Distributive interpretation

- i. Három tanár {egy-enként / külön-külön /
 three instructor-nom one-dist / separately-separately /
 egyes-é-vel / fej-enként / személy-enként}
 one-possessive-with / head-distributive / person-distributive
 száz dolgozatot osztályozott le_{particle}
 hundred exam-acc graded down
 ‘Three instructors graded one hundred exams each / apiece’
- ii. A tanárok {mind-annyi-an / mind-nyáj-an} száz
 the instructor-nom every-so.much-an_{Adv} / every-?-an_{Adv} hundred
 dolgozatot osztályoztak le_{particle}
 exam-acc graded down
 ‘The instructors all graded one hundred exams’¹⁷

¹⁶ The suffix *-es*, glossed as ‘adj’, yields an adjective.

¹⁷ The suffix *-nyáj* is a bound morpheme which only appears in *mindnyájan* ‘everyone’.

- iii. {Három tanár / A három tanár} {egy-enként /
 three instructor-nom / the three instructor-nom one-dist /
 külön-külön} száz dolgozatot osztályozott le_{particle} /
 separately-separately hundred exam-acc graded down
 '(The) three instructors all graded one hundred exams'

Quantifier position can also affect interpretation. A counting quantifier must occur in preverbal region 3 unless the sentence has focus or the verb is negated. If more than one counting quantifier appears preverbally, a cumulative interpretation arises (146). If one of the quantifiers follows the verb, the resulting interpretation is distributive (147).

- (146) a. Több szem többet lát
 more eye-nom more-acc see
 'More eyes see more together'
- b. Kevés ember keveset végez
 few person-nom few-acc accomplish
 'Few people accomplish few things between them'
- (147) a. Több szem lát többet
 more eye-nom see more-acc
 'More eyes see more each'
- b. Kevés ember végez keveset
 few person-nom accomplish few-acc
 'Few people accomplish few things individually'

Wh-Questions

Wh-phrases in Hungarian immediately precede the verb, or they precede another preverbal wh-phrase. A pair list reading is available only if there are multiple preverbal wh-phrases. The order of the wh-phrases determines interpretation, as shown below.

- (148) a. Melyik diák melyik kérdést válaszolta meg_{particle}?
 which student-nom which answer-acc answered perfective
 'Which student answered which question?'
- b. Melyik kérdést melyik diák válaszolta meg_{particle}?
 which question-acc which student-nom answered perfective
 'Which question was answered by which student?'

With the exception of the universals *mindegyik* and those containing *minden* (as in (150)), quantificational expressions may either precede or follow a

wh-phrase (cf. (151)). Quantifiers may only precede wh-phrases if they are left dislocated. Left dislocation is indicated by italicization below.

- (149) *Ki* mit választott?
 who-nom what-acc chose
 ‘For every person x, what did x choose?’
- (150) a. ?? {*Minden-ki* / *mindegyik diák*} melyik cikket
 every-who-nom / every student-nom which paper-acc
 választotta?
 chose
 ‘Which paper did everybody / every student choose?’ (wh > every)
- b. Melyik cikket választotta {*minden-ki* / *mindegyik diák*}?
 which paper-acc chose every-who-nom / every student-nom
 ‘Which paper did everybody / every student choose?’ (wh > every)
- (151) a. *A legtöbb diák* melyik cikket választotta?
 the most student-nom which paper-acc chose
 ‘Which paper did most students choose?’ (wh > most)
- b. Melyik cikket választotta a legtöbb diák?
 which paper-acc chose the most student-nom
 ‘Which paper did most students choose?’ (wh > most)

Nominal and Verbal Quantifiers

The distribution of A-quantifiers is constrained by the generalizations that also applies to other quantificational expressions. Universal quantifiers are excluded from a focus or counting quantifier position (152). The equivalents of *many* and *many times* can only appear in this position if they are focused. The equivalents *few* and *few times*, in contrast, must precede the verb immediately:

- (152) a. {*Kevésszer* / *?sokszor* / **mindig*} olvasták *e*_{particle} a
 few-mult / many-mult / always read away the
 diákok a verset
 students-nom the poem-acc
 ‘The students read the poem few times / many times / always’
- b. {*Kevés diák* / *?sok diák* / **minden diák*}
 few student-nom / many student-nom / every student-nom
 olvasta *e*_{particle} a verset
 read away the poem-acc
 ‘Few students / many students / all the students read the poem’

- (153) a. {*Kevésszer / sokszor / mindig} a diákok olvasták el_{particle}
 few-mult / many-mult / always the students-nom read away
 a verset
 the poem-acc
 ‘The students read the poem few times / many times / always’
- b. {*Kevés diák / sok diák / minden diák} a
 few student-nom / many student-nom / every student-nom the
 verset olvasta el_{particle}
 poem-acc read away
 ‘Few students / many students / all the students read the poem’

Negation

In general, negation can take scope over expressions that follow it, which is consistent with the correlation between linear order and scope. The post-verbal quantifier phrase may scope over negation if it is stressed (cf. inverse scope of a postverbal quantifier over a preverbal element, see Sections 8.1.2 and 8.15.2).

- (154) a. Több, mint négy tanár nem írta alá_{particle} a kérvényt
 more than four teacher-nom not signed under the petition-acc
 ‘More than four teachers did not sign the petition’ (more than
 four > not)
- b. Nem írta alá_{particle} a kérvényt több, mint négy tanár
 not signed under the petition-acc more than four teacher-nom
 ‘More than four teachers did not sign the petition’ (not > more
 than four)

Universal quantifiers take scope under negation, as in (155a,b). The *mind*-type distributive universals cannot scope over negation (155c); instead, a negative concord item yields this interpretation (155d) (see Section 8.15.2).

- (155) a. Nem dohányzik mindenki
 not smokes everyone-nom
 ‘Not everyone smokes’ (not > everyone)
- b. Nem mindenki dohányzik
 not everyone-nom smokes
 ‘Not everyone smokes’ (not > everyone)
- c. * Mindenki nem dohányzik
 everyone-nom not smokes
 ‘No one smokes’

- d. Senki nem dohányzik
 NC-body not smokes
 ‘Nobody smokes’ (everyone > not)

8.17 One to One Dependency

In the following examples, the two relevant interpretations are (a) each juror reached conclusions that are different from those of all other jurors, or (b) the jurors reached at least two distinct conclusions among themselves. (a) is a one-to-one correspondence, (b) merely implicates multiplicity.

- (156) a. Különböző esküdtek {különböző / más-más}
 different jurors-nom different / different-different
 következtetéseket vontak $le_{particle}$ ugyanazokból az
 conclusions-acc concluded down same-pl-relative the
 érvekből
 arguments-relative
 ‘Different jurors drew different conclusions from the same arguments’ (for each juror, a conclusion different from all other jurors)
- b. {Minden egyes esküdt / mindegyik esküdt} más-más
 every single juror-nom / every juror-nom different-different
 következtetést vont $le_{particle}$ ugyanazokból az
 conclusion-acc concluded down same-pl-relative the
 érvekből
 arguments-relative
 ‘Different jurors drew different conclusions from the same arguments’ (for each juror, a conclusion different from all other jurors)
- c. Az esküdtek {különböző / más-más} következtetéseket
 the jurors-nom different / different-different conclusions-acc
 vontak $le_{particle}$ ugyanazokból az érvekből
 concluded down same-pl-relative the arguments-relative
 ‘The jurors drew different conclusions from the same arguments’
 (not the same conclusions for each juror; at least two distinct conclusions)
- d. Nem minden esküdt vonta $le_{particle}$ ugyanazokat a
 not every juror-nom concluded down same-plural-acc the
 következtetéseket ugyanazokból az érvekből
 conclusions-acc same-plural-relative the arguments-relative
 ‘Different jurors drew different conclusions from the same arguments’ (not the same conclusions for each juror; at least two distinct conclusions)

Note that not only definite plurals but also distributive universals can serve as sorting keys (see Balusu 2006 and Szabolcsi 2010:8.4 for the significance of this fact).

8.18 Rate Phrases

The frequency adverbials in the following rate expressions are formed with the distributive suffix *-nként* (cf. *óránként* ‘hourly’, *évenként* ‘yearly’) or the distributive suffix *-(o)nta|-(e)nte* (cf. *naponta* ‘daily’, *hetente* ‘weekly’, *évente* ‘yearly’).

- (157) a. Az a vonat (óra-nként) {400 kilométeres sebességgel / 400
that the train-nom (hour-dist) 400 kilometer-adj speed-inst / 400
kilométerrel} halad
kilometer-inst advances
‘That train is traveling at 400 kilometers per hour’
- b. {Nap-onta / minden nap} 20 kilométert futok
day-dist / every day 20 kilometer-acc run-I
‘I run twenty kilometers a day’
- c. i. János {nap-onta / nap-onta kétszer / nap-onta háromszor}
János-nom day-dist / day-dist two-mult / day-dist three-mult
meg_{particle} mossa az arcát
perfective washes the face-possessive-acc
‘János washes his face every day / twice a day / three times a day’
- ii. János {minden nap / minden nap kétszer / minden nap
János-nom every day / every day two-mult / every day
háromszor} *meg_{particle}* mossa az arcát
three-mult perfective washes the face-possessive-acc
‘János washes his face every day / twice a day / three times a day’

8.19 Some Concluding Spot-Checks

8.19.1 Quantifiers

Monomorphemic *All*

In Hungarian, *mind* is a monomorphemic universal quantifier (cf. Section 8.3.1 for a more detailed discussion).

- (158) A diákok mind olvastak egy Shakespeare-drámát
the students-nom all read one Shakespeare-drama
‘All the students read a Shakespeare drama’

Monomorphemic *One*

There is a monomorphemic equivalent, *egy*, which also functions as the indefinite determiner.

- (159) *egy diák*
 one student
 ‘one student’

Monomorphemic Value Judgment Quantifier *Many*

The monomorphemic equivalent is *sok*.

- (160) *sok diák*
 many student
 ‘many students’

Monomorphemic Determiner *No*

Hungarian does not have monomorphemic *no*. Hungarian is a negative concord language, and negative concord items contain the NC morpheme *sen-* (cf. Section 8.14). The morpheme-final nasal may undergo assimilation or deletion.

- | | | | |
|----------|--|----|--|
| (161) a. | <i>sem-mi</i>
NC.what
‘nothing’ | b. | <i>sen-ki</i>
NC.who
‘nobody’ |
| | c. <i>se-hány</i>
NC.how.many
‘none’ | d. | <i>se-hol</i>
NC.where
‘nowhere’ |

Distinction Between Distributive and Collective Universal Quantifier

The universal quantifiers (*mind(en)*, *mindegyik*, *valamennyi* and *az összes*) force distributive interpretation. For a more detailed discussion of these quantifiers, see Section 8.3.1.

- (162) a. *Mind a két fiú fel_{particle} emelte a zongorát*
 mind the two boy-nom up lifted the piano-acc
 ‘Both boys lifted up the piano’ (separately, *together)

- b. {Minden / Mindegyik / Valamennyi / Az összes} fiú
 mind-en_{Adv} / mind-one / some-how.many / the all boy-nom
 fel_{particle} emelte a zongorát
 up lifted the piano-acc
 ‘Every boy / Each boy / Every boy / All the boys lifted up the
 piano’ (separately, *together)

8.19.2 Morphosyntax of A-Quantifiers and D-Quantifiers

D-quantifiers may be morphologically simple or complex; A-quantifiers are always morphologically complex (see example (166) and its discussion). Some examples of these quantifiers are given below; a more detailed discussion of A-quantifiers appears in Section 8.2.2 and D-quantifiers are discussed in Section 8.3.1.

- (163) Monomorphemic D-quantifiers
 mind ‘every’; egy ‘one’; két ‘two’; tíz ‘ten’; ...
 sok ‘many / much’; kevés ‘few / little’
- (164) Multimorphemic A-quantifiers
- a. gyakr-an (often-an_{Adv}) ‘often’; ritká-n (rare-n_{Adv}) ‘seldom’
 - b. Frequency adverbs
 het-ente (week-dist) ‘weekly’; nap-onta (day-dist) ‘daily’; perc-enként
 (minute-dist) ‘every minute’
 - c. Multiplicatives 1
 egy-szer (one-mult) ‘once’; sok-szor (many-mult) ‘many times’
 - d. Multiplicatives 2
 egy alkalommal (one occasion-inst) ‘once’; ötvennégy alkalommal
 (fifty-four occasion-inst) ‘fifty-four times’
- (165) Multimorphemic D-quantifiers
- a. Universals
 mind-en (every-en_{Adv}) ‘every’; minden-hol (every-en_{Adv}-where)
 ‘every-where’; mind-ig (every-until) ‘always’
 - b. Negative concord items
 sen-ki (NC-who) ‘nobody’; se-hol (NC-where) ‘nowhere’
 - c. Free choice items 1
 akár-ki (ever-who) ‘anyone’; akár-hol (ever-where) ‘anywhere’
 - d. Free choice items 2
 bár-ki (any-who) ‘anyone’; bár-hol (any-where) ‘anywhere’
 - e. Existentials
 vala-ki (some-who) ‘someone’; vala-hol (some-where) ‘somewhere’

A-quantifiers are morphologically complex, as noted above. The only initially plausible exceptions are the following:

- (166) a. *soha* ‘never’
 b. *néha* ‘sometimes, infrequently’
 c. *valaha* ‘earlier, before’

Even within these quantifiers, it is reasonable to assume some internal morphological structure. The reader may notice that the adverbs above all contain *ha*, which is interpreted as ‘if’ when appearing in isolation.

There is further support for the morphological complexity. *Soha* ‘never’ is a negative concord item, and Hungarian negative concord items in general contain the morpheme *sen-*. It is conceivable then that the initial consonant of *soha* is related to the *sen-* prefix. The initial sequence in *néha* ‘sometimes, infrequently’ has an existential interpretation; *né-* is also found in *né-hány* (existential-how.many/much) ‘several (small quantity)’; *né-hol* (existential-where) ‘in several (few) places’ and *né-melyik* (existential-which) ‘several’. Finally, *valaha* ‘earlier, before’ contains the prefix *vala-* ‘some’, which also has existential interpretation. The prefix also appears in *vala-ki* (some-who) ‘someone’; *vala-mi* (some-what) ‘something’; *vala-hol* (some-where) ‘somewhere’, *vala-melyik* (some-which) ‘some (of a group of individuals)’, among others.¹⁸

8.19.3 *Only*

The focus particle *only* is often realized as *csak*. *Csak*-phrases, being foci, appear in the preverbal focus position (cf. Section 8.1.1.3).

- (167) a. *Csak János kapott díjat*
 only János-nom received prize-acc
 ‘Only János got a prize’
 b. *Csak diákok voltak az ünnepségen*
 only students-nom were the ceremony-superessive
 ‘Only students attended the ceremony’
 c. *Csak János evett csak egy süteményt*
 only János-nom ate only one cake-acc
 ‘Only János ate only one cake’ (multiple foci)

The meaning of *csupa* is similar to *only*, but *csupa* only has universal interpretation¹⁹:

¹⁸ Disregarding A-quantifiers, comparable *vala-* and *né-* expressions systematically differ in that *vala-* expressions have an existential or non-specific interpretation. *Né-* expressions generally require multiple referents and denote a relatively small number (between 3 and 5).

¹⁹ *Csupa* is similar to German *lauter*, discussed in Eckardt (2006).

- (168) a. Csupa gyanús alak volt a bárban
all suspicious figure-nom was the bar-inessive
'There were all freaks at the bar' (= All the people at the bar were freaks)
- b. Csak gyanús alakok voltak a bárban
only suspicious figures-nom were the bar-inessive
'There were only freaks at the bar'

Csupa appears with a singular noun, suggesting that it is a determiner, unlike *csak*.

- (169) a. A faluban csak sárga házakat_{pl} építenek
the village-inessive only yellow houses-acc build-3pl
'People build only yellow houses in the village'
- b. A faluban csupa sárga házat_{sg} építenek
the village-inessive all yellow house-acc build-3pl
'People build all yellow houses in the village'

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Chapter 9

Quantifiers in Italian

Paola Crisma

9.1 Some NP Background

In this section, I present some basic morphosyntactic properties of Italian, relevant to the presentation of quantifiers. Among the vast bibliography available, the references cited here are mostly chosen because of the relative wealth of Italian examples they offer, though several among them can be regarded as ‘classics’.

9.1.1 Inflection and Agreement

In Italian, nouns are inflected for gender (masculine and feminine)¹ and number (singular and plural). Case is only marked on pronouns. Adjectives and most determiners and quantifiers agree in gender and number with the noun they modify²:

- (1) a. Una vecchia pentola rotta
a-f.sg old-f.sg casserole-f.sg broken-f.sg³
‘An old broken casserole’⁴

¹ Grammatical gender tends to match natural gender with animate nouns and is unpredictable with inanimate nouns. Masculine is the default gender, therefore throughout this work I will use the masculine as the default citation form.

² I will consider quantifiers simplex/monomorphemic if the root is monomorphemic, abstracting away from the presence/absence of overt agreement markers.

³ In glosses, I will only indicate the morphological components relevant to the point being made in the example.

⁴ The translation always represents the intended meaning, both for grammatical and ungrammatical sentences, even if in some cases also the English translation is an ungrammatical sentence.

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- b. Un vecchio tegame rotto
 a-m.sg old-m.sg casserole-m.sg broken-m.sg
 ‘An old broken casserole’

Agreement is realized also on categories external to the noun phrase. In particular: subjects agree in number, but not in gender, with the inflected verb:

- (2) a. Il gatto / La gatta miagola
 the-m.sg cat-m.sg / the-f.sg cat-f.sg meows-3sg
 ‘The tomcat / The she-cat meows’
 b. I gatti / Le gatte miagolano
 the-m.pl cat-m.pl / the-f.pl cat-f.pl meow-3pl
 ‘The tomcats / The she-cats meow’

However, subjects agree both in gender and number with adjectival predicates (as in (3-a)) and, in passive and unaccusative constructions, with the past participle (when present, cf. (3-b)). Objects agree in gender and number with the past participle of the verb only when they are clitic pronouns that appear on its left (cf. (3-c) as opposed to (3-d)):

- (3) a. Quella gatta è molto aggressiva
 that-f.sg cat-f.sg is-3sg very aggressive-f.sg
 ‘That she-cat is very aggressive’
 b. La gatta è scappata
 the-f.sg cat-f.sg is-3sg escaped-f.sg
 ‘The she-cat ran away’
 c. Sofia ha ritrovato la gatta
 Sofia-f.sg has re-found-m.sg the-f.sg cat-f.sg
 ‘Sofia found the she-cat again’
 d. Sofia l’ ha ritrovata
 Sofia-f.sg it-f.sg has re-found-f.sg
 ‘Sofia found her again’

9.1.2 *Definiteness: Articles and Demonstratives*

With respect to definiteness, Italian is very similar to English: argument NPs are always overtly definite or indefinite.⁵ Definite NPs are introduced by the

⁵ For a definition of definite, see Heim (1982).

definite article,⁶ which is inflected for gender and number: masc. *il/i*,⁷ fem. *la/le*.⁸ Also NPs introduced by the demonstratives *quello*⁹ ‘that’ and *questo* ‘this’¹⁰ are definite. In the absence of one of the above definite determiners, a NP is indefinite.

Plural and mass nouns can appear as ‘bare’ nouns, in the sense of Carlson (1977). Unlike English, bare nouns are normally interpreted as existential and do not admit a generic reading.¹¹ Thus, the equivalent of the generic bare noun in a sentence like *Dogs are intelligent* is a NP introduced by the definite article: *I cani sono intelligenti*.

Indefinite singular count nouns cannot be used ‘bare’: if no other quantifier is used, the so-called ‘indefinite article’ *un(o)* is required¹²:

- (4) a. Ho deciso di vendere la / questa / quella macchina
 have-1sg decided of sell the / this / that car
 ‘I decided to sell the/this/that car’
- b. Ho deciso di comprare *(una) macchina
 have-1sg decided of buy a car
 ‘I decided to buy a car’

9.1.3 Proper Names

Proper names¹³ are monomorphemic,¹⁴ and often non-transparent in meaning.¹⁵ Normally, they are not preceded by the definite article, with some exceptions.

- When a woman is referred to using her family name, without the first name, the definite article *la* is normally used:

⁶ Derived from the Latin distal demonstrative *ille*.

⁷ There is an allomorph *l(o)/gli* which is selected before vowels, some consonants and [s]+consonant.

⁸ The singular *la* is normally reduced to *l’* before vowels, plural *le* is never reduced.

⁹ Also a continuation of *ille*.

¹⁰ Some varieties have a third demonstrative, *codesto*, which is used for objects and individuals close to the hearer rather than the speaker.

¹¹ Unless they are modified, see Chierchia (1998), Longobardi (2001), Delfitto (2002).

¹² However Italian, like English, admits bare singular count nouns when they are coordinated and receive a definite interpretation, see Heycock and Zamparelli (2003), Roodenburg (2004).

¹³ Here I will only cursorily describe personal proper names, leaving geographical names, names of ships, institutions, etc. out of the picture.

¹⁴ Abstracting away from gender-marking: *Paolo* (masc.) vs. *Paola* (fem.).

¹⁵ With the exceptions of a few auspicious names, for example *Liberio* ‘free’, *Serena* ‘serene’, *Vittoria* ‘victory’.

- (5) Vertice NATO: la Merkel aspetta Berlusconi impegnato al telefono
 summit NATO: the Merkel waits Berlusconi busy at+the phone
 ‘NATO summit: Merkel waits for Berlusconi who is busy on the phone’
 (Source: *Il Sole 24 Ore*)

This use is however increasingly avoided in the press (even if its omission results in ungrammaticality), for it is bizarrely perceived as sexist.

- First names are normally not preceded by the article, though in some varieties it is common to use the definite article before feminine proper names, and in some restricted areas (e.g. Milan), also before masculine proper names:

- (6) si¹⁶ è aperta la portiera, è caduto giù l' Armando.
 SI is opened the car door is fallen down the Armando
 ‘the car door opened and Armando fell out’ (E. Jannacci)

The syntactic properties of proper names in Italian, as opposed to English, are described in Longobardi (1994).

9.1.4 Word Order in the NP

Articles, demonstratives and quantifiers¹⁷ occupy the leftmost position of the nominal phrase. Adjectives can precede or follow the noun, but the choice is not entirely free: some adjectives only appear pre-nominally, others only post-nominally, and anyway the position of the adjective almost always affects its interpretation.¹⁸ PPs and relative clauses come after the noun and any post-nominal adjective (unless the latter is focused).¹⁹

There is no equivalent of English *s*-genitive as in *Pam's car*. If the possessor is a full NP, it is realized as a PP headed by the preposition *di* ‘of’, hence it is always found in post-nominal position. If the possessor is pronominal, it is normally a pre-nominal element that precedes adjectives and agrees in gender and number with the noun. Unlike English, pronominal possessors co-occur with articles, definite or indefinite:

- (7) a. I miei quadri saranno bruciati
 the-m.pl 1sg.possessor-m.pl painting-m.pl be-fut.3pl burnt-m.pl
 ‘My paintings will be burnt’

¹⁶ ‘Ergative *si*’, found in certain unaccusative constructions, see Burzio (1986, pp. 38–39).

¹⁷ But see Section 9.6.

¹⁸ On this, see in particular Nespor (1988), Crisma (1991, 1996), Bernstein (1993, 2001), Cinque (1994), Zamparelli (1995).

¹⁹ See Giorgi (1988).

- b. *Miei quadri saranno bruciati
 c. Una sua amica arriverà domani
 a-f.sg 3sg.possessor-f.sg friend-f.sg arrive-fut.3sg tomorrow
 ‘A (female) friend of his/her will arrive tomorrow’
 d. *Sua amica arriverà domani

For some considerations on the co-occurrence of pronominal possessors and quantifiers, see Section 9.6.

9.1.5 Word Order in the Sentence

This section is limited to a few very basic notes meant to facilitate the understanding of the examples. Thus, only the most obvious differences between Italian and English are mentioned here.

Italian is a null subject language. Pronominal subjects are realized only when they bear contrastive focus.

Subjects can precede or follow the inflected verb, the choice depending on the intricate interaction between the informational structure and the type of the verb (see Burzio 1986, Benincà et al. 1988, Calabrese 1991, Delfitto and Pinto 1992, Moro 1997, Pinto 1997).

Objects follow the verb, but pronominal objects appear as clitics placed immediately before the inflected verbs, unless they bear contrastive focus. Alongside the series of accusative clitics,²⁰ there is a series of dative clitics for indirect objects, two locative clitics and the genitive/ablative clitic *ne* (see Belletti and Rizzi 1981, Cordin 1988).

A characteristic property of Italian is that unaccusative verbs are distinguished from transitive and intransitive verbs by a number of morphosyntactic features that are in some case very salient, for example the selection of the auxiliary. Some unaccusative verbs are formed using the clitic *si*, which is also used as a reflexive clitic and to express arbitrary subjects. On these phenomena, see in particular Burzio (1986).

9.1.6 Negative Concord

Italian is normally described as a Negative Concord language. The pre-verbal negative marker *non* can by itself negate a clause:

- (8) Sofia non è grassa
 Sofia NEG is fat
 ‘Sofia is not fat’

²⁰ Used also as reflexive in the 1st and 2nd person. For the 3rd person, both singular and plural, the reflexive clitic is *si*, which has other uses, see Burzio (1986).

N-words must co-occur with the negative marker when they appear in a structural position that does not c-command the finite verb; conversely, when they c-command the finite verb, the simultaneous presence of *non* gives rise to a double negation reading:

- (9) a. Non ha barato nessun giocatore
 NEG has cheated no player
 ‘No player cheated’ (Negative Concord)
- b. Nessun giocatore non ha barato
 ‘No player did not cheat’ (= all of them cheated)

For extensive discussion, see in particular Rizzi (1982, chap. 4), Zanuttini (1991, 1997), Acquaviva (1997).

I Core Quantifiers²¹

9.2 Generalized Existential (Intersective) Quantifiers

9.2.1 Existential *D*-Quantifiers

9.2.1.1 Cardinal Quantifiers

Numerals obviously fall into this class. As one may reasonably expect, they combine only with plural nouns with the exception of *un(o)* ‘one’.²² *Uno* is the only numeral displaying agreement marks (only for gender: masc./fem.), though in compounds such as *ventun(o)* ‘twenty-one’, *trentun(o)* ‘thirty-one’ etc. it bears the default m.sg ending:

- (10) Sette / zero / ventun(o) scimmie ballavano sul tetto
 seven / zero / twenty-one-m.sg monkey-f.pl danced-impf on+the roof
 ‘Seven / zero / twenty-one monkeys were dancing on the roof’

In this class, one can list four Qs such that QAB simply means $A \cap B \neq \emptyset$: *alcuni*, *qualche*, \emptyset and the so-called ‘partitive article’. They roughly cover the uses of English *some* and \emptyset , but they have different syntactic, selectional and scope-taking properties, which will be dealt with in the appropriate sections.

²¹ In some cases, the items discussed will be accompanied by a note on their etymology, taken from Cortelazzo and Zolli (1980). Etymology will not be given for items that are the regular descendants of their Latin correspondents, but only for complex derivations or for curious semantic drifts.

²² The numeral *one* and the indefinite article (cf. (4-b)) are not segmentally distinct, both being the continuation of the Lat. numeral *unu(m)*.

*Alcuni*²³ and *qualche*,²⁴ unlike *some*, combine only with count nouns, the former with plurals²⁵ and the latter with singulars, both however with plural denotation:

- (11) a. *Alcuni pinguini stanno facendo chiasso in giardino*
 some-m.pl penguin-m.pl stay doing racket in garden
 ‘Some penguins are making a racket in the garden’
- b. **Alcun pinguino sta facendo chiasso in giardino*
 some-m.sg penguin-m.sg stays doing racket in garden
 ‘Some penguin is making a racket in the garden’
- c. **Alcuna colla è caduta sulla scrivania*
 some-f.sg glue-f.sg is fallen on+the desk
 ‘Some glue has fallen on the desk’
- (12) a. **Qualche pinguini stanno facendo chiasso in giardino*
 some penguin-m.pl stay doing racket in garden
 ‘Some penguins are making a racket in the garden’
- b. *Qualche pinguino sta facendo chiasso in giardino*
 some penguin-m.sg stays doing racket in garden
 ‘Some penguins are making a racket in the garden’²⁶
- c. **Qualche colla è caduta sulla scrivania*²⁷
 some glue-f.sg is fallen on+the desk
 ‘Some glue has fallen on the desk’

On the other hand, \emptyset and the ‘partitive article’²⁸ combine with plural or mass nouns, but not with singular count nouns²⁹:

²³ From spoken Latin **alicūnu(m)*, from *aliquis unus* ‘one whoever’.

²⁴ Invariant: it does not agree in gender and number. It derives from *quale che (sia)*, literally ‘which that may be’, originally meaning *whatever*. The original meaning is preserved when *qualche* is preceded by the indefinite article:

- (i) *Bisogna trovare una qualche soluzione*
 need-impers find a some solution
 ‘One/We must find some solution, no matter what’

For some more details on *qualche*, see Zamparelli (2007).

²⁵ Singular *alcuno* is a negative polarity item, see (17-b) and Section 9.16.

²⁶ Note the plural meaning of the morphologically singular *Qualche pinguino*.

²⁷ The sentence is fine with a taxonomic reading, like English *Some glues have fallen on the desk*.

²⁸ The ‘partitive article’ is etymologically derived from the preposition *di* + Def.Art., but is not definite at all. At the earliest stages of Italian (13th C), constructions of the form *di* + Def.Art. + N were indeed interpreted as partitives with a presupposed non-empty restrictor, while the equivalent of the modern ‘partitive article’ was realized as *di* + N, without the definite article. The modern construction, however, is already attested in the *Divina Commedia* (earliest years of the 14th C). See Rohlf’s (1968, pp. 115–117) for details.

²⁹ The examples in (13) might be slightly misleading for they can give the wrong impression that ‘bare’ nouns and nouns preceded by the ‘partitive article’ are equivalent. Actually, they have quite different distributional and scope-taking properties, discussed in Sections 9.17 and 9.18.

- (13) a. Ho trovato \emptyset / degli scarafaggi dappertutto
 have-1sg found \emptyset / of+the-m.pl cockroach-m.pl everywhere
 ‘I found cockroaches everywhere’
- b. Ho trovato \emptyset / della muffa dappertutto
 have-1sg found \emptyset / of+the-f.sg mold-f.sg everywhere
 ‘I found mold everywhere’
- c. *Ho trovato \emptyset / dello scarafaggio dappertutto³⁰
 have-1sg found \emptyset / of+the-m.sg cockroach-m.sg everywhere
 ‘I found cockroach everywhere’

It might be tempting to analyze the ‘partitive article’ as $\emptyset + dei + N$, namely, as a partitive construction headed by \emptyset . There are however a number of counter-arguments to this hypothesis:

- noun phrases introduced by the ‘partitive article’ freely appear in some syntactic positions that are not always available for unmodified bare nouns, notably the pre-V subject position (see the discussion about (132));
- noun phrases introduced by the ‘partitive article’ can receive a generic interpretation, while this is normally excluded for unmodified bare nouns³¹;
- noun phrases introduced by the ‘partitive article’ can be interpreted as non-presuppositional indefinites, unlike the restriction in partitive constructions (see (68)).

For an analysis of the ‘partitive article’ as a partitive construction with movement of *dei* to a higher D head, see Chierchia (1997), Zamparelli (2008).

The last simplex cardinal quantifiers are Qs with the interpretation $A \cap B = \emptyset$. *Nessun(o)*³² is the closest equivalent to English *no*.³³ The presence of the negative marker *non* is anyway required whenever a QNP introduced by *nessun(o)* follows the finite verb (cf. Section 9.1.6). *Nessun(o)* cannot be pluralized and is normally used with singular count nouns:

³⁰ This sentence is ungrammatical if the intended reading for *scarafaggio* is count, but it may become acceptable to the extent that one can force a mass interpretation (‘cockroach-like material’).

³¹ See Longobardi (2001).

³² From Lat. *ne ipse unus*, roughly ‘not even one’.

³³ *Nessuno* is also found in interrogatives, and it is in this case the equivalent of English *any*:

- (i) Hai ricevuto nessuna richiesta in merito?
 have-2sg received no request in respect
 ‘Have you received any request with respect to this?’

See also Rizzi (1982, chap. 4), Longobardi (1988).

- (14) a. Non si è rotta nessuna bottiglia
 NEG SI is broken no-f.sg bottle-f.sg
 ‘No bottle got broken’
- b. *Non si sono rotte nessuna bottiglie
 NEG SI are broken no-f.pl glass-f.pl
 ‘No bottles got broken’

With mass nouns, *nessun(o)* tends to be excluded, though it is admissible in two cases: with abstract nouns,³⁴ and in negative sentences adversatively opposed to a previous assertion:

- (15) Non ho nessuna pazienza con i bambini
 NEG have-1sg no-f.sg patience-f.sg with the children
 ‘I have no patience with children’
- (16) - Temo che ci sia (della) muffa in frigo
 fear-1sg that there is-sbjv of+the-f.sg mold-f.sg in fridge
 ? - Io non ho visto nessuna muffa in frigo
 I not have-1sg seen no-f.sg mold in fridge
 ‘- I’m afraid there is some mold in the fridge
 - I haven’t seen any mold in the fridge’

The closest Italian analogue to English NPI *any* is *alcun(o)* used in the singular, not to be confused with plural *alcuni*. Note however that *alcun(o)* is not used in interrogatives,³⁵ and does not normally combine with mass nouns, though it is acceptable with the abstract nouns that combine with *nessun(o)*. Also, the use of *alcun(o)* instead of *nessun(o)* in negative existentials is confined to formal registers; this is why (17-a) is less felicitous than (14-a) while (17-b) is perfect:

- (17) a. ?Non si è rotta alcuna bottiglia
 NEG SI is broken any bottle
 ‘No bottle broke’
- b. Il governo non ha dato alcuna direttiva in materia
 the government not has given any-f.sg instruction-f.sg in matter
 ‘The government has not given any directions as to the matter’

For a more detailed description of *alcun(o)* as a NPI see Section 9.16.

³⁴ See in particular Tovena (2001, 2003).

³⁵ See footnote 33.

9.2.1.2 Interrogatives

There are three intersective interrogative Qs, one cardinal: *quanto/i* ‘how much/many’; the others non-cardinal: *quale/i*, *che* ‘which’. *Quanto/i* combines with plural and mass nouns, while *quale/i* and *che*³⁶ combine with singular count, plural and mass nouns (in the latter case they induce a type reading):

- (18) a. Quanti cavalli sono già arrivati?
How many horses are already arrived
‘How many horses have already arrived?’
- b. Quanta birra hai bevuto?
how much beer have-2sg drunk
‘How much beer did you drink?’
- (19) a. Quale / Che cavallo hai scelto?
which / which horse have-2sg chosen
‘Which horse did you choose?’
- b. Quali / Che cavalli hai scelto?
which / which horses have-2sg chosen
‘Which horses did you choose?’
- c. Quale / Che vino hai scelto?
which / which wine have-2sg chosen
‘Which wine did you choose?’

9.2.1.3 Value Judgment Qs

Most value judgment Qs combine with plural and mass nouns. In this group one finds *molto*, *tanto*,³⁷ *parecchio*,³⁸ *troppo*,³⁹ *abbastanza*,⁴⁰ *poco*:

- (20) a. Ieri ho venduto molti / tanti / parecchi / troppi /
Yesterday have-1sg sold many / many / several / too many /
abbastanza / pochi criceti
enough / few hamsters
‘Yesterday I sold many / several / too many / enough / few hamsters’

³⁶ Invariant.

³⁷ From Lat. adjective *tāntu(m)* ‘so great’. It is also used to build comparative D-quantifiers, see Section 9.7.

³⁸ From spoken Lat. **pariculu(m)*, diminutive of adj. *pār* ‘equal’.

³⁹ From Old French *trop*, in turn a borrowing from Franconian.

⁴⁰ From 14th C Italian: *a bastanza*, ‘in sufficient quantity’. It is invariant.

- b. Ieri ho venduto molta / tanta / parecchia / troppa /
 Yesterday have-1sg sold a lot of / a lot of / a lot of / too much /
 abbastanza / poca roba
 enough / little junk
 ‘Yesterday I sold a lot of / too much / enough / little junk’

A few value judgment Qs only combine with plurals: *numerosi* ‘numerous’, *diversi* ‘several’ (literally ‘different’), *vari* ‘various’. This is probably due to the fact that the lexical content of these three Qs is quite transparent, and implies the existence of discrete units.

There is no simplex value judgement Q that only combines with mass nouns, i.e. there are no pairs such as *many/much*, *few/little*.

9.2.2 Existential A-Quantifiers

The only really monomorphemic A-Quantifier in this category is *mai* ‘never’.⁴¹

- (21) Non vado mai a scuola in macchina
 not go-1sg never to school in car
 ‘I never drive to school’

As with other *n*-words, when *mai* precedes the inflected verb *non* is absent:

- (22) Mai avrei immaginato una cosa del genere
 never have-cond.1sg imagined a thing of+the kind
 ‘Never would I imagine anything like that’

Generalized Existential (Intersective) A-Quantifiers can also be derived combining *volta/e* with any of the determiners discussed in Section 9.2.1, with the exception of *nessuna* and *quale*:

- (23) cardinals:
- a. Qualche volta / Delle volte / Alcune volte vado a scuola a piedi
 some time / of+the times / some times go-1sg to school at feet
 ‘Sometimes I walk to school’
- b. Claudia ha visitato Tashkent sette / zero / ventun volte
 Claudia has visited Taskent seven / zero / twenty-one times
 ‘Claudia visited Tashkent seven / zero / twenty-one times’

⁴¹ From Lat. *māgis* ‘more, in a higher degree’. For Italian *più* ‘more’, see Section 9.16.

- c. *?Claudia non ha visitato Tashkent nessuna volta⁴²
 Claudia NEG has visited Taskent no time
 ‘Claudia never visited Tashkent’

value judgement Qs:

- d. Ho ripetuto questa storia molte / moltissime / parecchie /
 have-1sg repeated this story many / very many / several /
 troppe / abbastanza / poche volte
 too many / enough / few times
 ‘I repeated this story many / very many / several / too many / enough
 / few times’

interrogatives:

- e. Quante volte sei stato a Tashkent?
 how many times are-2sg been at Tashkent
 ‘How many times have you been in Tashkent?’
- f. *?Quale/i volta/e sei stato a Tashkent?⁴³
 which time/s are-2sg been at Tashkent
 ‘On which occasion(s) have you been in Tashkent?’

Alternative equivalents to *qualche volta*, still built on *volta/e*, are *a volte* ‘at times’ and *talvolta*⁴⁴:

- (24) A volte / Talvolta vado a scuola a piedi
 ‘Sometimes I walk to school’

9.3 Generalized Universal (Co-intersective) Quantifiers

9.3.1 Universal D-Quantifiers

There are three universal D-quantifiers, *tutto*,⁴⁵ *ogni*,⁴⁶ *ciascun(o)*⁴⁷:

- (25) a. Tutti i poeti sognano ad occhi aperti
 all the poets dream at eyes open
 ‘All poets daydream’

⁴² The sentence is fine if there is a presupposed set of occasions in which Claudia might have visited Tashkent, so that *nessuna volta* means ‘on none of those occasions’.

⁴³ As with *nessuna volta*, the sentence is fine if it means: ‘on which of those occasions?’.

⁴⁴ From Lat. *tāle(m)* ‘such’, hence literally, ‘such time’. However, already in Dante (early 14th C) *talvolta* has the modern meaning of ‘sometimes’.

⁴⁵ From Lat. *tōtus* ‘whole’, not the meaning it has in Italian.

⁴⁶ Lat. *omnis* ‘all, every’.

⁴⁷ From Lat. *quisque ūnus* ‘each one’.

- b. Ogni / Ciascuno studente del corso ha scritto una poesia
 every / each student of+the class has written a/one poem
 ‘Every / Each student in the class wrote a poem’
- c. Ogni uomo, donna e bambino ha lasciato la città
 every man, woman and child has left the city
 ‘Every man, woman and child left the city’

Tutto is very similar to English *all*, both in interpretation and syntax: it can float (see Section 9.12), precedes articles and demonstratives, can be preceded by *non* ‘not’ (see (65-a)) and combined with *tranne* + numeral ‘but + numeral’ (see (54)).

Both *ogni* and *ciascuno* have a distributive interpretation, but while *ogni* can fulfill this requirement taking scope over events, *ciascuno* must take scope over some quantified noun phrase or overt A-quantifier (see Longobardi 1988, pp. 693–695):

- (26) a. Ho presentato Maria a ogni avvocato della città
 have-1sg introduced Maria to every lawyer of+the city
 ‘I introduced Maria to every lawyer in town’
- b. ??Ho presentato Maria a ciascun avvocato della città (Longobardi 1988, ex. 195)
- c. ??Ciascun uomo, donna e bambino ha lasciato la città
- (27) a. ??Riceverò ciascun ministro dopo mezzogiorno
 receive-fut.1sg each minister after noon
 ‘I will receive each minister after noon’
- b. Riceverò ciascun ministro separatamente dopo mezzogiorno
 ‘I will separately receive each minister after noon’ (ibid., ex. 198)

Another Generalized Universal Q is *entrambi*⁴⁸ ‘both’. The interpretation of *ENTRAMBI*(A)(B) is still $A - B = \emptyset$ with the additional presupposition that $A \cap B$ has exactly two members. *Entrambi* is always followed by a definite determiner:

- (28) Entrambi i ministri si sono dimessi
 both the ministers SI are withdrawn
 ‘Both ministers resigned’

⁴⁸ Together with the synonym *ambidue*, which has the same syntactic properties, but is much less common.

9.3.2 Universal A-Quantifiers

In this category, there is one monomorphemic Q, *sempre* ‘always’:

- (29) a. Vado sempre a scuola a piedi
 go-1sg always to school at feet
 ‘I always walk to school’
- b. Davide si taglia sempre quando si rade
 Davide SI cuts always when SI shaves
 ‘Davide always cuts himself when he shaves’

Of the determiners discussed in Section 9.3.1, *ogni* and *tutte* combine with *volta/e* to form Universal A-Quantifiers, while *ciascuna* produces deviant results:

- (30) a. Vado (quasi) ogni volta / tutte le volte /*?ciascuna volta a
 go-1sg (almost) every time / all the times /each time to
 scuola a piedi
 school at feet
 ‘I walk to school (almost) every time / all the times’
- b. Davide si taglia (quasi) ogni volta / tutte le volte /*?ciascuna
 Davide SI cuts (almost) every time / all the times /each
 volta che si rade
 time that SI shaves
 ‘Davide cuts himself (almost) every time / all the times he shaves’

Note that, unlike *sempre*, with *tutte le volte* and *ogni volta* the restrictor must be overtly mentioned in the discourse: thus, (30-a), if taken out of context, feels incomplete, while this is not the case with (29-a) and with (30-b). In this, Universal A-Quantifiers are different from the Existential A-quantifiers presented in (23).

Also *entrambi* can be combined with *volte* to yield *entrambe le volte*, which is interpreted as referred to a presupposed set of exactly two specific occasions.

9.4 Proportional Quantification

9.4.1 Proportional D-Quantifiers

The only simplex proportional determiners are *metà* and *mezzo* ‘half’.

*Metà*⁴⁹ combines with count nouns, plural or singular, and with mass nouns, subject to the appropriate lexical choices:

⁴⁹ Invariant.

- (31) a. *Metà studenti non ha/hanno terminato il corso di studi*
 half students not have-3sg/3pl finished the course of studies
 ‘Half students did not complete the course of studies’
- b. *Metà molo è andato distrutto durante la tempesta*
 half pier is gone destroyed during the storm
 ‘Half of the pier was destroyed during the storm’
- c. *Il cestello rotante permette di utilizzare metà olio rispetto alle normali friggitrici*
 the basket rotating allows of use half oil compared to+the normal fryers
 ‘The rotating basket allows one to use half the oil of normal fryers’

The other simplex proportional determiner, *mezzo* ‘half’, combines with singular count nouns,⁵⁰ but not with plurals or mass nouns:

- (32) a. **Mezzi studenti non hanno terminato il corso di studi*
- b. *Mezzo molo è andato distrutto durante la tempesta*
- c. **Il cestello rotante permette di utilizzare mezzo olio*

Metà can take a definite *di*-phrase as the restrictor.⁵¹ In this case, it is optionally preceded by an article (definite or indefinite):

- (33) a. *(Una/La) metà dei genitori inglesi ammette di dire almeno una bugia al giorno ai figli*
 (a/the) half of+the parents English admits of say at least one lie at+the day to+the children
 ‘Half of the English parents admit they tell their children at least one lie a day’
- b. *Durante ogni lezione (la/una) metà del tempo è dedicata alla teoria*
 during every lesson (the/a) half of+the time is devoted at+the theory
 ‘During every lesson, half of the time is devoted to theory’

With the appropriate lexical choices, the restrictor can be a bare noun, and in this case *metà* must be preceded by the article:

⁵⁰ Agreeing in gender.

⁵¹ *Mezzo* is never used with a *di*-phrase: *(il/un) mezzo *di/?*del molo . . .*

- (34) a. Usate una metà di melone per fare la base degli stuzzichini
 use a half of melon to make the base of+the snacks
 ‘Use the half of a melon to make the base for the snacks’
- b. Mescolare il cioccolato con una metà di pasta e la vaniglia
 mix the chocolate with a half of dough and the vanilla
 con l’ altra metà
 with the other half
 ‘Mix the chocolate with half of the dough and the vanilla with the other half’

There is a subtle interpretive difference between *mezzo* and *metà*, the latter suggesting an object with some spatial integrity:

- (35) a. La tempesta ha distrutto metà paese
 the storm has destroyed half town
 ‘The storm destroyed half of the town’, meaning: one area was destroyed and another one was spared
- b. La tempesta ha distrutto mezzo paese
 meaning: half of the houses were destroyed, not necessarily in a circumscribed area

9.4.2 Proportional A-Quantifiers

Italian has one proportional simplex A-Quantifier, *spesso*⁵² ‘often’:

- (36) Sara va spesso a scuola in autobus
 Sara goes often to school in bus
 ‘Sara often rides the bus to school’

Other common proportional A-Quantifiers are derived from adjectives, either as P + Adj constructions or by means of the addition of the suffix *-mente*.

- frequente* → *di frequente, frequentemente* ‘frequently’
solito → *di solito, ?solitamente* ‘usually’
raro → *di rado, raramente* ‘rarely’
occasionale → **di occasionale, occasionalmente* ‘occasionally’
generale → *in generale, generalmente* ‘generally’

⁵² From Lat. *spissu(m)* ‘thick, dense’. *Spesso* survives as an adjective in modern Italian, preserving the original meaning it had in Latin.

- (37) a. Luca visita raramente / di rado i musei di domenica
 Luca visits rarely / of rare the museums of Sunday
 ‘Luca seldom / rarely visits museums on Sundays’
- b. Solitamente / Di solito / Generalmente / In generale i delinquenti
 usually / of usual / generally / in general the outlaws
 in fuga dalla polizia non si fermano per un caffè
 in escape from+the police not SI stop for a coffee
 ‘Usually / Generally outlaws fleeing the police don’t stop for coffee’

Of the two proportional D-quantifiers discussed in Section 9.4.1, only *metà* can combine with *volte*. Note that, unlike (31), the presence of *di*+Def.Art. is required:

- (38) Il consiglio ha approvato le mie proposte (la) metà *(delle) volte
 the board has approved the my proposals (the) half of+the times
 ‘The board approved my proposals half of the time’

9.5 Morphosyntactically Complex Quantifiers

9.5.1 Complex D-Quantifiers

Complex Qs can be derived from almost all the D-quantifiers seen so far.

9.5.1.1 Complex Cardinals

Among cardinals, *alcuni*, *qualche*, \emptyset and the ‘partitive article’ resist modification, while numerals can be combined with a wide array of modifiers, the most common being the following:

- (39) più di, meno di, quasi, appena, esattamente, giusto,
 more than, less than, almost, just, exactly, exactly/just,
 proprio, almeno, circa, più o meno, neanche,⁵³ nemmeno
 precisely, at least, about, more or less, not even, not even
- (40) a. Mimma aveva quasi / appena / circa / più o meno dodici gatti
 Mimma had almost / just / about / more or less twelve cats
 ‘Mimma had almost / just / about / more or less twelve cats’
- b. Non sono affondate neanche / nemmeno quattro barche
 NEG are sunk not even/ not even four boats
 ‘Not even four boats sank’

⁵³ *Neanche* and *nemmeno*, like all *n*-words, require the presence of the negative marker *non* if they occur in post-verbal position.

With modified numerals, the verb agrees in number with the numeral itself, as if no modification were there:

- (41) a. *Meno di due scimmie ballavano/*ballava sul tetto*
 less than two monkeys danced-impf.3pl/3sg on+the roof
 ‘Less than two monkeys were dancing on the roof’
- b. *Più di una scimmia ballava/*ballavano sul tetto*
 more than one/a monkey danced-impf.3sg/3pl on+the roof
 ‘More than one/a monkey was dancing on the roof’

Nessun(o) can be modified only by *quasi* ‘almost’, *proprio* ‘precisely’ and *praticamente* ‘practically’, while NPI *alcuno* (see (17-b)) cannot be modified at all⁵⁴:

- (42) a. *Non si è rotta quasi / proprio / praticamente nessuna bottiglia*
 NEG SI is broken almost / precisely / practically no bottle
 ‘Almost / Precisely / Practically no bottles got broken’
- b. **Il governo non ha emanato quasi / proprio /
 The government NEG has promulgated almost / precisely /
 praticamente alcuna direttiva*
 praticamente any direction
 ‘The government did not promulgate almost / precisely / practically
 any direction’

9.5.1.2 Modified Interrogative Qs

Quanto/i ‘how much/many’ can be modified by *esattamente* ‘exactly’, *circa* ‘about’ and *più o meno* ‘more or less’. The same modifiers used with *quale/i* ‘which’ yield odd results:

- (43) a. *Esattamente / Circa / Più o meno quanta birra hai*
 exactly / about / more or less how much beer have-2sg
 bevuto?
 drunk
 ‘How much beer did you drink exactly / more or less?’

⁵⁴ See discussion in Zanuttini (1991, pp. 116–117). There is however an interesting exception, abstract nouns:

- (i) *Non hai proprio alcun rispetto*
 NEG have-2sg precisely any respect
 ‘You don’t have any respect at all’

Note that these nouns are the only mass nouns allowed with *nessun(o)* (see (15)), discussed in Tovena (2001, 2003).

- b. ??Esattamente / *Circa / ??Più o meno⁵⁵ quale / che vino hai
 exactly / about / more or less which / which wine have-2sg
 scelto?
 chosen
 ‘Exactly which wine did you choose?’

9.5.1.3 Complex Value Judgement Qs

Most of the value judgement Qs seen in (20) admit some form of modification which is otherwise characteristic of adjectives. First, some of them can be intensified with the suffix *-issimo*, used to form superlative adjectives, as e.g. *buono* ‘good’, *buonissimo* ‘very good’:

- (44) a. moltissimi / tantissimi / numerosissimi / pochissimi criceti
 ‘very many / very few hamsters’
- b. *parecchissimi / troppissimi / diversissimi⁵⁶ / varissimi criceti

As an alternative to *-issimo*, superlative adjectives can be derived using the intensifier *molto*. Intensifier *molto*, unlike the value judgement Q *molto*, is invariant and does not agree with the noun, though the adjective does:

- (45) a. dei libri molto/*molti noiosi
 of+the-m.pl books-m.pl very-inv/very-m.pl boring-m.pl
 ‘very boring books’
- b. una storia molto/*molta strana
 a-f.sg story-f.sg very-inv/very-f.sg strange-f.sg
 ‘a very strange story’

Among value judgment Qs, only *poco* can be intensified by *molto*. Curiously, in this case *molto* can agree with the noun, even if it is an intensifier as in (45) and not a value judgement Q as in (20)⁵⁷:

⁵⁵ An intonation break at this point rescues these sentences, for in this case *esattamente* and the like function as sentential adverbs and not as modifiers of the QNP.

⁵⁶ When combined with the superlative suffix, *diversi* loses its quantificational meaning, and simply means ‘very different’. In this case it is normally found in post-nominal position.

⁵⁷ With respect to this phenomenon, there is a lot of individual variation. Some speakers firmly reject *molta poca N*, *molte poche N*, etc., while others accept them. A search on Google for some strings of the form *molto/a poca N* and *molto/e poche N* yielded the following results:

	Invariant <i>molto</i>	Agreeing <i>molta/e</i>
<i>poca gente</i> ‘few people’	494	331
<i>poca fiducia</i> ‘little trust’	162	200
<i>poca importanza</i> ‘little importance’	679	106
<i>poche persone</i> ‘few people’	282	586
<i>poche donne</i> ‘few women’	131	70

- (46) a. C' era molto/molta poca roba
 there was very-inv/f.sg little-f.sg stuff-f.sg
 'There was very little stuff'
- b. C' erano molto/molte poche persone
 there were very-inv/f.pl little-f.pl people-f.pl
 'There were very few people'

A very productive counterpart of *molto/i*+N is represented by complex expressions of the form:

- (47) *un/a* + N_1 + *di* + N_2

corresponding to English *a lot of* +N. N_1 is commonly *sacco* 'sack', *mucchio* 'heap', *casino*⁵⁸ 'whorehouse'. Other nouns are more or less creatively added to this list: *bordello* 'brothel', *sfracello* 'crash', *vagonata* 'wagonload' etc.:

- (48) Ho ricevuto un sacco / mucchio / casino di regali
 have-1sg received a sack / heap / whorehouse of presents
 'I received a lot of presents'

All these Qs are increasing: there is no quantifier of the form *un/a* + N_1 + *di* + N_2 meaning 'a small amount of'. It is interesting that even the expression *un po' di*, where *po'* is a reduced *poco* 'little' (which is itself decreasing), is definitely not decreasing; if anything, it is increasing. Thus, it behaves like English *a few*:

- (49) a. Un po' di studenti hanno superato l' esame con il massimo
 a little of students have passed the exam with the maximum
 dei voti
 of+the grades
 = (?) Un po' di studenti hanno superato l' esame
- b. Un po' di studenti hanno superato l' esame
 ≠ Un po' di studenti hanno superato l' esame con il massimo dei voti
- c. Pochi studenti hanno superato l' esame con il massimo dei voti
 ≠ Pochi studenti hanno superato l' esame
- d. Pochi studenti hanno superato l' esame
 = Pochi studenti hanno superato l' esame con il massimo dei voti

⁵⁸ Considered vulgar, but extremely common.

9.5.1.4 Modified Universal Qs

All the universal D-quantifiers seen in Section 9.3.1 can more or less successfully be modified by *praticamente*, *quasi* and *proprio*:

- (50) a. Praticamente / Quasi / Proprio tutti gli intervistati hanno dato
practically / almost / precisely all the interviewed have given
una risposta diversa
a answer different
'Practically / Almost / Precisely all the interviewed subjects gave a
different answer'
- b. Ho intenzione di fare ?praticamente / *quasi / proprio
have-1sg intention of do practically / almost / precisely
entrambe le cose
both the things
'I intend do to do precisely both things'
- c. In Sardegna, praticamente / quasi / ?proprio ogni paese ha un
In Sardinia, practically / almost / precisely every village has a
suo dialetto
its dialect
'In Sardinia, practically / almost / precisely every village has its own
dialect'
- d. Oggi ?praticamente / quasi / ?*proprio ciascuna regione ha una
today practically / almost / precisely each region has a
sua normativa in materia
own regulation in matter
'Nowadays practically / almost / precisely each region has its own
regulation on that matter'

9.5.1.5 Complex Proportional Qs

As discussed in Section 9.4.1, the only two simplex proportional Qs are *metà* and *mezzo* 'half', for there is no simplex Q corresponding to *most*. On the other hand, complex proportional Qs are common. Often, they are constructed with a prepositional phrase introduced by *di* 'of' as the restriction; the latter is generally a definite DP, generic or specific. Thus, they are in all respects partitive constructions:

- (51) a. La maggior parte / La ((stra)grande) maggioranza dei poeti
the greater part / the ((very)great) majority of+the poets
sogna ad occhi aperti
dreams at eyes open
'Most poets daydream'

- b. Il sessanta per cento degli adolescenti americani è / sono
 the sixty percent of+the teenagers American is / are
 sovrappeso
 overweight
 ‘Sixty percent of American teenagers are overweight’
- c. Il grosso degli spettatori era senza biglietto⁵⁹
 the big of+the spectators was without ticket
 ‘Most of the spectators did not have a ticket’

If the first D is indefinite, the *di*-phrase can lack the definite article:

- (52) a. Una maggioranza di poeti sogna ad occhi aperti
 a majority of poets dreams at eyes open
 ‘A majority of poets daydream’
- b. Un sessanta per cento di adolescenti americani è / sono sovrappeso
 a sixty percent of teenagers American is / are overweight
 ‘Sixty percent of American teenagers are overweight’

Other complex proportional Qs are those of the form *Numeral*₁+*N*+*su*+*Numeral*₂. Unlike English, *su* + *Numeral*₂ must follow the noun and cannot be adjoined to *Numeral*₁:

- (53) a. Sette poeti su dieci sognano ad occhi aperti
 seven poets on ten dream at eyes open
 ‘Seven out of ten poets daydream’
- b. ?*Sette su dieci poeti sognano ad occhi aperti
- c. Non un ??(solo) insegnante su dieci conosce la risposta
 not one teacher on ten knows the answer
 ‘Not one teacher in ten knows the answer’
- d. Nemmeno un insegnante su dieci . . .
 not even a teacher on ten

9.5.1.6 Exception Modifiers

Exception phrases are formed combining *tutti*, *nessun(o)* or, more marginally, *la maggior parte*, *la maggioranza* with expressions such as: *tranne* ‘but’, *eccetto* ‘except’, *meno* ‘less’, *a parte* ‘apart from’, *a eccezione di* ‘with the exception of’. The exception modifiers can very naturally be separated from the rest of the NP:

⁵⁹ Colloquial. It is only acceptable if definite: **Un grosso di spettatori . . .*

- (54) a. Tutti gli studenti tranne / eccetto / meno / a eccezione di / a parte
 All the students but / except / less / at exception of / apart
 Giorgio arrivano presto a lezione
 Giorgio arrive early to class
 ‘Every student but Giorgio comes to class early’
- b. Tutti gli studenti arrivano presto a lezione tranne / eccetto / meno / a
 eccezione di / a parte Giorgio
 ‘Every student comes to class early except Giorgio’
- c. Tranne / Eccetto / ??Meno / A eccezione di / A parte Giorgio, tutti gli
 studenti arrivano presto a lezione
 ‘Apart from Giorgio, every student comes to class early’
- (55) a. Nessuno studente tranne / eccetto / ?*meno / a eccezione di / a parte
 No student but / except / less / at exception of / apart
 Giorgio è andato via tardi
 Giorgio is gone away late
 ‘No student but Giorgio left late’
- b. Nessuno studente è andato via tardi tranne / eccetto / ?*meno / a
 eccezione di / a parte Giorgio
 ‘No student left late except Giorgio’
- c. Tranne / Eccetto / ?*Meno / A eccezione di / A parte Giorgio, nessuno
 studente è andato via tardi
 ‘Apart from Giorgio, no student left late’
- (56) a. La maggioranza delle lavastoviglie tranne / eccetto / ?*meno / a
 the majority of+the dishwashers but / except / less / at
 eccezione de- / a parte i modelli molto economici hanno la
 exception of- / apart the models very cheap have the
 partenza ritardata
 start delayed
 ‘Most dishwashers except very cheap models have a delayed start
 feature’
- b. La maggioranza delle lavastoviglie hanno la partenza ritardata
 the majority of+the dishwashers have the start delayed
 tranne / eccetto / ?*meno / a eccezione de- / a parte i modelli
 but / except / less / at exception of- / apart the models
 molto economici
 very cheap
 ‘Most dishwashers have a delayed start feature except very cheap
 models’

- c. Tranne / Eccetto / ?*Meno / A eccezione de- / A parte i modelli
 but / except / less / at exception of- / apart the models
 molto economici, la maggioranza delle lavastoviglie hanno la
 very cheap the majority of+the dishwashers have the
 partenza ritardata
 start delayed
 ‘Except for very cheap models, most dishwashers have a delayed start
 feature’

The exception modifier, when it is not separated from the NP by some intervening material, as in (54-b), or by a marked intonation break, as in (54-c), must occur at the rightmost end of the NP:

- (57) a. Tutti gli studenti del corso tranne due hanno superato l’ esame
 all the students of+the class but two have passed the exam
 ‘All but two students in the class passed the exam’
 b. *?Tutti tranne due gli studenti del corso . . .
 c. *?Tutti gli studenti tranne due del corso . . .

9.5.1.7 Boolean Compounds of D-Quantifiers

Italian can form Boolean compounds of determiners and quantifiers. Coordinating an increasing quantifier with a decreasing one is more felicitous if the conjunction is *ma* ‘but’ rather than *e* ‘and’, though violations to this generalization are often (near) grammatical. The requirement is even weaker when conjoining two QNPs rather than two Qs⁶⁰:

- (58) a. Almeno due ma / ?e / ?*o non più di dieci studenti riceveranno
 at least two but / and / or not more than ten students receive-fut
 una borsa il prossimo anno
 a scholarship the next year
 ‘At least two but/and/or not more than ten students will get
 scholarships next year’
 b. Molti ma / *e / *o non tutti i poeti dormono di pomeriggio
 many but / and / or not all the poets sleep of afternoon
 ‘Many but/and/or not all poets sleep in the afternoon’
 c. La maggior parte ma / *e / *o non tutti i gatti sono schizzinosi
 the main part but / and / or not all the cats are fastidious
 ‘Most but/and/or not all cats are fastidious’

⁶⁰ For a detailed discussion of conjunctions of QNPs with mixed monotonicity in Italian, see Delfitto (1986) and Acquaviva (1997).

- d. Né molti né pochi attori sono venuti alla festa
neither many nor few actors are come to+the party
'Neither many nor few actors came to the party'
- (59) a. Mi servono meno di quattro mucche ma / e / o più di
to-me serve-3pl less than four cows but / and / or more than
otto pecore
eight sheep
'I need less than four cows but/and/or more than eight sheep'
- b. Molti studenti ma / e / *o non tutti i professori sono venuti
many students but / and / or not all the teachers are come
alla festa
to+the party
'Many students but/and/or not every teacher came to the party'

It is also possible to conjoin the interrogative Qs *quanto/i* and *quale/i*:

- (60) a. Voglio sapere quante e / o / *ma quali monete sono
want-1sg know-inf how many and / or / but which coins are
scomparse
disappeared
'I want to know which and/or how many coins have disappeared'
- b. Voglio sapere quante tele e / o / *ma quali
want-1sg know-inf how many canvases and / or / but which
collezioni sono state danneggiate
collections are been damaged
'I want to know how many canvases and/or which collections have
been damaged'

Some Qs can be combined with the negation *non* to form overtly negated Qs, but there are various restrictions.

Cardinals cannot be overtly negated, though contrastive focus saves the structure:

- (61) a. *Mimma aveva non qualche gatto
'Mimma had not some cat'
- b. *Mimma aveva non alcuni gatti / dei gatti
'Mimma had not some cats / of+the cats'
- c. Mimma aveva non qualche gatto ma qualche cane
'Mimma had not some cat but some dog'
- d. Mimma aveva non QUALCHE gatto ma MOLTISSIMI gatti
Mimma had not some cat but very many cats
'Mimma had not SOME cat but VERY MANY cats'

- (62) a. *Mimma aveva non venticinque gatti
 ‘Mimma had not twenty-five cats’
 b. Mimma aveva non venticinque ma trenta gatti
 ‘Mimma had not twenty-five but thirty cats’
 c. Mimma aveva non venticinque gatti ma trenta
 ‘Mimma had not twenty-five but thirty cats’
 d. Mimma aveva non venticinque gatti, ma trenta cani
 ‘Mimma had not twenty-five cats, but thirty dogs’

Modified numerals can in some cases be overtly negated, but the negation seems to form a constituent with the modifier of the numeral rather than the whole modified numeral:

- (63) a. L’ intera serie costa non meno di / non più di / non solo /
 the entire series costs not less than / not more than / not only /
 non esattamente / non proprio mille euro
 not exactly / not just thousand euros
 b. *L’ intera serie costa non almeno / non circa / non più o meno/
 the entire series costs not at least / not about / not more or less /
 non nemmeno / non neanche mille euro
 not not even / not not even thousand euros
 ‘The entire series costs not . . . MODIFICATION . . . a thousand euros’

All value judgement Qs (see (20)) can be overtly negated, with the exception of *parecchio/i* ‘several’:

- (64) Ieri ho venduto non molti / tanti / *parecchi / troppi / abbastanza / pochi
 criceti
 ‘Yesterday I sold not many / several / too many / enough / few hamsters’

Among universal D-quantifiers, those introduced by *tutto/i* and *ogni* can be overtly negated, while those introduced by *ciascuno* and *entrambi* cannot. Compare (25) and (28) with (65):

- (65) a. Non tutti i poeti sognano ad occhi aperti
 ‘Not all poets daydream’
 b. Non ogni studente del corso ha scritto una poesia
 ‘Not every student in the class wrote a poem’
 c. *Non ciascuno studente del corso ha scritto una poesia
 ‘Not each student in the class wrote a poem’
 d. *Non entrambi i ministri si sono dimessi
 ‘Not both ministers resigned’

As for proportional D-quantifiers, they pattern with cardinals in allowing overt negation only in the presence of contrastive focus:

- (66) a. *Non il sessanta per cento degli adolescenti americani è / sono sovrappeso
 b. Non il SESSANTA, ma il SETTANTA per cento degli adolescenti americani è / sono sovrappeso
 ‘Not SIXTY, but SEVENTY percent of American teenagers are overweight’

In this section, it is worth noting a peculiar construction used to express universal quantification along with exact cardinality, namely *tutti e Numeral* ‘all and Numeral’:

- (67) a. Tutte e due / tre le mie sorelle sono in vacanza
 all and two / three the my sisters are in vacation
 ‘Both my / All my three sisters are on vacation’
 b. Tutti e centouno i dalmati rapiti sono stati recuperati
 all and hundred-one the Dalmatians kidnapped are been recovered
 ‘All hundred and one kidnapped Dalmatians have been recovered’

What is surprising about this construction is the coordination of two elements, *tutti* and the Numeral, that have different distributions and arguably belong to different syntactic categories (see Section 9.6). The distribution of *tutti e Numeral* is the same as that of simple *tutto/i*, i.e. it precedes definite determiners. Note also that, while numerals cannot normally float, they can float when coordinated with *tutti* (see Section 9.12).

9.5.1.8 Partitives

Partitives have the form $Q + di + NP_{def}$,⁶¹ where the restrictor NP_{def} determines a presupposed non-empty set of objects quantified over by Q. The quantifiers used in partitive constructions belong to all the three basic classes of Qs discussed in Sections 9.2.1, 9.3.1 and 9.4.1:

- (68) cardinals and modified cardinals:
 a. Alcuni / (quasi) ottanta degli studenti hanno superato l’ esame
 some / (almost) eighty of+the students have passed the exam
 ‘Some / (Almost) eighty of the students passed the exam’

⁶¹ The restrictor is most often plural, and only examples with a plural restrictor will be presented here. Note however that if the quantifier heading the construction can combine with mass nouns, the restrictor can be headed by a singular mass noun.

value judgement Qs:

- b. Molti / moltissimi dei clienti si sono lamentati
 many / very many of+the customers SI are complained
 ‘(Very) many customers complained’

interrogatives:

- c. Quanti / Quali di quegli studenti hanno superato l’ esame?
 how many / which of those students have passed the exam?
 ‘How many / Which of those students passed the exam?’

universal:

- d. Ciascuno dei partecipanti ha ricevuto un premio
 each of+the participants has received a prize
 ‘Each participant received a prize’

proportional:

- e. (La) metà / L’ ottanta per cento dei candidati si sono ritirati
 (the) half / the eighty percent of+the candidates SI are retired
 ‘Half / Eighty percent of the candidates renounced’

However, not all the quantifiers presented in Sections 9.2.1, 9.3.1 and 9.4.1 can be constructed with a *di*-phrase to yield a partitive:

- (69) a. *Qualche (OK: Qualcuno) dei miei amici non ha una barca
 some of+the my friends not has a boat
 ‘Some of my friends do not have a boat’
- b. *Ogni (OK: Ognuno) dei miei amici ha venduto il suo SUV
 every of+the my friends has sold the his/her SUV
 ‘Everyone of my friends sold their SUV’
- c. *Tutti dei miei amici detestano la birra
 all of+the my friends hate the beer
 ‘All of my friends hate beer’
- d. ??Mezza della torta si è bruciata
 half of+the cake SI is burnt
 ‘Half of the cake got burnt’

Note that the examples in (68) would be ungrammatical if the NP in the *di*-phrase were indefinite rather than definite:

- (70) *Alcuni/Ottanta di studenti, Molti/Moltissimi di clienti, Quali/Quanti di studenti, Ciascuno di partecipanti . . .

In this, partitives are different from the complex constructions of the type *un/a + N₁ + di + N₂* (see (47) and (48)), which admit both a definite and an indefinite restrictor:

- (71) a. Un po' di / degli studenti hanno copiato
 a little of / of+the students have copied
 'Some (of the) students cheated'
- b. Un sacco di / degli invitati era vestito di viola
 a sack of / of+the guests was dressed of purple
 'A lot of (the) guests were dressed in purple'

A curious partitive construction is formed with *parte* 'part' not preceded by any determiner or quantifier:

- (72) a. Parte delle / *di obiezioni sono ragionevoli
 part of+the / of objections are reasonable
 'Part of the objections are reasonable'
- b. Abbiamo cambiato parte dell' / *di equipaggio rispetto alla
 have-1pl changed part of+the / of crew compared to+the
 prima regata
 first regatta
 'We changed part of the crew compared to the first regatta'

What is surprising is that *parte*, being a count noun, should not appear 'bare' (cf. (4-b)). It is as if *parte* were functioning like *metà*, and in fact it has some of its properties. For example, the insertion of an indefinite article in the leftmost position makes the use of an indefinite *di*-phrase more acceptable, as with *metà*:

- (73) a. Una parte delle / di obiezioni sono ragionevoli
 b. Abbiamo cambiato una parte dell' / di equipaggio

Unlike *metà*, however, *parte* cannot be used as a determiner or quantifier preceding a N:

- (74) a. Metà / *Parte obiezioni sono ragionevoli
 Half / Part objections are reasonable
 'Half / Part of the objections are reasonable'
- b. Abbiamo cambiato metà / *parte equipaggio
 have-1pl changed half / part crew
 'We changed half / part of the crew'

9.5.2 Complex A-Quantifiers

9.5.2.1 Modified A-Quantifiers

As shown in Sections 9.2.2, 9.3.2 and 9.4.2, the only simplex A-quantifiers are *mai* ‘never’, *sempre* ‘always’ and *spesso* ‘often’, while others are productively formed combining *volte* ‘any’ with virtually any D-quantifier. These D-quantifiers can be modified as in Section 9.5.1, giving rise to A-quantifiers of various complexity:

- (75) a. Gilda è svenuta quasi / almeno / più o meno tre volte
 Gilda is fainted almost / at least / more or less three times
 ‘Gilda has fainted almost / at least / more or less three times’
- b. Ho incontrato Susy un sacco di volte
 have-3sg met Susy a sack of times
 ‘I met Susy a lot of times’
- c. Mi hanno rubato la bici tutte e due le volte
 to-me have-3sg stolen the bike all and two the times
 ‘My bike was stolen on both occasions’
- d. (Quasi) Il sessanta per cento delle volte / sei volte su dieci gli
 (almost) the sixty per cent of+the times / six times on ten the
 incidenti sono causati dall’ alcool
 accidents are caused from+the alcohol
 ‘Accidents are caused by alcohol (almost) sixty percent of the times /
 six times out of ten’

A-quantifiers can also be made more complex by adding a bounding phrase, as in the following example:

- (76) Maria fa il bucato due volte al giorno (per) quattro volte la
 Maria does the laundry two times at+the day for four times the
 settimana
 week
 ‘Maria does the laundry twice a day four days a week’

Since there is no simplex equivalent of *most*, there is no equivalent of *mostly* either. The closest analogue is formed combining *la maggior parte delle* or *il più delle* with *volte*, but the interpretation is not exactly that of *mostly*:

- (77) Le donne hanno votato la maggior parte / il più delle volte per
 the women have voted the greater part / the most of+the times for
 Reagan
 Reagan
 ‘Women voted most of the times for Reagan’
 meaning: the statement is about various elections

- (78) Le donne hanno votato in maggioranza / per lo più / nella maggior parte dei casi per Reagan
 the women have voted in majority / for the most / in+the greater part of+the cases for Reagan
 ‘Women mostly voted for Reagan’
 meaning: the statement is most likely about one single election

9.5.2.2 Boolean Compounds of A-Quantifiers

Naturally, A-quantifiers of the form *Q + volta/e* can be coordinated or overtly negated whenever the relevant *Q* can be. Simplex A-quantifiers can also be coordinated:

- (79) a. Giulia ha saltato le lezioni almeno due ma/e non più di
 Giulia has jumped the classes at least two but/and not more than
 cinque volte
 five times
 ‘Giulia has missed class at least twice but/and not more than five times’
- b. Alle elezioni presidenziali Silvia ha spesso ma/*e non sempre
 at+the elections presidential Silvia has often but/and not always
 votato per un democratico
 voted for a Democrat
 ‘In presidential elections Silvia has often but/and not always voted for a Democrat’

Of the three simplex A-quantifiers, *sempre* ‘always’ and *spesso* ‘often’ can be overtly negated.⁶² *Mai* ‘never’ cannot be overtly negated:

- (80) a. Non sempre vado a scuola a piedi
 not always go-1sg to school at feet
 ‘I not always walk to school’
- b. Non spesso capitano fortune simili
 not often happen lucks similar
 ‘Similar pieces of good fortune happen not often’
- c. *Non mai mangio pesce
 not never eat-1sg fish
 ‘I not never eat fish’

⁶² In this case they normally occupy the leftmost position.

9.6 The Categorial Status of D-Quantifiers

The NPs presented in Sections 9.2.1, 9.3.1 and 9.4.1 were in many cases described as being introduced by some simplex *determiner* or *quantifier*. However, when looking at the syntactic properties of these determiners or quantifiers, it becomes clear that they do not belong to a single syntactic category, say D or Q, but to (at least) three categories with different distributional properties. There is no obvious correspondence between syntactic category and semantic interpretation.

The first well-known distinct category is that of *tutto/i* (which comprises also *entrambi* ‘both’). Items belonging to this group have often been described as ‘pre-determiners’, for they occur before the definite article. Since they are somewhat ‘external’ to the NP, they can ‘float’ (see Section 9.12).

A second group consists of cardinals that have some adjective-like properties.⁶³ Numerals and most value judgement Qs belong in this group. The items in this class can occur as predicates (see Section 9.13) and can in some cases be intensified by means of typical adjectival morphology (see (44-a)). What is crucial, however, is their distribution: they can co-occur with a definite article, but, unlike *tutto/i*, they follow it; if a possessive adjective is also present, it can precede or follow the cardinal, the order Article–Cardinal–Possessive (examples (b) in (81)–(83) below) being more marked than the order Article–Possessive–Cardinal (examples (a)):

- (81) a. i miei tre amici
the my three friends
‘the three friends of mine’
b. i tre miei amici (Crisma 1991, ex. 150)
- (82) a. i suoi molti amici
the his/her many friends
‘his/her many friends’
b. i molti suoi amici (ibid., ex. 151)
- (83) a. le sue troppe follie
the his/her too many follies
‘his/her too many follies’
b. le troppe sue follie (ibid., ex. 152)

It is interesting that, when no article is present, the cardinal must precede the possessive, giving rise to systematic alternations:

⁶³ See Crisma (1991), Zamparelli (1995).

- (84) a. Tre miei amici sono venuti a trovarmi
 three my friends are come to visit+me
 ‘Three friends of mine came to visit me’
 b. *Miei tre amici sono venuti a trovarmi (ibid., ex. 149)

This pattern⁶⁴ suggests that cardinals are adjectives that can be ‘promoted’ to determiner status. This seems to be intuitive for value judgement Qs such as *diversi* ‘several’ (literally ‘different’) and *vari* ‘various’, but the syntactic behaviour just described may support the idea that this analysis should be extended to many other quantifiers.

The third and last group is formed by all the other quantifiers, that do not fit in either of these categories. They comprise all the items labelled *intrinsic quantifiers* in Longobardi (1988), namely those quantifiers that may have a plural interpretation though they are morphologically singular: *qualche* ‘some’, *ogni* ‘every’ and *ciascuno* ‘each’; in addition, *nessuno*, *alcuni* and NPI *alcuno* may belong in this group. The quantifiers in this group never co-occur with a definite article, unlike *tutto/i*, which is always followed by it, and the adjective-like cardinals, which are preceded by it if present.

II Selected Topics

9.7 Comparative Quantifiers

Comparative Qs are built from the following two-place adnominal quantifiers, which combine both with plural and mass nouns:

- (85) a. più X che Y ‘more X than Y’
 b. meno X che Y ‘fewer/less X than Y’
 c. tanto/i⁶⁵ X quanto/i Y ‘as many/much X as Y’
 d. cinque volte tanto/i X quanto/i Y ‘five times as many/much X as Y’

⁶⁴ Which extends to proportional *mezzo*:

- (i) a. Prendi la mia mezza torta
 take the my half cake
 ‘Take my half cake’
 b. ??Prendi mezza mia torta
 c. *Prendi mia mezza torta

⁶⁵ This *tanto/i* is morphologically identical to the value judgement Q presented in Section 9.2.1.3, but the interpretation here is not that of a large quantity.

Comparative Qs have the basic distribution of other NPs:

(86) Pre-V Subject:

- a. Più studenti che insegnanti sono venuti alla festa
 more students than teachers are come to+the party
 ‘More students than teachers came to the party’

Post-V Subject:

- b. Sono intervenuti almeno tanti studenti quanti insegnanti
 are participated at least many students as teachers
 ‘At least as many students as teachers participated’

Direct Object:

- c. Conosco più studenti che insegnanti
 know-1sg more students than teachers
 ‘I know more students than teachers’

Object of Preposition:

- d. Ho lavorato con più studenti che insegnanti
 have-1sg worked with more students than teachers
 ‘I have worked with more students than teachers’

Possessor:

- e. ?Sono state rubate le bici di tanti studenti quanti insegnanti
 are been stolen the bicycles of many students as teachers
 ‘As many students’ as teachers’ bicycles were stolen’

Raising to Subject:

- f. Più uomini che donne sembrano aver firmato la petizione
 more men than women seem have-inf signed the petition
 ‘More men than women seem to have signed the petition’

Passivization:

- g. Più studenti che insegnanti sono stati visti fumare
 more student than teachers are been seen smoke-inf
 ‘More students than teachers were seen smoking’

9.8 Type (2) Quantifiers

We have seen in Section 9.2.1.3 that *diversi* can function as a value judgement Q with the meaning of ‘several’. However *diversi*, when it occurs post-nominally, is an adjective meaning ‘different’. Together with analogous adjectives, as well as adjectives meaning ‘same’, it can be used to form Type (2) quantifiers of the type discussed in Keenan (1996), much in the same way as in English:

- (87) a. A persone diverse piacciono cose diverse
to people different please things different
'Different people like different things'
- b. Tutti gli studenti hanno risposto alle stesse domande
all the students have answered to+the same questions
'All the students answered the same questions on the exam'
- c. Ogni / Ciascuno studente ha risposto a una domanda differente
every / each student has answered to a question different
'Each student answered a different question on the exam'
- d. Studenti diversi hanno risposto a domande diverse
students different have answered to questions different
'Different students answered different questions'
- e. Gina e Pina vivono in villaggi confinanti (tra loro)
Gina and Pina live in villages neighboring (between them)
'Gina and Pina live in neighboring villages'
- f. Gina e Pina votano per partiti politici contrapposti
Gina and Pina vote for parties political rival
'Gina and Pina support rival political parties'
- g. Vivono in appartamenti diversi nello stesso stabile
live-3pl in apartments different in+the same building
'They live in different apartments in the same building'
- h. Gianni ha ballato con Maria ma nessun altro ha ballato con
Gianni has danced with Maria but no one else has danced with
nessun altro
no one else
'John danced with Mary but no one else danced with anyone else'
Moltmann (1996)
- i. Anna vede spesso lo stesso film più di una volta
Anna sees often the same movie more of one time
'Anna often sees the same movie more than once' Moltmann (1996)
- j. I dipinti andrebbero appesi in stanze diverse o su pareti
the paintings should-go hung in rooms separate or on walls
opposite nella stessa stanza
opposite in+the same room
'The paintings should be hung in separate rooms or on opposite walls
of the same room'
- k. Giurati diversi hanno tratto conclusioni diverse dalle stesse
jurors different have drawn conclusions different from+the same
prove
arguments
'The/Different jurors drew different conclusions from the same
arguments' Tyhurst (1989)

1. Tutti i partecipanti portavano una cravatta dello stesso colore
 all the participants wore a necktie of+the same color
 ‘All the participants wore the same color necktie’

Note that pre-nominal *diversi* does not force a binary quantifier interpretation, as shown by the fact that (88) does not have the same interpretation as (87-d):

- (88) Diversi studenti hanno risposto a diverse domande
 several students have answered to several questions
 ‘Several students answered several questions’

In the linguistic literature, Italian is reported not to admit multiple *wh*-questions (see for example Rizzi 1980, p. 51 and Calabrese 1984). However, I find the following example quite acceptable:

- (89) Quali studenti hanno risposto a quali domande?
 which students have answered to which questions
 ‘Which students answered which questions?’

A search on Google for the string *Chi ha detto cosa* ‘Who said what’ retrieved more than 8000 tokens. Thus, one must conclude that there are varieties/idiolects of Italian in which it is possible to form Type (2) quantifiers using two *wh*-NPs.

9.9 Distributive Numerals and Binomial *Each*

In Italian, there are no distributive numerals that translate as ‘2-each’, as existed in Latin:

- (90) Binae tunicae in militem exactae
 Two-each-nom tunics-nom in soldier-acc required-nom
 ‘Two tunics for each soldier were required’ (Liv. 9, 41, 7)

The distributive reading is expressed very much like in English, using *ciascuno*, which corresponds to binomial *each*, or the idiomatic expression *a testa* ‘apiece’ (literally: ‘at head’, limited to animates):

- (91) Ai militari erano richieste due tuniche ciascuno / a testa
 to+the soldiers were required two tunics each / apiece
 ‘Two tunics for each soldier were required’

Ciascuno agrees in gender with the NP it distributes over, but number is always singular:

- (92) Le mie nipoti hanno due fidanzati ciascuna/*ciascuno/*ciascune
 the my nieces-f.pl have two fiancés each-f.sg
 ‘My nieces have two fiancés each’

While *ciascuno* and *a testa* force a distributive reading, the collective reading is forced by expressions such as *in tutto* ‘in all’:

- (93) a. Gli assistenti hanno corretto 60 esami a testa
 the assistants have graded 60 exams at head
 ‘The assistants graded sixty exams apiece’
 b. Gli assistenti hanno corretto 60 esami in tutto
 the assistants have graded 60 exams in all
 ‘The assistants graded sixty exams between them’

9.10 Classifiers

In Italian, being a count or a mass noun is basically a lexical property of each noun. As we have seen in Sections 9.2.1, 9.3.1 and 9.4.1, most quantifiers combine with plural and mass nouns. While there is no quantifier that only combines with mass nouns (as English *much* or *little*), some are only used with count nouns (singular or plural):

- (94) only with singular count nouns:
 a. uno / qualche / ogni / ciascuno / nessuno⁶⁶ / mezzo
 one / some / every / each / no / half
only with plural count nouns:
 b. numerali / alcuni / numerosi / diversi / vari
 numerali / some / numerous / several / various

However, the quantifiers in (94) can combine with mass nouns preceded by some classifier-like expressions. The latter, normally count nouns, differ from the classifiers found in classifier languages such as Chinese only because of their limited number and use. They can be divided in three groups.

⁶⁶ But see (15) and (16).

Numeral Classifiers

Collective nouns normally behave like mass nouns, but the insertion of an overt classifier turns them into count expressions:

- (95) cento capi di bestiame / molti capi di abbigliamento / nove unità di
 hundred heads of cattle / many heads of clothing / nine units of
 personale
 personnel
 '100 head of cattle, many items of clothing, nine units of personnel'

In these examples, the nouns functioning as classifiers do not denote clearly recognizable entities, but the selection of the classifier is nonetheless severely restricted: *unità di bestiame* or *capi di personale* sound definitely odd. In other examples classifiers denote recognizable objects:

- (96) tre fogli di carta / sei chicchi di riso / due fili d'erba
 three sheets of paper / six grains of rice / two threads of grass
 'three sheets of paper, six grains of rice, two blades of grass'

Unclassified mass terms, when they are introduced by one of the quantifiers in (94), have a reading corresponding to either 'type of' (i.e. taxonomic) or 'portion of', the availability of which mostly depends on pragmatic factors:

- (97) a. Ho assaggiato diversi vini
 have-1sg tasted several wines
 'I tasted several wines'
- b. Al tavolo due hanno ordinato alcune minestre
 to+the table two have-3pl ordered some soups
 'Table 2 ordered some soups'
- c. In questo locale hanno più di 100 birre
 in this place have-3pl more than 100 beers
 'This place has more than 100 kinds of beer'
- d. Ho bevuto solo tre birre / qualche birra
 have-1sg drunk only three beers / some beer
 'I drank only three/some beers' (= three/some servings of beer, not necessarily of different kinds)
- e. Ogni vino è servito at una temperatura diversa
 Each wine is served at a temperature different
 'Each wine is served at a different temperature'
- f. Non abbiamo ordinato nessun caffè
 NEG have-1pl ordered no coffee
 'We did not order any coffee'

Container Expressions

Container expressions are always followed by a *di*-phrase. They tend to retain their literal meaning. In this they are more similar to (96) than to (95):

- (98) una bottiglia di vino / un cartone di latte / un piatto di pasta / una
 a bottle of wine / a carton of milk / a plate of pasta / a
 tazza di caffè
 little cup of coffee

However, they can be used to denote an abstract amount of the relevant stuff. Thus *un piatto di pasta* is still *un piatto di pasta* even if served on a banana leaf instead of a china dish.

Measure Phrases

Measure phrases, like container expressions, are followed by a *di*-phrase. They denote measures of weight, capacity or length. Italy uses the decimal metric system:

- (99) a. quattro chili di riso / mele
 four kilos of rice / apples
 b. due litri di latte
 two liters of milk
 c. quindici metri di corda
 fifteen meters of rope

Apart from these standard measures, there are a series of non-standard expressions: *spanna* ‘span = the maximum distance between the tips of the thumb and little finger’ and *braccio* ‘arm’ for length, *dito* ‘finger’ for drinkable liquids (measuring the height of the liquid in a glass or a bottle).

9.11 Existential Constructions

Existential sentences are constructed with the verb *essere* ‘to be’ preceded by the locative clitic *ci* ‘there’. The pivot agrees in person and number with *essere* and follows it. The presence of a locative XP is optional. Almost all the QNPs discussed in Sections 9.2.1, 9.3.1 and 9.4.1, together with complex and comparative quantifiers, can appear as pivots in existential constructions, with a couple of exceptions presented in (103) below:

(100) Existential Qs:

- a. C' è / era qualche / un gatto (sul letto)
there is / was some / a cat on+the bed
'There is/was some/a cat (on the bed)'
- b. Ci sono alcuni / dei / molti gatti (sul letto)
there are some / of+the / many cats on+the bed
'There are some/many cats (on the bed)'
- c. In questa stanza c' è troppa polvere
In this room there is too much dust
'There is too much dust in this room'

Universal Qs:

- d. Sullo scaffale ci sono tutti i tuoi libri
on+the shelf there are all the your books
'All your books are on the shelf'

Proportional Qs:

- e. In classe ci sono (la) metà degli studenti
in class there are the half of+the students
'Half of the students are in the class'

Complex and comparative Qs:

- f. In classe ci sono tutti gli studenti tranne Gianni
in class there are all the students but Gianni
'All students but Gianni are in the class'
- g. In spiaggia ci più donne che uomini
in beach there are more women than men
'On the beach there are more women than men'

Thus, in Italian there is no definiteness effect though the presence of a non-dislocated coda produces deviant results⁶⁷:

- (101) a. C' è Ferdinando / il postino
there is Ferdinando / the postman
'Ferdinando/The postman is here/there'
- b. C' è la statua di Michelangelo,⁶⁸ in Piazza della Signoria
there is the statue of Michelangelo in Piazza della Signoria
'What's in Piazza della Signoria is Michelangelo's statue'
- c. ??C' è la statua di Michelangelo in Piazza della Signoria
there is the statue of Michelangelo in Piazza della Signoria
'Michelangelo's statue is in Piazza della Signoria' (Leonetti 2008, ex. 13 a. and b.)

⁶⁷ For discussion, see Moro (1997), Pinto (1997), Leonetti (2008).

⁶⁸ The comma in these examples indicates a marked intonation break.

For this reason, various examples that are ungrammatical in English are grammatical in Italian:

- (102) a. In classe, non c' è la maggior parte degli studenti?
 in class NEG there is the greater part of+the students
 'Aren't most students in the class?'
 b. In classe, non ci sono tutti gli studenti?
 in class NEG there are all the students
 'Aren't all students in the class?'

There are however two quantifiers that are excluded from the pivot position of existential sentences, namely *ogni* 'every' and *ciascuno* 'each':

- (103) a. ??In classe c' è ogni studente
 in class there is every student
 'There is every student in the class'
 b. *In classe c' è ciascuno studente
 in class there is each student
 'There is each student in the class'

The ungrammaticality of (103) might be due to the fact that these two quantifiers are bound to a distributive interpretation (see Section 9.3.1), and in these sentences this requirement is not satisfied.

Negative existentials are constructed with the pre-verbal negative marker *non* preceding the locative clitic *ci*. The negative marker is the one which is also found in negative non-existential sentences. In the most common cases, a bare noun (plural or mass) appears in the pivot position:

- (104) Non ci sono \emptyset squali (in piscina)
 not there are \emptyset sharks (in swimming-pool)
 'There aren't any sharks (in the swimming pool)'

It is however possible for the subject of existentials to be introduced by *nessun(o)*.

- (105) Non c' è nessuno squalo in piscina
 not there is no shark in swimming-pool
 'There is no shark in the swimming pool'

Interrogative existentials differ from affirmative existentials only in intonation. Existential constructions are not used to express possession, whether inalienable or not.

9.12 Floating Quantifiers

With respect to the phenomenon of floating quantifiers, Italian is very similar to English. *Tutto/i* ‘all’ and *entrambi* ‘both’ can float:

- (106) a. Tutti gli studenti sono venuti alla festa
 all the students are come to+the party
 ‘All (of) the students came to the party’
 b. Gli studenti sono tutti venuti alla festa
 c. Gli studenti sono venuti tutti alla festa
 ‘The students all came to the party’
- (107) a. Entrambi i suoi genitori sono stati arrestati per truffa
 both the his/her parents are been arrested for fraud
 ‘Both his/her parents have been arrested for fraud’
 b. I suoi genitori sono entrambi stati arrestati per truffa
 c. I suoi genitori sono stati entrambi arrestati per truffa
 d. I suoi genitori sono stati arrestati entrambi per truffa
 ‘His/Her parents have been both arrested for fraud’

Other elements, such as numerals, cannot float:

- (108) a. Due suoi fratelli sono stati arrestati per truffa
 two his/her brothers are been arrested for fraud
 ‘Two brothers of his/hers have been arrested for fraud’
 b. *Suoi fratelli sono due stati arrestati per truffa
 c. *Suoi fratelli sono stati due arrestati per truffa
 d. *Suoi fratelli sono stati arrestati due per truffa

Note however that numerals coordinated with *tutti*⁶⁹ can float:

- (109) a. Tutti e cento i miei dalmati sono stati rapiti
 all and hundred the my Dalmatians are been kidnapped
 ‘All my hundred Dalmatian have been kidnapped’
 b. I miei dalmati sono stati tutti e cento rapiti
 c. I miei dalmati sono stati rapiti tutti e cento

⁶⁹ See (67).

9.13 Bare Qs as Predicates

Only numerals, value judgement Qs and some proportional Qs can naturally function as predicates:

- (110) a. I cani visibili in giardino sono sette / pochi / abbastanza
 the dogs visible in garden are seven / few / enough
 ‘The dogs visible in the garden are seven/few/enough’
- b. I personaggi riconoscibili in questa foto sono la metà / la
 the characters recognizable in this picture are the half / the
 maggioranza / sette su dieci
 majority / seven on ten
 ‘The characters recognizable in this picture are the half/the
 majority/seven in ten’

Alcuni, *qualche* and Universal Qs tend to be excluded, though some modification may in some cases improve the structure:

- (111) a. *Gli studenti che hanno passato l’ esame sono tutti / alcuni
 the students that have passed the exam are all / some
 ‘the students that have passed the exam are all / some’
- b. ?Gli studenti che hanno passato l’ esame sono quasi tutti / solo alcuni
 ‘the students that have passed the exam are almost all / only some’

9.14 Quantifiers as DPs

There are two different possibilities for a QNP to be constructed without a noun. First, there is a series of pronouns characterized either by the feature [+HUMAN] or by the feature [−ANIMATE].

In the first group we find pronouns built with the morpheme *-uno* ‘one’: *qualcuno* ‘someone’ and *ognuno* ‘everyone’, from *qualche* and *ogni* respectively, but also *nessuno* and *ciascuno*. As shown in Sections 9.2.1.1 and 9.3.1, the latter two items can combine with nouns to yield QNPs, and in this case they are not restricted to [+HUMAN] (see for example (14-a)). In the [−ANIMATE] group there are the existential *qualcosa*⁷⁰ ‘something’, the two *n*-words *niente* and *nulla* and the very formal NPI *alcunché*:

⁷⁰ Though *qualche* does not normally combine with mass nouns, as shown in (12-c), *qualcosa* can be used for a mass:

- (i) a. Ora ti spalmo qualcosa su quella ferita
 now to you spread-1sg something on that bruise
 ‘I’ll spread something on that bruise of yours’
- b. C’è qualcosa in quella bottiglia
 there is something in that bottle

- (112) [+HUMAN]
- a. Ho visto qualcuno
have-1sg seen somebody
'I have seen somebody'
 - b. Hai visto nessuno?
have-2sg seen nobody
'Have you seen anybody?'
 - c. Non ho visto nessuno
not have-1sg seen nobody
'I have seen nobody'
 - d. Ognuno ha detto la sua
everyone has said the his/her
'Everybody gave his/her opinion'
 - e. Ciascuno ha agito come meglio credeva
everyone has done as better thought
'Everyone did as he/she thought better'

[-ANIMATE]

- f. Ho visto qualcosa
Have-1sg seen something
'I have seen something'
- g. Hai visto niente/nulla?
have-1sg seen nothing
'Have you seen anything?'
- h. Non ho visto niente/nulla
NEG have-1sg seen nothing
'I have seen nothing'
- i. Non ha preteso alcunché
NEG has-3sg demanded anything
'He/She did not demand anything'

With pronominal *tutto/i*, plural number gives rise to [+HUMAN] interpretation, singular to [-ANIMATE] interpretation:

- (113) a. Tutti hanno diritto all' assistenza sanitaria
all-m.pl have right to+the assistance medical
'Everybody has a right to medical care'
- b. Ho sistemato tutto
have-1sg fixed all-m.sg
'I fixed everything'

In addition to these pronouns, many of the quantifiers seen in Sections 9.2.1, 9.3.1 and 9.4.1 admit the elision of the noun. In this case the determiner functions as a DP and there is no [\pm HUMAN] [\pm ANIMATE] restriction:

- (114) Come stanno andando i tuoi ultimi libri?
 how are going the your last books
 ‘How are things going with your last books?’

cardinals:

- a. Alcuni / (Quasi) trenta hanno venduto migliaia di copie
 some / (almost) thirty have sold thousands of copies
 ‘Some / (Almost) thirty sold thousands of copies’
- b. Nessuno ha venduto più di cinquanta copie
 no-one has sold more of fifty copies
 ‘No one sold more than fifty copies’

value judgement Qs:

- c. Molti / Moltissimi / ?Abbastanza / Pochi sono già esauriti
 many / very many / enough / few are already exhausted
 ‘(Very) many / Enough / Few are already sold out’

interrogatives:

- d. Quanti / Quali credi che siano davvero leggibili?
 how many / which think-2sg that are-sbjv really readable
 ‘How many / Which ones do you think are really readable?’

universal:

- e. Tutti stanno vendendo pochissimo
 all stay-3pl selling very little
 ‘All are selling very little’
- f. ?Ciascuno viene accolto in modo diverso
 each come-3sg received in way different
 ‘Each one is received in a different way’

proportional:

- g. (La) metà / L’ ottanta per cento sono stati molto criticati
 (the) half / the eighty percent are been very criticized
 ‘Half / Eighty percent were heavily criticized’

There seems to be a correlation between the possibility for a determiner to head a partitive construction (see (68)) and that of functioning as a DP: all the determiners that admit the former also admit the latter. Determiners that cannot head a partitive construction do not occur as DPs (see (69)):

- (115) *Qualche / *Ogni sono esauriti
 some / every are exhausted
 ‘Some / Everyone are sold out’

The correlation only goes in one direction: thus, though it is true that all the determiners that can head partitive constructions can also function as DPs, there is at least one element that can function as a DP but cannot head a partitive construction, *tutto/i*⁷¹:

- (116) *Tutti dei miei amici detestano la birra
 all of+the my friends hate the beer
 ‘All of my friends hate beer’

Tutto/i, however, is not a determiner, as discussed in Section 9.6: so, the elided constituent in cases like (114-e) is different from the elided constituent in all the other examples in (114).⁷²

One might venture the hypothesis that, when a determiner can function as a full DP, what is being elided is not the head noun but a *di* + NP_{def} constituent. This hypothesis seems to be supported by the fact that when the relevant NP occurs in post-verbal position (whether a post-verbal subject or an object), the elided element is obligatorily pronominalized by *ne*:

- (117) a. (Dei libri che aspettavo,) ne sono arrivati due
 of+the books that waited-1sg, NE are arrived two
 b. *(Dei libri che aspettavo,) sono arrivati due
 c. (Dei libri che aspettavo,) due sono arrivati
 ‘(Of the books that I was waiting for,) two have arrived’
 d. (Dei libri che mi hai consigliato,) ne ho
 of+the books that to-me have-2sg recommended, NE have-1sg
 comprati due
 bought two
 e. *(Dei libri che mi hai consigliato,) ho comprato/i due
 ‘Of the books that you recommended, I bought two’

However, this hypothesis clashes with the observation that it is not always the case that the elided constituent is interpreted as a definite DP:

- (118) a. Ci sono pinguini in giardino?
 there are penguins in garden
 ‘Are there penguins in the garden?’

⁷¹ *Entrambi* patterns with *tutto/i*.

⁷² As for examples as in (113), it is not even clear that something is being elided.

- b. Ne vedo due
 NE see-1sg two
 ‘I can see two’
 meaning: ‘I see two penguins’
 NOT: ‘I see two of the penguins’

If anything, the correlation is better accounted for the other way round, assuming that partitives have a structure like the following, which would explain why only determiners that admit the elision of the noun can head partitive constructions⁷³:

(119) Det + \emptyset + di + NP_{def}

9.15 Relation Between Lexical Universal, Existential and Interrogative Pronouns

The existential Q *qualche* is formed from the interrogative *quale*, see footnote 24. The same is true for the indefinite pronouns *qualcuno* ‘someone’, *qualcosa* ‘something’ discussed in Section 9.14. There are also two morphologically quite complex quantifiers derived from *quale*, namely *qualsiasi* and the much more formal *qualsivoglia*. They are quite transparently derived from reanalyzed sentences with impersonal *si*⁷⁴ and subjunctive verb forms (*sia* and *voglia*), and correspond to English free-choice *any*. In addition, free-choice items with universal quantificational force are formed from *quale* and other interrogative pronouns by means of a general morphological rule:

chi? ‘who’ → *chiunque* ‘whoever’
cosa? ‘what’ → **cosunque* ‘whatever’
che? ‘what’ → **cheunque*, but *checcché* ‘whatever’
dove? ‘where’ → *dovunque* ‘wherever’
come? ‘how’ → *comunque* ‘however’
quando? ‘when’ → **quandunque*⁷⁵ ‘whenever’
perché? ‘why’ → **percunque* ‘whyever’
quale? ‘which’ → *qualunque* ‘whichever, whatever’

⁷³ For a proposal in this sense, see Cardinaletti and Giusti (1991), Chierchia (1997). On the pronominalization with *ne* of the elided noun, see Rizzi (1982).

⁷⁴ See Burzio (1986, pp. 42–53).

⁷⁵ The form existed in old Italian (13–14th c. The label ‘Italian’ in this case is an abstraction, for various regional varieties are attested; the variety in the example is Tuscan):

- (i) Quandunque l’ una d’ este chiavi falla (Dante, *Purg.* IX 121)
 whenever the one of these keys fails
 ‘Whenever one of these keys fails’

Of all these items, only *qualsiasi*, *qualsivoglia*, and *qualunque* can be combined with a noun to form QNPs, the others are pronouns.⁷⁶

A free-choice A-Quantifier can be derived inserting interrogative *quale* (see (19)) between *ogni* and *volta*; the resulting *ogniqualevolta* is mostly used in formal registers:

- (120) L' assemblea è convocata ogniqualvolta il presidente lo ritenga
 the meeting is called whenever the president it deem-sbjv
 opportuno
 appropriate
 'The meeting is called whenever the president thinks it appropriate'

9.16 Decreasing NPs

Decreasing NPs can be built from all the three types of determiners discussed in Sections 9.2.1, 9.3.1 and 9.4.1:

(121) Existential:

- a. Nessuno studente è venuto alla conferenza
 no student is come to+the lecture
 'No students came to the lecture'
- b. Meno di cinque / Pochi studenti erano presenti
 less than five / Few students were present
 'Less than five / Few students were present'

Universal:

- c. Non tutti i bambini piangono tanto
 not all the children cry much
 'Not all children cry a lot'

Proportional:

- d. Meno di un quarto degli studenti ha superato l' esame
 less than one fourth of+the students has passed the exam
 'Less than a quarter of the students passed the exam'
- e. Non più di sette marinai su dieci fumavano
 not more than seven sailors on ten smoke
 'Not more than seven out of ten sailors smoke'

⁷⁶ There are in fact two distinct *qualsiasi/qualunque*: a quantifier corresponding to *whichever* (universal), and a pre- or post-nominal modifier cooccurring with indefinite determiners, roughly equivalent to *a N whatsoever* (existential). For details, see Chierchia (2006).

The capability of decreasing NPs to license negative polarity items depends on the choice of the decreasing NP and on that of the NPI.⁷⁷ *Alcun(o) + N*, introduced in Section 9.2.1.1, is licensed only by *n*-words, and not by other decreasing NPs⁷⁸:

- (122) a. Nessun consigliere ha presentato *alcuna* richiesta di
no delegate has presented any request of
rimborso
reimbursement
'No delegate applied for a reimbursement'
- b. Né Susi né Lisa hanno presentato *alcuna* richiesta di
neither Susi nor Lisa have presented any request of
rimborso
reimbursement
'Neither Susi nor Lisa applied for a reimbursement'
- c. *?Pochi / *Meno di cinque consiglieri hanno presentato *alcuna*
few / less than five delegates have presented any
richiesta di rimborso
request of reimbursement
'Few / Less than five delegates applied for a reimbursement'
- d. *?Non più di sette consiglieri su dieci hanno presentato *alcuna*
not more than seven delegates on ten have presented any
richiesta di rimborso
request of reimbursement
'Not more than seven delegates in ten applied for a reimbursement'

On the other hand, three adverbial NPIs, namely *più*⁷⁹ 'anymore', *mai*⁸⁰ 'ever' and *ancora*⁸¹ 'yet' can be licensed also by decreasing NPs:

⁷⁷ See also Acquaviva (1997, pp. 224–226).

⁷⁸ There is individual variation here, for example Zanuttini (1991) accepts:

- (i) Pochi capiscono alcunché di logica
few understand anything of logic
'Few people understand anything about logic' (Zanuttini 1991, p. 116)

but I find this sentence quite odd.

⁷⁹ Used also as a modifier of Qs (see Section 9.5.1) and to form comparative Qs (see Section 9.7).

⁸⁰ Which is also an Existential A-quantifier, see Section 9.2.2.

⁸¹ Adverbial *ancora* is otherwise interpreted as 'again, still, some more'.

- (123) a. Nessun cliente ha *più* presentato reclami
 no customer has more presented complaints
 ‘No customer has filed complaints anymore’
- b. Né Susi né Lisa hanno *più* presentato reclami
 neither Susi nor Lisa have more presented complaints
 ‘Neither Susi nor Lisa have filed complaints anymore’
- c. Pochi / ?Meno di cinque clienti hanno *più* presentato
 few / less than five customers have more presented
 reclami
 complaints
 ‘Few / Less than five customers have filed complaints anymore’
- d. Non più di sette clienti su dieci hanno *più* presentato
 not more than seven customers on ten have more presented
 reclami
 complaints
 ‘Not more than seven customers in ten have filed complaints
 anymore’
- (124) a. Nessun turista ha *mai* visitato queste rovine
 no tourist has ever visited these ruins
 ‘No tourist has ever visited these ruins’
- b. Né Susi né Lisa hanno *mai* visitato queste rovine
 neither Susi nor Lisa have ever visited these ruins
 ‘Neither Susi nor Lisa have ever visited these ruins’
- c. Pochi / ?Meno di cinque turisti hanno *mai* visitato queste rovine
 few / less than five tourists have ever visited these ruins
 ‘Few / Less than five tourists have ever visited these ruins’
- d. Non più di sette turisti su dieci hanno *mai* visitato queste
 not more than seven tourists on ten have ever visited these
 rovine
 ruins
 ‘Not more than seven tourists in ten have ever visited these ruins’
- (125) a. Susi è *ancora* andata in ferie
 Susi is ANCORA gone in leave of absence
 ‘Susi has again taken a leave of absence’
- b. Susi non è *ancora* andata in ferie
 Susi NEG is ANCORA gone in leave of absence
 ‘Susi has not taken a leave of absence yet’

- c. Nessuno è *ancora* andato in ferie
nobody is ANCORA gone in leave of absence
'Nobody has taken a leave of absence yet'
- d. Non tutti sono *ancora* andati in ferie
Not everybody are ANCORA gone in leave of absence
'Not everybody has taken a leave of absence yet'
- e. Meno di dieci impiegati sono *ancora* andati in ferie
less of ten employee are ANCORA gone in leave of absence
'Less than ten employee have taken a leave of absence yet'

In Italian there is a range of expressions of the form *un N* meaning 'nothing', with implied disappointment. These expressions, e.g. *un cavolo* 'a cabbage',⁸² *un fico secco* 'a dried fig', *un accidente* 'a mishap', are characteristic of a very informal register, and are licensed by *n*-words and, very marginally, by decreasing NPs:

- (126) a. Nessuno dei miei colleghi ha pubblicato un cavolo / un
none of+the my colleagues has published a cabbage / a
accidente l' anno scorso
mishap the year past
'None of my colleagues published a thing last year'
- b. ?*Pochi / Meno della metà dei miei colleghi hanno pubblicato
few / less of+the half of+the my colleagues have published
un cavolo / un accidente l' anno scorso
a cabbage / a mishap the year past
'Few / Less than half of my colleagues published anything last year'

9.17 Distribution

All the QNPs discussed so far can appear in all major grammatical functions, with the exception of 'bare nouns' (see (132)).

A. Pre-verbal subject⁸³:

- (127) a. Tutti i / Alcuni / Molti bambini hanno un gatto
all the / some / many children have a cat
'All the / Some / Many children have a cat'

⁸² A substitute for *un cazzo* 'a dick', considered quite offensive.

⁸³ Examples with transitive, intransitive and unaccusative verbs.

- b. Metà dei / Pochi / Parecchi / Dei bambini stanno dormendo
 half of+the / few / several / of+the children stay sleeping
 ‘Half of the / Few / Several / Some children are sleeping’
- c. Qualche / Ogni bambino è arrivato a casa⁸⁴
 Some / Every child is arrived to home
 ‘Some / Every child arrived home’

B. Post-verbal subject:

- (128) a. Hanno un gatto tutti i / alcuni / tre / molti bambini
 b. Stanno dormendo metà dei / pochi / parecchi / dei bambini
 c. È arrivato a casa qualche / ogni bambino

C. Object:

- (129) Sonia ha venduto due terzi dei / tutti i / otto / abbastanza / pochi
 Sonia has sold two thirds of+the / all the / eight / enough / few
 quadri
 paintings
 ‘Sonia has sold two thirds of+the / all the / eight / enough / few paintings’

D. Object of preposition:

- (130) a. Gina ha risposto a metà delle / tutte le / due / moltissime
 Gina has answered to half of+the / all the / two / very many
 domande
 questions
 ‘Gina answered half of+the / all the / two / very many questions’
- b. La biblioteca ha inviato un avviso a qualche / ciascuno / ogni
 The library has sent a notice to some / each / every
 studente
 student
 ‘The library sent a notice to some / each / every student(s)’

⁸⁴ With unaccusative (and some intransitive) verbs, indefinite QNPs in pre-V subject position receive an interpretation that is indistinguishable from that of their partitive counterparts: thus *Qualche bambino* in (127-c) actually means ‘Some of the children’.

E. Possessor⁸⁵:

- (131) a. La bici di metà dei / tutti i / tre / alcuni partecipanti è stata
 the bike of half of+the / all the / three / some participants is been
 sequestrata
 sequestered
 ‘Half of the/All the/Three/Some participants’ bikes were sequestered’
- b. Ho messo il compito di ciascuno / ogni studente in un
 Have-1sg put the paper of each / every student in a
 cassetto diverso
 drawer different
 ‘I put each/every student’s paper in a different drawer’
- c. I temi di due terzi degli / tutti gli / alcuni / parecchi /
 the essays of two thirds of+the / all the / some / several /
 moltissimi studenti sono orribili
 very many students are awful
 ‘The essays of two thirds of+the / all the / some / several / very many
 students are awful’ (= there are several essays for each students)
 OR: ‘The essay of two thirds of+the / all the / some / several / very
 many students is awful’ (= each student wrote one essay)
- d. I temi di qualche studente sono orribili
 the essays of some students are awful
 ‘The essays of some students are awful’ (= there are several essays
 for each students)
 NOT: ‘The essay of some students is awful’ (= each student wrote
 one essay)

Among the quantifiers discussed in Sections 9.2.1, 9.3.1 and 9.4.1, only ‘bare nouns’ present some systematic restriction in their distribution. They are normally excluded from the pre-verbal subject position unless modified, but are fine in post-verbal subject and object position (for analyses and discussion, see Delfitto and Schroten 1991, Longobardi 1994):

- (132) a. *Acqua viene giù dalle colline
 water comes down from+the hills
- b. Viene giù acqua dalle colline
 ‘Water is coming down from the hills’
- c. Ho preso acqua dalla sorgente
 have-1sg water from+the spring
 ‘I took water from the spring’ (Longobardi 1994, p. 616)

⁸⁵ Possessors could be considered as belonging in the previous group, for they are expressed by prepositional phrases introduced by the preposition *di*, unless they are pronominal.

As in English, overtly negated QNPs are sometimes better in subject than object position:

- (133) a. Non tutti gli studenti hanno risposto a tutte le domande
not all the students have answered to all the questions
'Not every student answered every question'
b. *Tutti gli studenti hanno risposto a non tutte le domande
'Every student answered not every question'

It is however possible to construct many examples in which an overtly negated QNP is extremely natural also in object position, in particular when the determiner is a value judgement Q or a numeral modified by *più di* 'more than' or *meno di* 'less than':

- (134) Tutti gli studenti hanno risposto a non poche / non più di sei domande
'All the students answered not few / not more than six question'

9.18 Scope Ambiguities

Two (or possibly more) QNPs may appear simultaneously as arguments of the same predicate. In some cases, and given the appropriate pragmatic conditions and the appropriate choice of quantifiers, this gives rise to scope ambiguities:

- (135) Un curatore ha letto ogni manoscritto
an editor has read every manuscript
'An editor read every manuscript'
SWS and OWS are both possible

The choice among the possible interpretations is conditioned by various factors, among which: the syntactic configuration (often marked by intonation), the lexical choices, the presence of items forcing one or the other reading, pragmatic factors. For this section, I heavily rely on Delfitto (1985) and Longobardi (1988), borrowing many examples from them.

Structural Prominence

The effect of the syntactic configuration is shown by the role played by structural prominence. Thus, subjects usually take scope over objects:

- (136) Tre professori hanno corretto 100 esami
three professors have graded 100 exams
'Three professors graded 100 exams'
The group reading and SWS are both very natural, while OWS is not accepted by all speakers

In passive sentences, the theme in subject position takes scope over the agent:

- (137) Due libri sono stati acquistati da molti studenti
 two books are been bought by many students
 ‘Two books have been bought by many students’
 SWS, i.e. Theme > Agent (Longobardi 1988, ex. 148-a)

However, subject position also matters: when a subject cooccurs with a prepositional complement, it takes wide scope when pre-verbal and narrow scope when post-verbal:

- (138) a. Tre clienti sono entrati in due negozi
 three customers are entered in two shop
 ‘Three customers entered two shops’
 Subj. > PP strongly preferred (with normal intonation, see
 Longobardi 1988, pp. 682–683)
- b. In due negozi sono entrati tre clienti
 PP > Subj. (Delfitto 1985, ex. 87)
- c. Sono entrati tre clienti, in due negozi
 PP > Subj. (Delfitto 1985, ex. 88)

Thus, if the subject of a passive sentence remains in its base position, it does not take scope over the agent, as shown by the contrast between (137) and (139):

- (139) Sono stati acquistati due libri da molti studenti
 SWS becomes unnatural, and Agent > Theme is strongly preferred

In double object constructions, there is no clear preference for the direct object (DO) to take scope over the indirect object (IO) or vice versa. Thus, when two QNPs of the same type occur in this construction, the result is a perfect ambiguity:

- (140) Ho assegnato quattro relazioni a due studentesse
 have-1sg assigned four essays to two students
 ‘I assigned four essays to two students’
 DOWS or IOWS (Longobardi 1988, ex. 132)

Items Forcing Wide or Narrow Scope

In a sentence like (136) the insertion of certain adverbials can force the group or the SWS reading⁸⁶:

⁸⁶ See Section 9.9.

- (141) a. Tre professori hanno corretto in tutto 100 esami
 three professors have graded in all 100 exams
 ‘Three professors graded 100 exams in total’
 Only group reading
- b. Tre professori hanno corretto 100 esami ciascuno / a testa
 three professors have graded 100 exams each / at head
 ‘Three professors graded 100 exams each’
 SWS with distributive reading

Also, certain modifications before numerals tend to favor or force narrow scope, despite subject or object function:

- (142) a. Almeno un curatore ha letto ogni manoscritto
 at least an/one editor has read every manuscript
 ‘At least one editor read every manuscript’
 OWS preferred reading, SWS still possible
- b. Ogni curatore ha letto almeno un manoscritto
 ‘Every editor read at least a/one manuscript’
 Only SWS
- (143) a. Ogni studente ha letto un dramma di Shakespeare durante le
 every student has read a play of Shakespeare during the
 vacanze
 vacations
 ‘Every student read a/one Shakespeare play over the vacation’
 SWS preferred, OWS possible
- b. Ogni studente ha letto almeno un dramma di Shakespeare
 every student has read at least a/one play of Shakespeare
 durante le vacanze
 during the vacations
 ‘Every student read at least a/one Shakespeare play over the vacation’
 Only SWS

Scope-Taking Properties of Different Quantifiers

Different choices of D-quantifiers lend themselves to different judgments of scope (non-)ambiguity even when they are otherwise near synonyms. The first interesting case is that of QNPs introduced by *alcuni*, *qualche*, \emptyset and the ‘partitive article’. When in object position, only *alcuni*+N can take scope over the subject; this possibility is very marginal for *qualche*+N and totally excluded for bare nouns or NPs introduced by the ‘partitive article’:

- (144) a. Tutti i / molti partecipanti hanno visitato alcuni monumenti
 all the / many participants have visited some monuments
 ‘All the / many participants visited some monuments’
 SWS and OWS both possible, with a preference for SWS
- b. Tutti i / molti partecipanti hanno visitato qualche monumento
 all the / many participants have visited some monument
 SWS largely preferred, OWS very marginally possible
- c. Tutti i / molti partecipanti hanno visitato dei monumenti
 all the / many participants have visited of+the monuments
 Only SWS
- d. Tutti i / molti partecipanti hanno visitato monumenti
 all the / many participants have visited monuments
 Only SWS

Also the three universal quantifiers *tutti*, *ogni* and *ciascuno* differ with respect to their scope-taking properties. *Ogni* takes wide scope more readily than *tutti*, thus if *tutti* is replaced by *ogni* in (144-a), the OWS interpretation becomes much less natural:

- (145) Ogni partecipante ha visitato alcuni monumenti
 every participant has visited some monuments
 ‘Every participant visited some monuments’
 SWS, but OWS can be forced by adding some extra specification to the object: *alcuni monumenti imperdibili, come il Colosseo e l’Ara Pacis* ‘some unmissable monuments, like the Colosseo and Ara Pacis’

The same effect is observable in object position:

- (146) a. Molti partecipanti hanno visitato tutti i monumenti
 ‘Many participants visited all the monuments’
 SWS largely preferred, OWS very marginally possible
- b. Molti partecipanti hanno visitato ogni monumento
 ‘Many participants visited every monument’
 SWS and OWS both possible

As discussed with respect to (26), *ciascuno* + N needs to take scope over some other quantifier. For this reason, it is very natural for it to take wide scope when in object position. However, the introduction of some A-quantifier over which *ciascuno* can take scope makes SWS perfectly acceptable:

- (147) a. Molti partecipanti hanno visitato ciascun monumento
 ‘Many participants visited each monument’
 Only OWS
- b. Molti partecipanti hanno visitato ciascun monumento tre volte
 ‘Many participants visited each monument three times’
 SWS and OWS both possible

In sum, (146) and (147) show that *ogni* and *ciascuno* in object function tend to take scope over a subject, while this is not the case with *tutti*. The same pattern is observed in wh-questions:

- (148) a. Quali studenti hanno risposto a tutte le domande?
 which students have answered to all the questions
 ‘Which student answered all the questions?’
 Only SWS
- b. Quali studenti hanno risposto a ogni domanda?
 which student has answered to every question
 ‘Which student answered every question?’
 SWS preferred (strongly for some speakers), OWS possible
- c. Quali studenti hanno risposto a ciascuna domanda?
 which student has answered to each question
 ‘Which student answered each question?’
 Only OWS (some speakers marginally accept SWS)
- (149) a. A quale domanda hanno risposto tutti gli studenti?
 to which question have answered all the students
 ‘Which question did all the students answer?’
 Only IOWS
- b. A quale domanda ha risposto ogni studente?
 to which question has answered every student
 ‘Which question did every student answer?’
 Both SWS and IOWS
- c. A quale domanda ha risposto ciascuno studente?
 to which question has answered each student
 ‘Which question did each student answer?’
 Only SWS

Analogous to English *all (the)*, *tutti* differs from *ogni* ‘every’ and *ciascuno* ‘each’ in allowing various sorts of collective or group level interpretations, whereas *ogni* and *ciascuno* are distributive in interpretation:

- (150) a. Sul tavolo c' era una foto di tutti gli studenti
 on+the table there was a picture of all the students
 'A picture of all the students was on the table'
 = possibly one picture with many students in it
- b. Sul tavolo c' era una foto di ogni / ciascuno studente
 on+the table there was a picture of every / each student
 'A picture of every/each student was on the table'
 = as many pictures as students
- (151) a. Tutti gli studenti si sono riuniti / incontrati ieri sera
 all the students SI are gathered / met yesterday night
 'All the students gathered/met last night'
- b. *Ogni / *Ciascun istruttore si è riunito / incontrato ieri
 every / each instructor SI is gathered / met yesterday
 sera
 night
 'Every/ Each instructor gathered/met last night'

What seems to be relevant for obtaining the collective or group interpretation is the plural number on the noun, as shown by similar effects observed with *qualche* vs. *alcuni*. Recall that *qualche*, *ogni* and *ciascuno* are all morphologically singular, though they are interpreted as plural:

- (152) a. *Ogni / *Qualche membro della banda si divide il bottino in
 every / some member of+the gang SI divided the loot in
 parti uguali
 parts equal
 'Every/some member of the gang divided the loot in equal shares
 among them'
- b. Tutti / Alcuni membri della banda si divisero il bottino in parti
 every / some member of+the gang SI divided the loot in parts
 uguali
 equal
 'All the / some members of the gang divided the loot in equal shares
 among them'
 (Longobardi 1988, ex. 73)

Recursively Embedded QNPs

Another case of scope ambiguity is represented by a QNP embedded in another QNP. In the most common cases, the embedded NP is introduced by the

preposition *di* ‘of’.⁸⁷ With non-deverbal nouns the *di*-phrase may have all sorts of relations with the entity denoted by the NP containing it, while with deverbal nouns it is sometimes natural to interpret *di*-phrases as the agent or the theme. In this case, as noted in Delfitto (1985), it is possible to detect a certain tendency for the agent to take wide scope over the whole NP, while this does not happen with PPs functioning as themes. Compare:

- (153) a. Due giudizi di due importanti critici sono stati duramente
two evaluations of two important critics are been hotly
contestati
contested
‘Two evaluations by two important critics have been hotly contested’
(Delfitto 1985, ex. 101)
the independent reading is the preferred one, but it is also possible
for the PP to take scope over the head it modifies: there are two
critics whose evaluations have been contested; the reverse (two
evaluations each formulated by two critics, not necessarily the
same ones) is excluded
- b. Tre vincitori di due premi letterari sono stati nominati senatori
three winners of two prizes literary are been appointed senators
‘Three winners of two literary prizes have been appointed senators’
(Delfitto 1985, ex. 99)
the PP takes narrow scope: there are three winners of two prizes
each that have been appointed senators; the independent reading
is also available

Interactions Between Nominal and Verbal Quantifiers

Scope ambiguities arise also when a QNP cooccurs with an A-quantifier. In this case there is no obvious preference for one or the other interpretation, as shown by the following sentences where both interpretations are equally natural:

- (154) a. Due ragazzi hanno cantato tre volte
two boys have sung three times
‘Two boys sang three times’
SWS: there are two boys who sang three times each
A-quant.WS: on three occasions there were two boys who sang
- b. Ho bocciato dieci studenti tre volte
have-1sg flunked ten students three times

⁸⁷ Recall that there is no possessive construction comparable to the *s*-genitive in English.

- c. Ho bocciato tre volte dieci studenti
 ‘I flunked ten students three times’
 OWS: there are ten students I flunked three times
 A-quant.WS: on three occasions I flunked ten (maybe different) students

As expected, the insertion of *ogni* forces wide scope:

- (155) a. Ho bocciato dieci studenti ogni volta
 A-quant.WS: on each occasion I flunked ten (maybe different) students
 b. Ho bocciato ogni studente dieci volte
 OWS: for each x , x a student, I flunked x ten times

Interaction with Sentential Negation

The negative marker *non* is another source of scope ambiguities, for it interacts with both subjects and objects.

The position of the subject relative to the verb matters: pre-verbal subjects take scope over the negation:

- (156) a. Delle studentesse non sono passate
 of+the female students not are passed
 ‘Some female students did not pass’
 $\exists > \neg$: there are some female students who did not pass
 b. Degli studenti non hanno completato la prova
 of+the students not have completed the test
 ‘Some students did not complete the test’
 $\exists > \neg$: there are some students who did not complete the test

As for post-verbal subjects, the choice of the determiner is crucial: the same determiners favouring OWS (see (144)) may enable post-verbal subjects to take scope over the negation:

- (157) a. Non sono passate alcune studentesse
 not are passed some female students
 ‘Some female students did not pass’
 $\exists > \neg$: there are some students who did not pass
 b. Non è passata qualche studentessa
 not is passed some female student
 $\exists > \neg$: there are some female students who did not pass

- c. Non sono passate delle studentesse
 not are passed of+the female students
 ambiguous:
 $\exists > \neg$: there are some female students who did not pass
 $\neg > \exists$: it is not the case that female students passed
- d. Non sono passate studentesse
 not are passed female students
 $\neg > \exists$: it is not the case that female students passed

Note the difference between OWS and scope over negation: *qualche*+N in object position can only very marginally take scope over the subject (see (144-b)), while post-verbal *qualche*+N always takes scope over the sentential negation (as in (157-b)). This suggests that *qualche* may be a Positive Polarity Item.⁸⁸

We have seen in (146) that another determiner that forces OWS is *ogni* ‘every’, so the expectation is that it should favor also SWS over negation. Examples with a post-verbal subject introduced by *ogni*, however, present an additional difficulty: *ogni* has a distributive interpretation, though, unlike *ciascuno*, it can distribute over events (see Section 9.3.1, ex. (26)). However, it appears that this is not possible from the post-verbal subject position, thus the result is odd unless some other material (event or quantifier) is provided. When this requirement is met, the subject introduced by *ogni* takes scope over negation, as expected. Again as expected, *tutti* does not take wide scope:

- (158) a. Non è passata ogni studentessa *(che ho interrogato
 not is passed every female student (that have-1sg questioned
 sui quantificatori)
 on+the quantifiers)
 $\forall > \neg$: for every x, x a female student (that I questioned on
 quantifiers), x did not pass
- b. Non sono passate tutte le studentesse
 not are passed all the female students
 $\neg > \forall$: it is not the case that all the female students passed

Another effect of negation is that it forces narrow scope of the object. Thus, even object NPs that naturally take scope over the subject in the absence of the pre-verbal negative marker (such as QNPs introduced by *alcuni*, see (144-a)) are forced to take narrow scope when the negation is there:

⁸⁸ See Zamparelli (2007) for discussion.

- (159) Tre studenti non hanno completato alcune prove
 Three students not have completed some tests
 $\exists 3 > \neg > \exists$: there are three students that did not complete some of the tests

The result is odd when the object is introduced by *ogni*, the more so when the subject is introduced by a modified numeral (which forces narrow scope, see (142)). The only possible way out is a passive construction, where the object introduced by *ogni* is ‘promoted’ to subject and can thus take scope both over the negation and the agent:

- (160) a. ??Tre studenti non hanno completato ogni prova
 Three students not have completed every test
 b. ?*Almeno tre studenti non hanno completato ogni prova
 at least three students not have completed every test
 c. Ogni prova non è stata completata da almeno tre studenti
 every test not is been completed by at least three students
 $\forall > \exists 3 > \neg$: for every x, x a test, there are at least 3 students that did not complete x

9.19 One to One Dependency

- (161) a. Per ogni goccia di pioggia cresce un fiore
 for every drop of rain grows a flower
 ‘For every drop of rain a flower grows’
 b. Ogni ghianda che abbiamo piantato si è trasformata in una
 every acorn that have-1pl planted SI is transformed in a
 grande quercia
 big oak
 ‘Every acorn we planted grew into a big oak tree’

9.20 Rate Phrases

Rate phrases are normally introduced by the preposition *a* ‘at’. Sometimes, however, it is acceptable to have *ogni* without a preposition or to have the rate phrase simply constructed with the definite article:

- (162) a. Quel treno viaggia a 400 chilometri (al)l’ ora
 that train travels at 400 kilometers (at+)the hour
 ‘That train is traveling at 400 kilometers per hour’

- b. Corro venti chilometri al / ogni giorno / *ciascun giorno
run-1sg twenty kilometers at+the / every day / each day
'I run twenty kilometers a day/every day'
- c. La mia gatta si lava il muso tre volte al giorno / ogni
the my cat SI washes the face three times at+the day / every
giorno / *ciascun giorno
day / each day
'My cat washes her face three times a day / every day'
- d. Il servizio clienti riceve circa 2000 reclami ogni /
the service customers receives about 2000 complaints every /
*ciascun / (al)l' anno
each / (at+)the year
'The customer service receives about 2000 complaints every year'

9.21 Only

There are three related invariant elements corresponding to 'only', *solo*, *soltanto* and *solamente*:

- (163) a. Solo / Soltanto / Solamente Alberto ha ricevuto un premio
only / only / only Alberto has received a prize
'Only Alberto got a prize'
- b. Solo / Soltanto / Solamente (gli) studenti hanno assistito alla
only / only / only (the) students have attended to+the
cerimonia
ceremony
'Only (the) students attended the ceremony'
- c. Solo / Soltanto / Solamente tre studenti hanno assistito alla cerimonia
'Only three students attended the ceremony'

The invariant forms normally occupy the leftmost position in the noun phrase. The same three elements can appear also as adverbs at the VP-level:

- (164) Alberto ha solo / soltanto / solamente cantato, non anche ballato
Alberto has only / only / only sung, NEG also danced
'Alberto only sang, he did not also dance'

Alongside invariant *solo* (and the derived forms *soltanto* and *solamente*), agreeing *solo* and *unico* can be used with the meaning of 'only'. In this use, they are limited to indefinite NPs introduced by a numeral and to definite NPs. The agreeing forms always follow the numeral if there is no definite article:

- (165) a. Ci sono tre sole proposte di riforma
 there are three only proposals of reform
 ‘There are only three proposals for a reform’
- b. *Ci sono sole tre proposte di riforma

If the definite article is also there, the numeral, if present, can precede or follow agreeing *solo*⁸⁹:

- (166) a. Nella iconografia sumerica le due uniche/sole divinità
 in+the iconography Sumerian the two only divinities
 femminili con appendici alari sono rappresentate da
 feminine with appendages wing-like are represented by
 ISH-TAR e LIL-IT
 ISH-TAR and LIL-IT
 ‘In Sumerian iconography the only two feminine divinities with
 wing-like appendages are ISH-TAR and LIL-IT’
- b. La giuria ha giudicato non colpevoli i soli tre imputati per
 the jury has judged not guilty the only three indicted for
 il delitto
 the crime
 ‘The jury has judged not guilty the only three accused of the crime’
- (167) I giovani hanno confessato di essere i soli / gli unici responsabili
 the youths have confessed of being the only / the single responsible
 della bravata
 of+the misdemeanor
 ‘The youths confessed to be the only ones responsible for the
 misdemeanor’

Both these elements can appear in post-nominal position, with a change in meaning: apart from some fixed formulas, the only possible interpretation for post-nominal *unico* is ‘unique, extraordinary’, while for post-nominal *solo* one of the possible, if not the preferred, interpretations is ‘alone’.⁹⁰

⁸⁹ This pattern is analogous to the one observed with numeral and possessives discussed in Section 9.6, and can probably be accounted for along the same lines.

⁹⁰ See Nespor (1988, p. 433) and Crisma (1991, p. 108).

9.22 Some Concluding Remarks

On the basis of the data presented, the following general observations can be made:

- In Italian there is one monomorphemic counterpart of English *all*, namely *tutto/i*. *Ogni* is also monomorphemic, while in *ciascuno* the morpheme *-uno* is recognizable, while *ciasc-* is no longer transparent.
- There is one monomorphemic ‘one’, *un(o)*, which is not distinct from the indefinite article.
- There are three monomorphemic value judgment Qs translating *many*: *molto/i*, *tanto/i* and *parecchio/i*. Note that, unlike *many*, they all combine with mass nouns alongside plurals. There is only one monomorphemic value judgment Q translating *few/little*, namely *poco/i*.
- *Nessuno*, the determiner translating *no*, is historically three-morphemic, see footnote 31, and the morpheme *-uno* is still recognizable.
- Italian distinguishes between a collective universal D-quantifier, *tutto/i*, and two distributive ones, *ogni* and *ciascuno*.
- A-quantifiers are usually morphosyntactically more complex than D-quantifiers, the only monomorphemic A-Quantifiers being *mai* ‘never’, *sempre* ‘always’ and *spesso* ‘often’.

Abbreviations

cond	Conditional
Def.Art.	Definite Article
fut	Future
impf	Imperfect
inf	Infinitive
NEG	Negation
sbjv	Subjunctive

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Chapter 10

Quantity Expressions in Japanese

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10.1 Preliminaries

Here we study quantification in Japanese addressing the questions raised in [Chapter 1](#), the Quantifier Questionnaire, of the present volume. Throughout we use the terminology introduced there without explanation. We begin with some basic facts about the Japanese language so that non-native speaker linguists can follow the discussion of quantity expressions effectively.

10.1.1 Word Order, Case-Markers, and Postpositions

Japanese is an SOV language, and nominal expressions that serve as arguments of verbs are normally accompanied by a case-marker. Some sentence patterns that correspond to the English intransitive, transitive, and ditransitive constructions are schematized in (1), (3), and (5), and exemplified by the sentences in (2), (4), and (6), respectively.^{1,2}

¹ Modal-like expressions such as *yooda* ‘it seems’, *sooda* ‘I heard’, *rasii* ‘it seems’, and *mitaida* ‘it seems’ are added to the sentences (within parentheses) to make the occurrences of *ga*-marked nominal expressions natural. Without such an expression, some people prefer to use the topic marker *wa* in place of *ga*.

² We use the following abbreviations: TOP = topic, NOM = nominative, ACC = accusative, DAT = dative, GEN = genitive, NEG = negation, COMP = complementizer, EMPH = emphazier, CL = classifier, Q = question, and P = particle. Where necessary, we rank the acceptability of a given sentence, using the following scale: (i) ‘ok’ or ‘.’ = acceptable; (ii) ‘?’ = slightly marginal; (iii) ‘??’ = marginal; (iv) ‘?*’ = very marginal; (v) ‘**’ = unacceptable.

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- (1) Corresponding to the English intransitive construction:
NP ga Verb
- (2) a. Kenta ga neta (yooda).
Kenta NOM slept seem
'(It seems that) Kenta fell asleep.'
b. Kaori ga naita (rasii).
Kaori NOM cried seem
'(It seems that) Kaori cried.'
- (3) Corresponding to the English transitive construction:
a. NP ga NP o Verb
b. NP ga NP ni Verb
c. NP ga NP to Verb
- (4) a. Taroo ga Jiroo o nagutta (sooda).
Taro NOM Jiro ACC hit heard
'(I heard that) Taro hit Jiro.'
b. Noriko ga Taroo ni aisatusita (yooda).
Noriko NOM Taro DAT greeted seem
'(It seems that) Noriko greeted Taro.'
c. John ga Mary to kekkonsita (rasii).
John NOM Mary with got:married seem
'(It seems that) John got married to Mary.'
- (5) Corresponding to the English ditransitive construction:
NP ga NP ni NP o Verb
- (6) a. Megumi ga Kimura sensei ni ronbun o okutta (rasii).
Megumi NOM Kimura teacher DAT paper ACC sent seem
'(It seems that) Megumi sent a paper to Prof. Kimura.'
b. Bill ga John ni Mary o syookaisita (mitaida).
Bill NOM John DAT Mary ACC introduced seem
'(It seems that) Bill introduced Mary to John.'

The orders of the arguments given in (3) and (5) are often said to be the base orders (cf. Hoji 1985, 2003b; Hayashishita 2000a). They may be altered to create a new construction or simply to satisfy preferences pertaining to discourse and stylistic factors. Sentences with a marked order are often referred to as derived by *scrambling*.³

The speaker often utters a sentence to assert that a certain object possesses a certain property (in Kuroda's 1992 terminology, he /she performs a categorical judgment as opposed to athetic judgment). In this situation, the object is

³ Their syntactic properties have been extensively examined; see Harada (1977), Saito (1985), Hoji (1985), Kuroda (1988), and Ueyama (1998, 2003), among others.

marked with the so-call topic marker *wa*; thus, we may not observe the constructions schematized in (1), (3), and (5) above as they are. For example, the first sentence in (7) makes use of the construction in (3a), and the second sentence in (8) the construction in (5).

- (7) Taroo wa Ziroom nagutta. Sikasi, Ziroom wa Taroo o
 Taro TOP Jiro ACC hit but Jiro TOP Taro ACC
 naguri-kaes-anak-tta.
 hit-return-NEG-PAST
 ‘Taro hit Jiro. But Jiro did not hit him back.’
- (8) A: John wa kinoo no paatii de dare ni deatta no ka naa.
 John TOP yesterday GEN party at who DAT met COMP Q EMPH
 ‘At yesterday’s party, who did John meet?’
- B: John ni wa Bill ga Mary o syookaisiteita yo.
 John DAT TOP Bill NOM Mary ACC introduced EMPH
 ‘To John, Bill was introducing Mary.’

It is worth noting that case-markers in Japanese are not necessarily the overt realization of the structural cases (i.e., nominative, accusative, dative, etc.).⁴ Although the marker *o* is often glossed as an accusative marker in the literature, it is sometimes attached to an item that is considered to be an adjunct; see (9).

- (9) a. Kareha ga kawa o nagareru.
 dead:leave NOM river ACC flow
 ‘Dead leaves flow on rivers.’
- b. (Based on Takai 2009:50 [100])
 Sono san-nenkan o kono ie de kurasita.
 that three-year:period ACC this house at lived
 ‘[We] lived in this house for those three years.’

Similarly, the particle *ga*, which is usually glossed as a nominative marker, often marks an item that does not have a thematic relation with a predicate (cf. Mikami 1959, 1960; Kuno 1973; Kuroda 1988); see (10).

- (10) (= Kuno 1973:71 [27c], slightly adapted)
 Bunmeikoku ga dansei ga heikinzyumyoo ga mizikai.
 civilized:country NOM male NOM average:life:span NOM short
 ‘It is civilized countries that men – their average life-span is short in.’

Japanese has other particles regarded as postpositions. Phrases consisting of a nominal expression and a postposition may appear at any position before the

⁴ The issue of how to characterize case-marking in Japanese is controversial. For example, Takezawa (1987) adheres to a structural view, and Saito (1983) assumes that *o* is the realization of structural Case but *ga* is not. Kuroda (1978), on the other hand, offers an account in terms of language-particular canonical case patterns.

verb in the clause in which they originate, provided that pragmatic factors are controlled. The sentences in (11), for example, make use of some of the postpositions listed in (12).

- (11) a. Tookyoo **kara** Oosaka **made** sinkansen **de** san-zika gurai
 Tokyo from Osaka until bullet:train with three-hour about
 kakaru.
 require
 ‘To go from Tokyo to Osaka by a bullet train requires about three hours.’
- b. Susan wa Jennifer **to** Taroo no ie **de** keeki o yaita.
 Susan TOP Jennifer with Taro GEN house at cake ACC baked
 ‘Susan baked a cake with Jennifer at Taro’s house.’
- (12) Partial list of postpositions:
kara ‘from’, *made* ‘to’, *de* ‘at, with’, *to* ‘with’, *e* ‘to’

Incidentally, given that case-markers in Japanese do not correspond to English structural cases, and that they behave similarly to postpositions in terms of the word order, one might reasonably argue that in Japanese the distinction between case-markers and postpositions is no more than an artifact.⁵

10.1.2 Nominal Expressions

In Japanese, nominal expressions can be used as a predicate. This is illustrated in (13).

- (13) Taroo ga kaitagatteiru no wa *kuruma* desu.
 Taro NOM want:to:buy COMP TOP car COPULA
 ‘What Taro wants to buy is a car.’

They can also denote an object, and when they do, they can give rise to a wide range of interpretations (cf. Kuroda 1965, 1992; Hoji 1998; Tomioka 2003). For example, the sentence in (14) may be translated as any of the English sentences in (15).

- (14) John ga *kuruma* o aratta (rasii).
 John NOM car ACC washed seem
 ‘(It seems that) John washed a car.’
- (15) a. John washed *a car*.
 b. John washed *cars*.
 c. John washed *the car*.

⁵ However, Kuroda (1978) maintains that *ga* and *o* must be treated differently from the other case-markers and postpositions.

- d. John washed *the cars*.
- e. John washed *his* (= *John's*) *car*.
- f. John washed *his* (= *John's*) *cars*.
- g. John washed *Bill's car*.
- h. John washed *Bill's cars*.

In other words, *kuruma* 'car' may correspond to an indefinite (i.e., (15a)), a bare plural (i.e., (15b)), a singular definite (i.e., (15c)), or a plural definite (i.e., (15d)). In the context where we are talking about one's own cars, it can be understood to mean John's car or John's cars (i.e., (15e) and (15f)). When someone else's car or cars is/are salient, say Bill's car or cars, it can be taken to mean Bill's car or cars (i.e., (15g) and (15h)). In addition, as illustrated in (16), nominal expressions can also express the generic meaning.

- (16) a. *Neko wa nezumi o oikakeru.*
 cat TOP mouse ACC chase
 'Cats chase mice.'
- b. *Nihonjin wa osusi ga sukida.*
 Japanese TOP sushi NOM like
 'Japanese people like sushi.'

In what follows, the terms *nominal expressions* and *noun phrases* (= NPs) are used interchangeably without any theoretical commitments.

Japanese does not morphologically distinguish between definite and indefinite or between singular and plural.⁶ Given that no lexical item corresponds to an indefinite or definite article, the fact that the mass and count distinction is not morphologically expressed is not surprising. This is illustrated in (17) and (18).

- (17) a. *Mary ga mizu o nonda.*
 Mary NOM water ACC drank
 'Mary drank water.'
- b. *Mary ga hon o yonda.*
 Mary NOM book ACC read
 'Mary read a book.'
- (18) a. *Mary wa kaminoke ga kireida.*
 Mary TOP hair NOM beautiful
 'Mary's hair is beautiful.'
- b. *Mary no suupu ni kaminoke ga haitteita.*
 Mary GEN soup in hair NOM entered
 'A hair was found in Mary's soup.'

⁶ The issue of whether or not Japanese has a plural-marker is controversial: although *NP-tati* and *NP-ra* necessarily denote a plural entity, *tati* and *ra* cannot be simply considered to be a plural-marker (cf. Kurafuji 1999, 2003; Nakanishi and Tomioka 2004).

Adjective phrases (= AdjPs) or verbal phrases (= VPs) may modify an NP with their appropriate inflection to create complex nominal expressions, as schematized in (19). Some examples are given in (20).

(19) [_{NP} AdjP /VP [_{NP}]]

- (20) a. [utukusii [zyosei]]
 beautiful woman
 ‘a beautiful woman’
 b. [kinbenna [gakusei]]
 diligent student
 ‘a diligent student’
 c. [togatta [naihu]]
 sharp knife
 ‘a sharp knife’
 d. [kinoo Taroo ga nakusita [tetyoo]]
 yesterday Taro NOM lost notebook
 ‘the notebook that Taro lost yesterday’

Other phrases can also modify an NP, but we need a linker *no* in between, which is often glossed as a genitive marker.⁷ Thus, the resulting phrase has the form in (21).

(21) [_{NP} X *no* [_{NP}]]

X in (21) can be an NP (e.g., (22a)), an adverbial phrase (= AdvP) (e.g., (22b)), or even a prepositional phrase (= PP) (e.g., (22c)).

- (22) a. [amerika no [kuruma]]
 America GEN car
 ‘an American car’
 b. [totuzen no [yuudati]]
 sudden GEN afternoon:shower
 ‘a sudden shower’
 c. [rosanzerusu e no [densya]]
 Los Angeles to GEN train
 ‘a train to Los Angeles’

⁷ It should be noted that the relation between the X and the NP in (21) may not be one only of modification but also of predication. For example, (i) can be understood to mean *the criminal's son* or [*someone's*] *son, who is a criminal*.

(i) [Hannin no [musuko]]
 criminal GEN SON

While we acknowledge that labeling something that expresses the predication relation as a genitive marker may not be appropriate, for simplicity's sake we will call *no* a genitive marker for both its modification and predication uses.

Since quantity expressions in Japanese can appear in the position of *X*, the form in (21) appears repeatedly when we discuss them below.

10.1.3 Classifiers and Measure, Container, and Time Phrases

In Japanese, when nominal expressions are modified with a number, the number is accompanied by a classifier. (Some classifiers may also be used as nouns. For simplicity's sake, we continue to label them as classifiers.) While there are (at least) two general classifiers that can be used for counting a wide range of objects, the other classifiers are designated to count specific types of objects. Here we provide partial lists of classifiers and examples to illustrate them; see (23)–(26). (See Iida 2004 for a more complete list.)

(23) Classifiers (for countable objects in general):

tu, ko

(24) a. *omame itu-tu*
bean five-CL
'five beans'

b. *omame san-ko*
bean three-CL
'three beans'

(25) Classifiers (for specific objects):

nin (for persons),⁸ *hiki/biki/piki* (for animals in general),⁹ *tou* (for cows and horses i.e., large animals), *wa* (for birds), *hon/bon/pon* (for long objects), *mai* (for sheets), *tubu* (for small round objects), *satu* (for books), *ken* (for houses), *dai* (for machines), *kumi* (for pairs/sets), *hako/pako* (for boxes), *hai/bai/pai* (for filled vessels)

(26) a. *gakusei go-nin*
student five-CL
'five students'

b. *buta san-biki*
pig three-CL
'three pigs'

c. *usi ni-too*
cow two-CL
'two cows'

⁸ For counting one and two persons, the different classifier form *ri* is used, e.g., *gakusei huta-ri* 'two students'.

⁹ /piki/ and /biki/ are allomorphs of /hiki/, whose distributions are phonologically determined. A similar remark applies to *hon/bon/pon*, *hako/pako*, and *hai/bai/pai* as well.

- d. niwatori go-wa
chicken five-CL
'five chickens'
- e. enpitu yon-hon
pencil four-CL
'four pencils'
- f. kami iti-mai
paper one-CL
'one sheet of paper'
- g. omame san-tubu
bean three-CL
'three beans'
- h. hon ni-satu
book two-CL
'two books'
- i. ie go-ken
house five-CL
'five houses'
- j. kuruma san-dai
car three-CL
'three cars'
- k. gakusei huta-kumi
student two-CL
'two pairs/sets of students'
- l. danbooru san-hako/pako
carton:box three-CL
'three carton boxes'
- m. baketu go-hai
bucket five-CL
'five filled buckets'

There are also classifiers that count events; see (27) and (28).

- (27) Classifiers (for events):
kai (for rounds), *do* (for rounds)
- (28) a. san-kai
three-CL
'three times'
- b. go-do
five-CL
'five times'

Like English, Japanese uses measure or container phrases to ‘count’ mass items. We provide a partial list of measure phrases in (29) and a few illustrations in (30).¹⁰

- (29) *rittoru* ‘liter’, *syoo* ‘1.8 liter’, *meeturu* ‘meter’, *kiroguramu* ‘kilogram’, *en* ‘Japanese yen’, *doru* ‘dollar’
- (30) a. *mizu ni-rittoru*
water two-liter
‘two liters of water’
b. *kin san-kiroguramu*
gold three-kilogram
‘three kilograms of gold’

To measure mass items with a container phrase, the container itself needs to be accompanied by an appropriate classifier, e.g., (26l) and (26m). If we measure beads and water in terms of carton boxes and buckets, respectively, we have (31a) and (31b).

- (31) a. *biizu danbooru go-hako*
bead carton:box five-CL
‘five carton boxes of beads’
b. *mizu baketu ni-hai*
water bucket two-CL
‘two buckets of water’

The list in (32) includes unit phrases for measuring time. A few illustrations are given in (33).

- (32) *byoo* ‘second’, *hun /pun* ‘minute’, *ka /nichi* ‘day’, *syuukan* ‘week’ *tuki* ‘month’ *nen* ‘year’
- (33) a. *zyuugo-byoo*
15-second
‘fifteen seconds’
b. *san-syuukan*
three-week
‘three weeks’
c. *mi-tuki*
three-month
‘three months’

¹⁰ The behavior of measure phrases is difficult to describe. Measure phrases can follow the object under measurement as in (30), and measure the object itself. But they can also follow a phrase describing the scale under discussion as in *omosa 3g* ‘(lit.) heaviness 3g’, *nagasa 3m* ‘(lit.) length 3m’, and *haikiryoou 3000cc* ‘displacement 3000cc’, and the resulting phrases can modify an NP as in *nagasa 3m no turizao* ‘a 3m fishing rod’ and *haikiryoou 3000cc no kuruma* ‘a 3000cc car.’

So far we have said nothing about the order among (i) a classifier phrase, (ii) the NP it modifies, and (iii) the rest of the sentence. Besides the word order exemplified by (26), (30), and (31), several other orders are possible, which we will discuss in Sections 10.2, 10.3, 10.4, and 10.8 below.

10.1.4 Demonstratives

Japanese demonstratives consist of *ko*-, *so*-, and *a*-words, as illustrated in (34) and (35).

(34) Simplex demonstratives:

<i>Ko</i> -words	<i>So</i> -words	<i>A</i> -words
<i>kore</i> ‘this thing’	<i>sore</i> ‘that thing’	<i>are</i> ‘that thing’
<i>koko</i> ‘this place’	<i>soko</i> ‘that place’	<i>asoko</i> ‘that place’
<i>kotira</i> ‘this direction’	<i>sotira</i> ‘that direction’	<i>atira</i> ‘that direction’
<i>koo</i> ‘in this way’	<i>soo</i> ‘in that way’	<i>aa</i> ‘in that way’

(35) Complex demonstratives:

<i>Ko</i> -words	<i>So</i> -words	<i>A</i> -words
<i>kono</i> NP ‘this NP’	<i>sono</i> NP ‘that NP’	<i>ano</i> NP ‘that NP’
<i>konna</i> NP ‘this kind of NP’	<i>sonna</i> NP ‘that kind of NP’	<i>anna</i> NP ‘that kind of NP’
<i>kooyuu</i> NP ‘NP as this’	<i>sooyuu</i> NP ‘NP as that’	<i>aayuu</i> NP ‘NP as that’
<i>kono yooni</i> ‘in this way’	<i>sono yooni</i> ‘in that way’	<i>ano yooni</i> ‘in that way’
<i>konna huuni</i> ‘in this way’	<i>sonna huuni</i> ‘in that way’	<i>anna huuni</i> ‘in that way’

In their deictic uses, *ko*-words are used to refer to an object that is within the speaker’s domain while *so*-words are used for an object within the hearer’s domain. To refer to objects that are neither in the speaker’s domain nor in the hearer’s domain, *a*-words must be used.¹¹ This is illustrated in (36)–(38). (We use # to indicate those sentences or phrases which are infelicitous in the specified contexts—they may be used felicitously in some other contexts.)

(36) [Context: the speaker talks to the hearer about the book that the speaker is holding in his hand.]

{*Kore* / #*Sore* / #*Are*} wa totemo omosiroi no desu.
 this that that TOP very interesting COMP COPULA
 ‘{This / That/ That} is very interesting.’

¹¹ This characterization was first presented in Sakuma (1951). While the characterization is useful for language education, it is known that it does not cover all the cases, and various alternatives have been developed by Mikami (1970), Kuno (1973), and Kinsui and Takubo (1990), among others.

- (37) [Context: the speaker talks to the hearer about the book that the hearer is holding in his hand.]

{#Kono / Sono/ #Ano} hon wa omosirokatta desyoo.
 this that that book TOP was:interesting isn't:it
 ‘{This/ That/ That} book was interesting, wasn't it?’

- (38) [Context: the speaker talks to the hearer about the book that someone else is holding in his hand.]

{#Konna / #Sonna / Anna} hon ga kaketa ra ii desu
 this:kind that:kind that:kind book NOM could:write if good COPULA
 ne.

EMPH

‘It would be good if [we] could write {this kind/ that kind/ that kind} of book, wouldn't it?’

Turning to their non-deictic uses, *a-* and *ko-*words are used to refer to an object which the speaker came to know through his or her personal experience; cf., Kuroda (1979), Takubo and Kinsui (1996, 1997), Ueyama (1998), Hoji et al. (2003). *So-*words, on the other hand, refer to a linguistic antecedent. Thus, the contrasts in (39) and (40) are expected.

- (39) (= Hoji et al. 2003 [12], based on Ueyama 1998:ch.4 [10] and [20], slightly adapted)

[Context: The detective is looking for a man. He believes that the man should be hiding in a certain room. He breaks into the room and asks the people there.]

{#Soitu / Aitu} wa doko da?
 that:guy / that:guy TOP where COPULA
 ‘Where is that guy?’

- (40) (= Hoji et al. 2003 [13], based on Ueyama 1998:ch.4 [16] and [23], slightly adapted)

[Context: A wife told her husband on the phone that someone had called him. He has no idea who the person is. He asks her.]

{Soitu / #Aitu} wa nante itteta?
 that:guy / that:guy TOP what said
 ‘What did that guy say?’

The difference between *ko-* and *a-*words is related to the speaker's perceived psychological distance from the referent. We, for example, observe the following contrasts.¹²

¹² Kuroda (1979) attempts to provide a unified characterization for both the deictic and non-deictic uses; his position is further investigated by Takubo and Kinsui (1996, 1997), and Hoji et al. (2003).

(41) (Based on Masuoka and Takubo 1989:148 [14])

A: *Dakara, uti no purozyekuto wa kanari zitugen no*
 therefore our GEN project TOP very realization GEN
kanousei ga detekiteiru no da.
 possibility NOM manifest COMP COPULA
 ‘Therefore, the possibility of our project being carried out is becoming high.’

B: {*Kono / #Ano*} *purozyekuto ni wa wareware mo sankadekiru*
 this that project DAT TOP we also can:participate
no desu ka.
 COMP COPULA Q
 ‘Can we also participate in {this/ that} project?’

(42) [Context: You happen to think about your old friend, John, whom you have not seen for a long time. You talk to yourself, saying ...]

{*#Kono / Ano*} *otoko wa genki ni siteiru ka na.*
 this that man TOP healthy DAT is:doing Q EMPH
 ‘Has {this/ that} man been doing fine?’

(43) (= Hoji et al. 2003 [31], slightly adapted)

a. [Context: The leader of the anti-government movement has called an underground meeting in order to designate the members who will put into action the plan of bombing the embassy, which they have been working on for a couple of weeks. Every member is waiting for him to speak. The leader begins the meeting by making the following statement.]

[{*Kono / #Ano*} *keikaku o saisyoni kangaedasita mono*] o
 this / that plan ACC first proposed person ACC
kondono taisikan bakuha keikaku no zikkoo sekininsya
 upcoming embassy bombing plan GEN execution leader
ni siyoo.
 DAT let:us:do

‘[I] nominate the person who first proposed {this/ that} plan to be the execution leader of the upcoming embassy bombing plan.’

b. [Context: After the failure of the bombing at the embassy ten years ago, the group of anti-government guerillas became too weak, and they have decided to dissolve their organization. No one dares to speak a word at the meeting, except the leader.]

[[#Kono / Ano} keikaku o saisyoni kangaedasita mono] ga
 this / that plan ACC first proposed person NOM
 zyuu-nen mae no taisikan bakuha keikaku no zikkoo
 10-year before GEN embassy bombing plan GEN execution
 sekininsya ni naru bekidatta.
 leader DAT become should:have
 ‘The person who first proposed {this/ that} plan should have become
 the execution leader of the embassy bombing plan ten years ago.’

10.1.5 Interrogatives

The inventory of the Japanese *wh*-words includes those that pattern with the demonstrative paradigms (i.e., (44) and (45)) and those that do not (i.e., (46)).¹³

(44) Those that pattern with simplex demonstratives:

- a. *dore* ‘which one’
- b. *doko* ‘where’
- c. *dotira* ‘which of the two’
- d. *doo* ‘in what way’

(45) Those that pattern with complex demonstratives:

- a. *dono* NP ‘which NP’
- b. *donna* NP ‘what kind of NP’
- c. *dooyuu* NP ‘what kind of NP’
- d. *dono yooni* ‘in what way’
- e. *donna huuni* ‘in what way’

- (46) a. *dare* ‘who’
 b. *itu* ‘when’
 c. *nani/nan* ‘what’
 d. *ikutu* ‘how many’
 e. *ikura* ‘how much’
 f. *nan* + classifier ‘how many’
 g. *naze/doosite* ‘why’

Unlike in English, in Japanese *wh*-words need not be fronted. This is illustrated in (47).

¹³ Some of them allow duplication—e.g., *doko doko ni itta no desuka* ‘where did you go?’; *dare dare ga kita no ka osiete kudasai* ‘please tell me who came?’ But their functions are complex, and are beyond the scope of this paper.

- (47) a. Kaori san wa Taro kun ni *nani* o agemasita ka.
 Kaori Miss TOP Taro Mr. DAT what ACC gave Q
 ‘What did Kaori give to Taro?’
- b. John wa kono ronbun o *doko* de happyoosimasita ka.
 John TOP this paper ACC where at presented Q
 ‘Where did John present this paper?’
- c. Eriko wa ano paatii ni *naze* ik-anak-atta to omoimasu
 Eriko TOP that party DAT why GO-NEG-PAST COMP think
 ka.
 Q
 ‘Why do you think that Eriko did not go to that party?’

Generative grammar has been concerned with whether or not Japanese *wh*-words undergo covert movement (cf. Lasnik and Saito 1984; Saito 1985; Nishigauchi 1986; Pesetsky 1987). Supporting the covert movement analysis is the generalization that the structural distance between a given *wh*-word and its associated question particle *ka* cannot be too far.¹⁴ (In some cases *ka* may not be phonologically realized.) Recently, however, Kubo (1989) and Deguchi and Kitagawa (2002) argue against this generalization, demonstrating that if a certain intonation contour is assigned to the unit starting from the *wh*-word through its associated question particle, the long-distance relation can be established.

A terminological remark: In referring to the items in (44)–(46), we used the term *wh-word*. This may not be appropriate for the following reasons. First, in questions, the items under discussion must co-occur with the question particle *ka*; so they do not by themselves function as interrogative words. Second, as we observe below, adding certain particles to them produces existential and universal quantifier analogues.¹⁵ For these reasons, Kuroda (1965) terms them *indeterminate pronouns* rather than *wh*-words. However, in an effort to reduce the amount of terminology, we will continue to call them *wh*-words below.

10.2 Existential (Intersective) Quantifiers and Related Issues

10.2.1 Type (1,1) Quantifier Analogues—D-Quantifiers

To express what English intersective D-quantifiers mean in Japanese, we may use one of the three patterns in (48), where QE stands for quantity expression and CM signifies a case-marker or a postposition.

¹⁴ Watanabe (1992) takes this to be the evidence for syntactic movement and assumes that what is moved is an empty operator rather than a *wh*-word itself.

¹⁵ See Onoe (1983) for the various uses of *wh*-words.

- (48) a. QE + *no* + NP + CM
 b. NP + QE + CM
 b. NP + CM + QE

As we observe below, their distribution is different. Thus, for any analysis of quantity expressions to be considered viable, the distributional difference ought to be accounted for.^{16,17}

The phrases that serve as a QE are partially listed in (49), and we provide a few illustrations in (50)–(51).¹⁸

- (49) a. Phrases consisting of (a modifier) + † + a classifier:
san-nin ‘three people’, *suu-sya* ‘a few companies’, *san-nin izyoo*
 ‘three or more people’ *sukunakutomo suu-sya* ‘at least a few
 companies’
 b. Phrases describing amount:
syoosuu ‘a small number’, *tasuu* ‘a large number’, *takusan* ‘many’
- (50) a. *San-nin no dansigakusei ga kita.* (Cf. (48a).)
 three-CL GEN male:student NOM came
 ‘Three male students came.’
 b. *Dansigakusei san-nin ga kita.* (Cf. (48b).)
 c. *Dansigakusei ga san-nin kita.* (Cf. (48c).)
- (51) a. *John wa sukunakutomo suu-satu no hon o yonda.*
 John TOP at:least several-CL GEN book ACC read
 ‘John read at least a few books.’ (Cf. (48a).)
 b. *John wa hon sukunakutomo suu-satu o yonda.* (Cf. (48b).)
 c. *John wa hon o sukunakutomo suu-satu yonda.* (Cf. (48c).)

As illustrated in (52) and (53), some items in (49b) are not compatible with the NP + QE + CM pattern (i.e., (48b)), though they seem to be with the other two patterns.

- (52) a. *John wa takusan no hon o yonda.* (Cf. (48a).)
 John TOP many GEN book ACC read
 ‘John read many books.’

¹⁶ There have been attempts to relate these three patterns via transformation; see Okutu (1969, 1983), Kamio (1983), Terada (1990), Kawashima (1998), Watanabe (2006), and Miyagawa and Arikawa (2007), among others.

¹⁷ As we see later, the QEs in (48a), (48b), and (48c) serve as quantifiers. In addition, in the (48a) pattern, they may function as denoting a property—e.g., *san-ko no ringo* can be translated into *three apples* or *a pack of three apples* (as opposed to *a pack of five apples*, for example).

¹⁸ Regarding which item can be used in which pattern, speakers’ responses may vary. We have observed variation especially with regard to the NP + QE + CM and NP + CM + QE patterns.

- b. ?*John wa *hon takusan o* yonda. (Cf. (48b).)
 c. John wa *hon o takusan* yonda. (Cf. (48c).)
- (53) a. *Syoosuu no zyoosigakusei ga* kita. (Cf. (48a).)
 small:number GEN female:student NOM came
 ‘A small number of female students came.’
 b. ?**Zyoosigakusei syoosuu ga* kita. (Cf. (48b).)
 c. ?*Zyoosigakusei ga syoosuu* kita. (Cf. (48c).)

The items that are not compatible with the NP + QE + CM pattern seem to be those that cannot occur as an argument of a verb independently. This is illustrated in (54).

- (54) a. {*San-nin / Sukunakutomo san-nin / San-nin izyoo*} o
 three-CL at:least three-CL three-CL equal:more ACC
 suisensita.
 recommended
 ‘[He] recommended {three/ at least three/ three or more}.’
 b. ?*{*Syoosuu / Takusan*} o suisensita.
 Small:number many ACC recommended
 ‘(Lit.) [He] recommended {small number/ many}’

There is another way to express what the English existential D-quantifier means; we can add the prefix *boo* ‘some’ or the nominal modifier *aru* ‘some’ to an NP as in (55). If, for example, the sentences in (56) are translated into English, the italicized parts can be rendered as *some actress* and *some male student*.

- (55) *boo*-NP ‘some NP’¹⁹, *aru* NP ‘some NP’
- (56) a. Yamada sensei wa ima *boo-zyoyuu* to ren’aisiteiru.
 Yamada teacher TOP now some-actress with be:in:love
 ‘Prof. Yamada is in love with some actress now.’
 b. *Aru dansigakusei ga* John to kenkasita.
 some male:student NOM John with fought
 ‘Some male student fought with John.’

In addition, we may construct existential quantifier analogues, using *wh*-words. Adding the particle *ka* to the *wh*-words in (57), we obtain the items in (58).

¹⁹ *Boo-NP* ‘some NP’ is different from the English expression *some NP* in that in uttering *boo-NP*, the speaker necessarily refers to a particular individual that he/she has in mind. As a consequence, the speaker gives the hearer the impression that he/she is unwilling to disclose the name of the individual about whom he/she is talking.

- (57) a. Among the items listed in (44):
dore ‘which one’, *doko* ‘where’, *dotira* ‘which of the two’
 b. Among the items listed in (46):
dare ‘who’, *nani* /*nan* ‘what’, *ikutu* ‘how many’, *ikura*
 ‘how much’, *nan* + classifier ‘how many’
- (58) a. *dore ka* ‘some of them’, *doko ka* ‘somewhere’, *dotira ka* ‘one of the two things/people’
 b. *dare ka* ‘someone’, *nani/nan ka* ‘something’, *ikutu ka* ‘a few things’, *ikura ka* ‘a few things’, *nan* + classifier *ka* ‘a few NP (where the NP is compatible with the classifier)’

Using some of the items in (58), we may, for example, construct sentences like those in (59).²⁰

- (59) a. *Dare ka ga kita mitaida.*
 who P NOM came seem
 ‘It seems that someone has come.’
 b. *John wa nani ka o katta.*
 John TOP what P ACC bought
 ‘John bought something.’
 c. *Ano otoko wa mada kono syuuhen no doko ka ni iru hazuda.*
 that man TOP still this fringe GEN where P at exist must
 ‘That man must still be somewhere near this area.’

We note, however, that the complex *wh*-words listed in (45) cannot be used to create existential quantifier analogues; see (60).

- (60) a. **Dono hito ka ga kita.*
 which person P NOM came
 b. **Mariko wa donna hon ka o yonda.*
 Mariko TOP what:kind book P ACC read

Existential quantifier analogues built from a *wh*-word may be used as the QE in the three patterns of (48), and the resulting unit as a whole also expresses what existential quantifiers mean. With the QE + *no* + NP + CM and NP +

²⁰ In English, when the speaker speaks about a referent that is known to him/her but not to the hearer, the use of an existential quantifier is appropriate; see (i).

(i) Since I need to meet some teacher, I will not be able to come to your place today.

By contrast, the existential quantifier analogues constructed with a *wh*-word in Japanese do not have this use—they are used to address a referent that the speaker does not know.

CM + QE patterns (i.e., (48a) and (48c)), all the items in (58) can be used,²¹ but with the NP + QE + CM pattern (i.e., (48b)), only some of them are usable. This is illustrated in (61)–(63).

- (61) a. *Nan-nin ka no gakusei ga kita.* (Cf. (48a).)
 how:many-CL P GEN student NOM came
 ‘A few students came.’
 b. *Gakusei nan-nin ka ga kita.* (Cf. (48b).)
 c. *Gakusei ga nan-nin ka kita.* (Cf. (48c).)
- (62) a. John wa matteiru aida ni *nan-satu ka no manga*
 John TOP waiting period in how:many-CL P GEN comic:book
o yonda.
 ACC read
 ‘John read a few comic books while he was waiting.’ (Cf. (48a).)
 b. John wa matteiru aida ni *manga nan-satu ka o yonda.* (Cf. (48b).)
 c. John wa matteiru aida ni *manga o nan-satu ka yonda.* (Cf. (48c).)
- (63) a. John wa matteiru aida ni *nani ka no manga o*
 John TOP waiting period in what P GEN comic:book ACC
yonda.
 read
 ‘John read some comic book while he was waiting.’ (Cf. (48a).)
 b. ?*John wa matteiru aida ni *manga nani ka o yonda.* (Cf. (48b).)
 c. John wa matteiru aida ni *manga o nani ka yonda.* (Cf. (48c).)

²¹ One exception is *dare ka* ‘someone’. When *dare ka* is used as the QE of the QE + no + NP + CM pattern, the resulting unit becomes no longer an existential quantifier analogue; see (i).

- (i) *Dare ka no gakusei ga kita.*
 who P GEN student NOM came
 ‘Someone’s student came.’

Incidentally, any existential quantifier analogues built from a *wh*-word (including *dare ka* ‘someone’) can be followed by the NP + CM unit, and the resulting unit as a whole expresses what existential quantifiers mean; see (ii).

- (ii) *Dare ka gakusei ga kita.*
 who P student NOM came
 ‘Some student came.’

One might wonder if the pattern exemplified by (ii) is a variation of the NP + QE + CM pattern (i.e., (48b)) or the NP + CM + QE pattern (i.e., (48c)). While this is a reasonable assumption, there is a fact indicating otherwise—as pointed out by Kamio (1973) and Okutu (1985), we can find situations where the pattern illustrated in (ii) is acceptable while the NP + QE + CM and NP + CM + QE patterns are not; see (iii) against (iv).

- (iii) *Dare ka siranai hito kara tegami ga kita.*
 who P not:know person from letter NOM came
 ‘A letter came from someone we do not know.’
- (iv) a. **Siranai hito dare ka kara tegami ga kita.*
 b. **Siranai hito kara dare ka tegami ga kita.*

10.2.2 Type (1,1) Quantifier Analogues—A-Quantifiers

We now turn to intersective A-quantifier analogues. The adverbial expressions in (64) are comparable to intersective A-quantifiers in English.

- (64) a. Phrases consisting of 𠄎 + a classifier:
suu-kai ‘a few times’, *san-do* ‘three times’
 b. Phrases describing frequency:
tokidoki ‘sometimes’, *sibasiba* ‘often’

Using some of them, we can, for example, construct the sentences in (65).

- (65) a. Taroo wa *suu-kai* Hanako to deetosita.
 Taro TOP several-CL Hanako with dated
 ‘Taro went out with Hanako a few times.’
 b. Mary wa *tokidoki* keeki o yaku.
 Mary TOP sometimes cake ACC bake
 ‘Mary sometimes bakes cakes.’

Existential A-quantifier analogues can also be built from a *wh*-word. For example, adding the particle *ka* to *nan-kai* ‘how many times’ and *nan-do* ‘how many times’, we obtain the items in (66); see (67).

- (66) *nan-kai ka* ‘a few times’, *nan-do ka* ‘a few times’
 (67) a. Mary wa *nan-kai ka* keeki o yaita.
 Mary TOP what-CL P cake ACC baked
 ‘Mary baked cakes a few times.’
 b. Susan wa *nan-do ka* Bill ni iiyotta.
 Susan TOP what-CL P Bill DAT approached
 ‘Susan approached Bill a few times’

10.2.3 Compound QEs with Boolean Connectives

In English, complex intersective quantifiers can be built with Boolean connectives productively, e.g., *not more than ten students* and *at least two but not more than five students*. Since the negation in Japanese does not combine with a QE or an NP, we do not observe many instances of compound QEs. For example, we have no way to express what *neither A nor B* means with an NP by itself.

One case we have thus far discovered is one in which QEs are combined with an item expressing disjunction; see the sentences in (68), for example.

- (68) a. *San-nin {ka / mosikuwa / matawa} yo-nin no gakusei ga*
 three-CL or or or four-CL GEN student NOM
kuru daroo.
 come likely
 ‘Probably, three or four students come.’ (Cf. (48a).)

- b. *Gakusei san-nin {ka / mosikuwa / matawa} yo-nin ga kuru daroo.*
(Cf. (48b).)
- c. *Gakusei ga san-nin {ka / mosikuwa / matawa} yo-nin kuru daroo.*
(Cf. (48c).)

We can also build phrases that correspond to the English expression *at least two but not more than five students*, using an item expressing conjunction; see (69) and (70).

- (69) a. *Sukunakutomo huta-ri sikasi go-nin miman no gakusei o*
at:least two-CL but five-CL below GEN student ACC
suisensuru koto ni natta.
recommend COMP DAT became
‘It has been decided that [we] will recommend at least two but not more than five students.’ (Cf. (48a).)
- b. *Gakusei sukunakutomo huta-ri sikasi go-nin miman o suisensuru koto ni natta.* (Cf. (48b).)
- c. *Gakusei o sukunakutomo huta-ri sikasi go-nin miman suisensuru koto ni natta.* (Cf. (48c).)
- (70) a. *Huta-ri izyoo katu go-nin ika no gakusei o*
two-CL equal:more and five-CL equal:less GEN student ACC
erab-anakerebanaranai.
choose-must
‘[We] must choose two or more but five or less students.’ (Cf. (48a).)
- b. *Gakusei huta-ri izyoo katu go-nin ika o erab-anakerebanaranai.*
(Cf. (48b).)
- c. *Gakusei o huta-ri izyoo katu go-nin ika erab-anakerebanaranai.*
(Cf. (48c).)

Incidentally, even if the item expressing conjunction *katu* ‘and’ is eliminated from the sentences in (70), the resulting sentences express the meanings of the original ones; see the sentences in (71).

- (71) a. *Huta-ri izyoo go-nin ika no gakusei o*
two-CL equal:more five-CL equal:less GEN student ACC
erab-anakerebanaranai.
choose-must
‘[We] must choose two or more but five or less students.’ (Cf. (48a).)
- b. *Gakusei huta-ri izyoo go-nin ika o erab-anakerebanaranai.* (Cf. (48b).)
- c. *Gakusei o huta-ri izyoo go-nin ika erab-anakerebanaranai.* (Cf. (48c).)

10.2.4 Existential Sentences

In Japanese, there seems to be no special construction that is appositely used for existential sentences. When we express what the English existential sentence means, we may use the construction in (72), where *iru* is used for animate objects, and *aru* for inanimate objects. This is illustrated in (73).

- (72) B {*ni* / *ni wa*} A *ga iru* / *aru*, where B is a location, and A is the existing object.
- (73) a. Kyoositu {*ni* / *ni wa*} *gakusei ga iru*.
classroom in in TOP student NOM exist
'There are students in the classroom.'
b. Kono heya {*ni* / *ni wa*} *kuroi tukue ga aru*.
this room in in TOP black desk NOM exist
'There is a black desk in this room.'

Some researchers assume (74a) instead of (74b) to be the base order for (72), and claim that the existential construction is 'special' with respect to the word order (cf. Kuno 1971; Takezawa 1987).

- (74) a. B *ni* A *ga iru* / *aru*
b. A *ga* B *ni iru* / *aru*

However, given that the word order is relatively free in Japanese, it is difficult to examine this claim.

In Japanese, we do not observe the definite/indefinite distinction to which the English existential construction is sensitive (cf. Milsark 1974); all of the sentences in (75)–(77) are perfectly acceptable.

- (75) a. Kyoositu {*ni* / *ni wa*} *sukunakutomo suu-dai no konpyuutaa*
classroom in in TOP at:least several-CL GEN computer
ga aru.
NOM exist
'In the classroom, there are at least several computers.' (Cf. (48a).)
b. Kyoositu {*ni* / *ni wa*} *konpyuutaa sukunakutomo suu-dai ga aru*.
(Cf. (48b).)
c. Kyoositu {*ni* / *ni wa*} *konpyuutaa ga sukunakutomo suu-dai aru*.
(Cf. (48c).)
- (76) a. Kono ie {*ni* / *ni wa*} *san-biki no inu ga iru*.
this house in in TOP three-CL GEN dog NOM exist
'In this house, there are three dogs.' (Cf. (48a).)
b. Kono ie {*ni* / *ni wa*} *inu san-biki ga iru*. (Cf. (48b).)
c. Kono ie {*ni* / *ni wa*} *inu ga san-biki iru*. (Cf. (48c).)

- (77) a. Huransu {ni / ni wa} ano yuumeina Efferutoo ga aru.
 France in in TOP that famous Eiffel: Tower NOM exist
 ‘In France is that famous Eiffel Tower.’
- b. Kono ie {ni / ni wa} senzitu wadai ni natta Saburoo ga
 this house in in TOP recently topic DAT became Saburo NOM
 iru.
 exist
 ‘In this house is Saburo, who became a topic of conversation recently.’
- c. Kyoositu {ni / ni wa} Chomsky no hotondo no ronbun ga
 classroom in in TOP Chomsky GEN almost GEN paper NOM
 aru.
 exist
 ‘In this classroom are most of Chomsky’s papers.’
- d. Paatii kaizyoo {ni / ni wa} sannensei no subete no
 party hall in in TOP third:year:student GEN all GEN
 gakusei ga iru.
 student NOM exist
 ‘In the party hall is every third-year student.’

Those who wish to maintain that the existential construction in Japanese is ‘special’ might claim that with the sentences in (75) and in (76) the base order is (74a); however, those in (77) have (74b) as the base order and involve scrambling. But it is difficult to evaluate this claim at this point.

10.3 Universal (Co-intersective) Quantifiers and Related Issues

10.3.1 Type (1,1) Quantifier Analogues—D-Quantifiers

Similarly to the cases of intersective D-quantifier analogues above, we may construct universal D-quantifier analogues, using one of the three patterns in (48), repeated here.

- (48) a. QE + *no* + NP + CM
 b. NP + QE + CM
 c. NP + CM + QE

A partial list of the items that serve as a QE is provided in (78), and illustrations of the three patterns are given in (79) and (80).

- (78) a. Phrases consisting of a prefix that means ‘all’ + a classifier²²:
zen-in ‘all members’, *zen-sya* ‘all companies’, *zen-bu* ‘all things’

²² We note that while *in* in *zen-in*, *sya* in *zen-sya*, and *bu* in *zen-bu* are all bound morphemes, one might argue that some of these are not regarded as classifiers, for *in* in *zen-in*, for example, cannot accompany a number (e.g., **ni-in* ‘two-in’ and **san-in*, ‘three-in’). For this reason, the heading *phrases consisting of a prefix that means ‘all’ + a classifier* may turn out to be inappropriate.

- b. Phrases describing amount:
subete ‘all’, *minna* ‘all’
- (79) a. Kimura bengosi wa *zen-bu no seiyakugaisya* o
 Kimura attorney TOP all-CL GEN pharmaceutical:company ACC
 uttaeta.
 sued
 ‘Attorney Kimura sued all the pharmaceutical companies.’
 (Cf. (48a).)
- b. Kimura bengosi wa *seiyakugaisya zen-bu o* uttaeta. (Cf. (48b).)
- c. Kimura bengosi wa *seiyakugaisya o zen-bu* uttaeta. (Cf. (48c).)
- (80) a. *Subete no dansigakusei ga eiga ni* ikitagatteita.
 all GEN male:student NOM movie DAT wanted:to:go
 ‘All the male students wanted to go to a movie.’ (Cf. (48a).)
- b. *Dansigakusei subete ga eiga ni* ikitagatteita. (Cf. (48b).)
- c. *Dansigakusei ga subete eiga ni* ikitagatteita. (Cf. (48c).)

Another way to construct universal D-quantifier analogues is to add the prefix *zen-* ‘all’ to an NP and make a compound NP as in (81); see the illustrations in (82).

- (81) *zen*-NP ‘all NP’
- (82) a. Seihu wa *zen-hokengaisya* ni keikoku o
 government TOP all-insurance:company DAT warning ACC
 hassita.
 gave
 ‘The government gave a warning to all the insurance companies.’
- b. *Zen-tiimu ga ano torofii o* kisoiau.
 all-team NOM that trophy ACC compete
 ‘All teams compete for that trophy.’

Universal D-quantifier analogues can be built from a *wh*-word. Interestingly, however, which *wh*-words can serve as the base is different from the existential D-quantifier analogue cases. Adding the particle *mo* to the *wh*-words in (83), we can create universal quantifier analogues as in (84).

- (83) a. From the list in (44):
dotira ‘which of the two’
- b. From the list in (45):
dono NP ‘which NP’, *donna* NP ‘what kind of NP’, *dooyuu* NP ‘what kind of NP’, *dono yooni* ‘in what way’, *donna huuni* ‘in what way’

- (84) a. *dotira mo* ‘both of them’
 b. *dono NP mo* ‘every NP’, *donna NP mo* ‘every kind of NP’, *dooyuu NP mo* ‘every kind of NP’, *dono yooni mo* ‘in any way’, *donna huuni mo* ‘in any way’

The sentences in (85) provide illustrations.

- (85) a. *Ziroo wa dotira mo tabeta.*
 Jiro TOP which also ate
 ‘Jiro ate both.’
 b. *Dono hito mo kita.*
 which person also came
 ‘Every person came.’
 c. *Kono kurabu wa donna hito ni mo annaizyoo o okuru.*
 this club TOP what:kind person DAT also invitation:letter ACC
 send
 ‘This club sends an invitation letter to every person.’
 d. *Watasi no tugoo wa dono yooni mo dekiru node,*
 I GEN schedule TOP which condition also able because
sukina zikan o erande kudasai.
 convenient time ACC choose please
 ‘As my schedule can be modified in any way, please choose a good time.’

Mo used in (84) is one of the so-called focus-sensitive particles, discussed in Section 10.7, and is often translated as ‘also’. Just as many other particles in this group, when *mo* is attached to an NP- α unit where α is a case-marker *ga* or *o*, α may not surface at least phonologically (e.g., (85a) and (85b)). If it is attached to an NP- α unit where α is a postposition or a case-marker other than *ga* and *o*, on the other hand, α must surface (e.g., (85c)).

There are a number of *wh*-words that may not become universal quantifier analogues with the addition of *mo*, e.g., those listed in (86).

- (86) a. Among the items listed in (44):
dore ‘which one’, *doko* ‘where’, *doo* ‘in what way’
 b. Among the items listed in (46):
dare ‘who’, *nani* /*nan* ‘what’, *ikutu* ‘how many’, *ikura* ‘how much’,
nan + classifier ‘how many’

As illustrated in (87), adding the particle *mo* to (i) *ikutu* ‘how many’ or (ii) *nan* + classifier ‘how many’ yields a phrase that means *many items*.

- (87) a. *Hanako wa keeki o ikutu mo tabeta.*
 Hanako TOP cake ACC how:many also ate
 ‘Hanako ate a lot of cakes.’

- b. Taroo wa manga o *nan-satu mo* yonda.
Taro TOP comic:book ACC what-CL also read
'Taro read a lot of comic books.'

The rest of the *wh*-words in (86), when combined with *mo*, generally cannot be used in affirmative sentences; see (88).²³

- (88) a. **Dare mo* kita.
who also came
b. *John wa *nani mo* yonda.
John TOP what also read
c. *John wa *doko ni mo* itta.
John TOP where DAT also went

There are some fixed expressions that make use of some of the *wh*-words in (86), expressing the universal meaning; see (89).

- (89) a. Tetuya wa *dare mo kare mo ni* syootaizyoo o okutta.
Tetsuya TOP who also he also DAT invitation ACC sent
'Tetsuya sent an invitation to everyone.'
b. Watasi no haha wa *nani mo ka mo* kaootosuru node
I GEN mother TOP what also that also try:to:buy because
itumo okane ga nai.
always money NOM not:exist
'Because my mother tries to buy everything, she always lacks money.'
c. Kurisumasu siizun wa *doko mo kasiko mo* nigiwatteiru.
Christmas season TOP where also there also lively
'In the Christmas season, everywhere is lively.'

It should also be noted here that we can create universal D-quantifier analogues by embedding a *wh*-word in an NP and attaching *mo* to the NP

²³ There are exceptions to this description. For example, when *mo* appears between *dare* 'who' and α of the *dare*- α unit, where α is a case-marker or a postposition, the resulting unit becomes a universal quantifier analogue, as illustrated in (i).

- (i) a. *dare mo ga* sitteru kono omise
who also NOM know this shop
'this shop, which everyone knows'
b. *dare mo o* nattokusaseru settokuryoku
who also ACC convince ability:to:convince
'the ability to convince anyone'
c. Reiko wa *dare mo ni* syootaizyoo o okutta.
Reiko TOP who also DAT invitation ACC sent
'Reiko sent an invitation to everyone.'

rather than to the *wh*-word itself. With this strategy, not only the *wh*-words in (83) but also those in (86) can be used. This is illustrated in (90).²⁴

- (90) a. Sakunen wa [*dono sensei ni suisenzyoo* o
last:year TOP which teacher DAT recommendation:letter ACC
tanonda gakusei mo] daigakuin ni haire-nak-atta.
asked student also graduate:school DAT able:enter-NEG-PAST
'Last year, every student who solicited a letter of recommendation
from any professor was not able to get into a graduate school.'
- b. Kono gakkoo de wa [*donna iiwake o yuu hito*] *mo*
this school at TOP what:kind excuse ACC say person also
syobatusareru.
is:disciplined
'At this school, anyone who provides any excuse gets disciplined.'
- c. [*Nani o katta hito*] *mo* syoosai o hookokusita.
what ACC bought person also details ACC reported
'Everyone who bought anything provided an explanation in detail.'

Universal D-quantifier analogues built from a *wh*-word can be used as the QE in the NP + CM + QE pattern (i.e., (48c)), and the whole unit expresses what universal quantifiers mean. This is illustrated in (91).

- (91) a. ?*Kono kurasu no gakusei ga dono gakusei mo* eiga ni
this class GEN student NOM which student also movie DAT
ikitagatteiru. (Cf. (48c).)
want:to:go
'Every student in this class wants to go to a movie.'
- b. ?*Kimura bengosi wa Kyoto no seiyakugaisya* o
Kimura attorney TOP Kyoto GEN pharmaceutical:company ACC
dono kaisya mo uttaeta. (Cf. (48c).)
which company also sued
'Attorney Kimura sued every pharmaceutical company in Kyoto.'

However, unlike existential D-quantifier analogues built from a *wh*-word, they cannot be used as the QE in the QE + *no* + NP + CM pattern, i.e., (48a) (see (92)) or in the NP + QE + CM pattern, i.e., (48b) (see (93)).²⁵

²⁴ Also with this point, existential D-quantifier analogues are different from universal D-quantifier analogues. As illustrated in (i), embedding a *wh*-word in an NP and attaching the particle *ka* to the NP does not produce existential quantifier analogues.

(i) *[*Nani o katta hito*] *ka ga* syousai o hookokusita.
what ACC bought person P NOM details ACC reported

²⁵ So it appears that universal quantifier analogues built on a *wh*-word can appear as a head but not in an NP.

- (92) a. **Dono gakusei mo no kono kurasu no gakusei ga eiga ni ikitagatteiru.*
(Cf. (48a).)
b. *Kimura bengosi wa *dono kaisya mo no Kyooto no seiyaku gaisya o uttaeta.*
(Cf. (48a).)
- (93) a. ?**Kono kurasu no gakusei dono gakusei mo eiga ni ikitagatteiru.*
(Cf. (48b).)
b. ?*Kimura bengosi wa *Kyooto no seiyaku gaisya dono kaisya mo uttaeta.*
(Cf. (48b).)

10.3.2 Type (1,1) Quantifier Analogues—A-Quantifiers

Let us turn to universal A-quantifier analogues. We may express what universal A-quantifiers mean with the expressions in (94); see the illustrations in (95).

- (94) a. Phrases consisting of a prefix that means ‘all’ + a classifier:
mai-kai ‘every round’, *mai-do* ‘every time’ *mai-syuu* ‘every week’,
mai-tosi ‘every year’
b. Phrases describing frequency:
kanarazu ‘necessarily, always’, *tuneni* ‘always’
- (95) a. Sakunen wa takusan siai o sita ga *mai-kai*
last:year TOP many game ACC did but every-round
maketesimatta.
lost
‘Last year, although [we] did many games, we lost every single time.’
b. Mary wa ano resutoran ni iku to *kanarazu* keeki o taberu.
Mary TOP that restaurant DAT go if always cake ACC eat
‘When she goes to that restaurant, Mary always eats a cake.’
c. Watasi ga au toki John wa *tuneni* aoi seetaa o
I NOM meet when John TOP always blue sweater ACC
kiteiru.
is:wearing
‘When I see John, he always wears a blue sweater.’

Attaching *goto ni* or *tabi ni* to a VP, an NP, or a QE as in (96) also produces an expression that serves as a universal A-quantifier. This is illustrated in (97).

- (96) a. VP *goto ni* ‘every time someone VP’, NP *goto ni* ‘every NP’,
QE *goto ni* ‘every QE’
b. VP *tabi ni* ‘every time someone VP’, NP *no tabi ni* ‘every NP’

- (97) a. Yuuko wa *nihon ni kikokusuru* {*goto* /*tabi*} *ni otya*
 Yuko TOP Japan DAT return every:time every:time at tea
 o *gohyaku guramu mottekaettekuru.*
 ACC 500 gram bring:back
 ‘Whenever Yuko returns to Japan, she brings back 500g of tea.’
- b. Suzuki sensei wa *zibun no kenkyuu happyoo no*
 Suzuki teacher TOP self GEN research presentation GEN
tabi ni dare ka o kizutukeru.
 evert:time at who P ACC harm
 ‘Prof. Suzuki hurts someone at each occasion of his research presentation.’
- c. Takasi wa *yo-nin goto ni syootaizyoo o tewatasita.*
 Takashi TOP four-CL every:time at invitation ACC handed:out
 ‘Takashi handed out an invitation to every four people.’

We may also construct universal A-quantifier analogues from *wh*-words. Similarly to D-quantifier cases, however, the *wh*-words that can be used here are different from those for intersective A-quantifier analogues. For example, adding the particle *mo* to *itu* ‘when’, we obtain (98), and with it we can construct sentences like (99).

(98) *itu mo* ‘always’

- (99) Mary wa *itu mo keitaidenwa o motteiku.*
 Mary TOP when also cellphone ACC carry
 ‘Mary always carries a cellphone.’

But adding the particle *mo* to *nan-kai* ‘how many times’ or *nan-do* ‘how many times’ produces an expression that means *many times*. This is illustrated in (100).

- (100) a. Lynn wa *paatii de nan-do mo piano o hiita.*
 Lynn TOP party at what-time also piano ACC played
 ‘Lynn played piano repeatedly at parties.’
- b. Masako wa *niku tabehoodai no resutoran ni iku to*
 Masako TOP meat all:you:can:eat GEN restaurant DAT go if
nan-kai mo takusan no syurui no niku o taberu.
 what-round also many GEN type GEN meat ACC eat
 ‘When Masako goes to an all-you-can-eat BBQ restaurant, she eats many kinds of meat repeatedly.’

In addition, we can construct universal A-quantifier analogues, by using a *wh*-word and a noun like *toki* ‘time’ and *baai* ‘occasion’, as schematized in (101). This is illustrated in (102) and (103).

- (101) a. *wh*-word + {*toki* (+ CM) / *baai* (+ CM)} + *mo*
 b. [[... *wh*-word ...] {*toki* (+ CM) / *baai* (+ CM)}] + *mo*
- (102) a. Suguru wa *dooyuu toki (de) mo* Kanako o tasukeyoo
 Suguru TOP what:kind time at also Kanako ACC try:to:help
 to suru.
 COMP do
 ‘Suguru tries to help Kanako at any time.’
 b. Mary wa *dono baai (ni) mo* reiseini taisyosita.
 Mary TOP what occasion at also calmly handled
 ‘Mary did not lose her composure on any occasion.’
- (103) a. Mary wa [[*donna otoko to deetosuru toki (ni) mo*
 Mary TOP what:kind man with date when at also
kireini kikazaru.
 beautifully dress:up
 ‘Mary dresses up beautifully when she goes out with a man, no
 matter what kind of man he is.’
 b. Takeshi wa [[*doko ni iku baai (de) mo* okane o
 Takeshi TOP where DAT go situation at also money ACC
takusan motteiku.
 many bring
 ‘Takeshi brings a lot of money when he goes out, no matter where
 the destination is.’

10.3.3 Distributivity

Regarding the issue of how distributivity is expressed in Japanese, we first point out that distributivity obtains without any overt distributor. For example, (104) can be understood to mean that each student baked a cake.

- (104) Gakusei ga keeki o yaita.
 student NOM cake ACC baked
 ‘Students baked cakes.’

Similarly, the sentences in (105) can all mean that three students each baked a cake.

- (105) a. San-nin no gakusei ga keeki o yaita. (Cf. (48a).)
 three-CL GEN student NOM cake ACC baked
 ‘Three students baked cakes.’
 b. Gakusei san-nin ga keeki o yaita. (Cf. (48b).)
 c. Gakusei ga san-nin keeki o yaita. (Cf. (48c).)

There are also expressions that serve as distributors, e.g., those in (106). If such an expression is used, the NP that it modifies is individuated.

(106) Individual distributors:

onoono ‘each’, *sorezore* ‘each’, *meimei* ‘each’

These seem to be able to occur rather freely, as illustrated in (107).

- (107) a. {*Onoono* / *Sorezore* / *Meimei*} no gakusei ga ronbun o
 each each each GEN student NOM paper ACC
 teisyutusita.
 submitted
 ‘Each student submitted a paper.’
 b. *Gakusei* {*onoono*/ *sorezore*/ *meimei*} ga ronbun o teisyutusita.
 c. *Gakusei* ga {*onoono*/ *sorezore*/ *meimei*} ronbun o teisyutusita.
 d. *Gakusei* ga ronbun o {*onoono*/ *sorezore*/ *meimei*} teisyutusita.
 e. {*Onoono*/ *Sorezore*/ *Meimei*} *gakusei* ga ronbun o teisyutusita.

The distributors in (106) may occur with a QE; the paradigms in (108), in (109), and in (110) illustrate the QE + no + NP + CM pattern (i.e., (48a)), the NP + QE + CM pattern (i.e., (48b)), and the NP + CM + QE pattern (i.e., (48c)), respectively.

- (108) a. *{*Onoono* / *Sorezore* / *Meimei*} no san-nin no gakusei ga
 each each each GEN three-CL GEN student NOM
 ronbun o teisyutusita.
 paper ACC submitted
 ‘Three students each submitted a paper.’
 b. **San-nin* no {*onoono* / *sorezore* / *meimei*} no *gakusei* ga ronbun o
 teisyutusita.
 c. *San-nin* no *gakusei* ga {*onoono* / *sorezore* / *meimei*} ronbun o
 teisyutusita.
 d. *San-nin* no *gakusei* ga ronbun o {*onoono* / *sorezore* / *meimei*}
 teisyutusita.
 e. {*Onoono* / *Sorezore* / *Meimei*} *san-nin* no *gakusei* ga ronbun o
 teisyutusita.
- (109) a. ??*Gakusei* {*onoono* / *sorezore* / *meimei*} *san-nin* ga ronbun o
 teisyutusita.
 b. ??*Gakusei* *san-nin* {*onoono* / *sorezore* / *meimei*} ga ronbun o
 teisyutusita.
 c. *Gakusei* *san-nin* ga {*onoono* / *sorezore* / *meimei*} ronbun o
 teisyutusita.
 d. *Gakusei* *san-nin* ga ronbun o {*onoono* / *sorezore* / *meimei*}
 teisyutusita.
 e. {*Onoono* / *Sorezore* / *Meimei*} *gakusei* *san-nin* ga ronbun o
 teisyutusita.

- (110) a. *?Gakusei {*onoono* / *sorezore* / *meimei*} ga san-nin ronbun o teisyutusita.
 b. Gakusei ga {*onoono* / *sorezore* / *meimei*} san-nin ronbun o teisyutusita.
 c. Gakusei ga san-nin {*onoono* / *sorezore* / *meimei*} ronbun o teisyutusita.
 d. Gakusei ga san-nin ronbun o {*onoono* / *sorezore* / *meimei*} teisyutusita.
 e. {*Onoono* / *Sorezore* / *Meimei*} gakusei ga san-nin ronbun o teisyutusita

By using the expressions in (111), we can individuate events.

- (111) Event distributors:
 a. 1 + classifier + *zutu* or 1 + classifier + 1 + classifier
 ‘one thing at a time’
 b. *n* + classifier + *zutu*, where *n* is any positive integer
 ‘*n* things at a time’

Their distribution is illustrated in (112)–(113).

- (112) a. ?**Hito-ri hito-ri no gakusei ga bungakubu o yameteitta.*
 one-CL one-CL GEN student NOM school:of:humanities ACC
 yameteitta.
 quitted
 ‘Students walked away from the School of Humanities one by one.’
 b. ?*Gakusei *hito-ri hito-ri* ga bungakubu o yameteitta.
 c. Gakusei ga *hito-ri hito-ri* bungakubu o yameteitta.
 d. Gakusei ga bungakubu o *hito-ri hito-ri* yameteitta.
 e. *Hito-ri hito-ri* gakusei ga bungakubu o yameteitta.
- (113) a. ?*John wa *has-satu zutu no hon o heya ni hakobikonda.*
 John TOP eight-CL at:the:time GEN book ACC room DAT
 hakobikonda.
 brought:in
 ‘John brought in books to the room eight at a time.’
 b. ?*John wa hon *has-satu zutu* o heya ni hakobikonda.
 c. John wa hon o *has-satu zutu* heya ni hakobikonda.
 d. John wa hon o heya ni *has-satu zutu* hakobikonda.
 e. John wa *has-satu zutu* hon o heya ni hakobikonda.

10.3.4 Exception Phrases

It is questionable whether Japanese has an NP directly corresponding to an English exception phrase, e.g., *everyone but John*. One may argue that NPs

whose form is (114) can be regarded as such instances. For example, we can construct sentences like (115).

- (114) *A igai no* (*{subete / zen-bu}* *no*) *B* ‘all *B* other than *A*’,
A o nozoku (*{subete / zen-bu}* *no*) *B* ‘all *B* other than *A*’,
A no hoka no (*{subete / zen-bu}* *no*) *B* ‘all *B* other than *A*’
- (115) Kimura sensei wa *John igai no* (*{subete / zen-bu}* *no*)
 Kimura teacher TOP John other:than GEN all all-CL GEN
gakusei o *suisensita*.
 student ACC recommended
 ‘Prof. Kimura recommended all the students other than John.’

However, the contrast between (116) and (117) illustrates that, unlike English exception phrases, phrases with the form of (114) may not give rise to the conventional implicature that the excepted individuals do not possess the relevant property.

- (116) Kimura sensei wa *John igai no* (*{subete / zen-bu}* *no*)
 Kimura teacher TOP John other:than GEN all all-CL GEN
gakusei o *suisensita no wa motiron*, *John mo*
 student ACC recommended COMP TOP of:course John also
suisensita.
 recommended
 ‘Expectedly, Prof. Kimura recommended all the students other than John, and he also recommended John.’
- (117) #Expectedly, Prof. Kimura recommended everyone except John, and he also recommended John.

Incidentally, we have the adverbial counterparts of the items in (114), i.e., those in (118), and these contribute to sentence meanings in a similar way; see (119).

- (118) *A igai*, *{subete / zen-bu}* *no* *B* ‘all *B*, excluding *A*’;
A o {nozoite / nozoki}, *{subete / zen-bu}* *no* *B* ‘all *B*, excluding *A*’;
A no hoka, *{subete / zen-bu}* *no* *B* ‘all *B*, excluding *A*’
- (119) Kimura sensei wa *John o* *{nozoite / nozoki}* *{subete / zen-bu}*
 Kimura teacher TOP John ACC excluding excluding all all-CL
no gakusei o *suisensita*.
 GEN student ACC recommended
 ‘Prof. Kimura recommended all the students, excluding John.’

It should be noted that with the adverbial clauses in (118), the conventional implicature under discussion is likely to obtain; see (120).

- (120) ‡Kimura sensei wa *John o* {*nozoite / nozoki*} {*subete / zen-bu*}
 Kimura teacher TOP John ACC excluding excluding all all-CL
no gakusei o suisensita no wa motiron, John mo
 GEN student ACC recommended COMP TOP of:course John also
 suisensita.
 recommended
 ‘Expectedly, Prof. Kimura recommended all the students excluding
 John, and he also recommended John.’

The closest to the English exception phrases we find would probably be (121), but it must occur with negation. As pointed out by Kataoka (2006: Section 5.6), (122), for example, has the conventional implicature that the excepted individuals do not possess the relevant property; see (123).²⁶

- (121) NP + *sika*
- (122) Kimura sensei wa *John sika* suisensi-nak-atta.
 Kimura teacher TOP John only recommend-NEG-PAST
 ‘Prof. Kimura did not recommend anybody but John.’
- (123) ‡Kimura sensei wa *John sika* suisensi-nak-atta no wa
 Kimura teacher TOP John only recommend-NEG-PAST COMP TOP
 motiron, John mo suisensi-nak-atta.
 of:course John also recommend-NEG-PAST
 ‘As expected, Prof. Kimura did not recommend anybody but John, and
 he also did not recommend John.’

We note that (121) can be used as an adverb, e.g., (124), and its adverbial use also gives rise to the conventional implicature under discussion.

- (124) Kimura sensei wa dansi gakusei o *John sika*
 Kimura teacher TOP male student ACC John only
 suisensi-nak-atta.
 recommend-NEG-PAST
 ‘Prof. Kimura did not recommend any male student other than John.’

10.4 Proportional Quantifiers

10.4.1 Type (1,1) Quantifier Analogues—D-Quantifiers

Like the intersective and universal D-quantifier analogues above, to express what English proportional D-quantifiers mean in Japanese, the three patterns

²⁶ *Sika* is morphologically similar to the particle *mo*, a particle we saw above. When it is attached to an NP- α unit where α is a case marker *ga* or *o*, the case-marker may not phonologically surface. If, on the other hand, it is attached to an NP- α unit where α is a postposition or a case-marker other than *ga* and *o*, then it must appear.

in (48) may be used. (48) is repeated here for convenience. The items listed in (125) are among those that can be used as a QE.

- (48) a. QE + *no* + NP + CM
 b. NP + QE + CM
 b. NP + CM + QE

- (125) Phrases describing amount:
hotondo ‘almost all’²⁷, *hanbun* ‘half’, *iti-bu* ‘one part’, # *paasento* ‘# %’,
 # *wari* ‘# tenth(s)’, #₁ *bun no* #₂ ‘#₂ / #₁’

Using some of the items in (125), we can construct examples like those in (126)–(128).²⁸

- (126) a. *Hotondo no dansigakusei ga tesuto ni otitesimatta.*
 most GEN male:student NOM test DAT failed
 ‘Most male students failed the test.’ (Cf. (48a).)
 b. *Dansigakusei hotondo ga tesuto ni otitesimatta.* (Cf. (48b).)
 c. *Dansigakusei ga hotondo tesuto ni otitesimatta.* (Cf. (48c).)
- (127) a. *Suzuki sensei wa iti-bu no gakusei o suisensita*
 Suzuki teacher TOP one-CL GEN student ACC recommended
 ‘Prof. Suzuki recommended a portion of the students.’ (Cf. (48a).)
 b. ??*Suzuki sensei wa gakusei iti-bu o suisensita.* (Cf. (48b).)
 c. *Suzuki sensei wa gakusei o iti-bu suisensita.* (Cf. (48c).)
- (128) a. *San wari no ginkoo ga enzyo o moosideta.*
 three tenths GEN bank NOM support ACC offered
 ‘Three tenths of the banks offered support.’ (Cf. (48a).)
 b. *Ginkoo san wari ga enzyo o moosideta.* (Cf. (48b).)
 c. *Ginkoo ga san wari enzyo o moosideta.* (Cf. (48c).)

²⁷ In the literature, *hotondo* is often compared with the English word *most*. But as we hint in our translation, *hotondo* does not encompass all the meanings of *most*. For example, to describe the situation where 51% of the citizens voted for Obama, (i) is appropriate but (ii) is not.

(i) Most citizens voted for Obama.
 (ii) *Hotondo no simin wa Obama ni toohyoosita.*
 almost:all GEN citizen TOP Obama DAT voted
 ‘Almost all citizens voted for Obama.’

²⁸ Depending on the speaker we ask, some items in (125) may not be fully compatible with (48b) or (48c).

10.4.2 Type (1,1) Quantifier Analogues—A-Quantifiers

Turning to proportional A-quantifiers, there are adverbs in Japanese that correspond to *mostly* or *usually*, e.g., those in (129); see the illustrations in (130).

- (129) Phrases describing frequency:
hutuu ‘usually’, *hudan* ‘usually’, *daitai* ‘mostly’, *yoku* ‘frequently’
- (130) a. Taroo wa *hutuu* Hanako to dansusuru.
 Taro TOP usually Hanako with dance
 ‘Taro usually dances with Hanako.’
 b. Emily wa sotonni iku toki *daitai* kamera o motteiku.
 Emily TOP outside go when mostly camera ACC bring
 ‘When Emily goes out, she mostly brings a camera.’

Japanese does not have an adverb that in itself corresponds to *rarely* or *seldom*. To express the meaning of *rarely* or *seldom*, we need to use adverbs like *mettani* or *hotondo* with negation, as in (131). A few illustrations are provided in (132).

- (131) [... {*mettani* / *hotondo*}... Verb + Neg], where {*mettani* / *hotondo*} and Neg are clause-mates
- (132) a. Susumu wa paatii ni it-temo *mettani* sake o
 Susumu TOP party DAT go-even:if hardly alcohol ACC
 nom-*anai*.
 drink-NEG
 ‘Even when Susumu goes to a party, he seldom drinks alcohol.’
 b. Aya wa *hotondo* zuyugoo ni ik-*anai*.
 Aya TOP almost class DAT go-NEG
 ‘Aya seldom goes to classes.’

10.5 Partitives

One way to express the partitive meaning in Japanese is to use the form in (133). This is illustrated in (134)–(135).²⁹

- (133) NP *no* QE CM

²⁹ For as yet unknown reasons, universal quantifier analogues built from a *wh*-word cannot appear as the QE in (133); see (i).

(i) **Uti no gakusei no dono gakusei mo kita*.
 our GEN student GEN which student also came
 ‘All of our students came.’

- (134) a. *Uti no gakusei no san-nin ga kita.*
our GEN student GEN three-CL NOM came
'Three of our students came.'
- b. *Uti no gakusei no tasuu ga kita.*
our GEN student GEN many NOM came
'Many of our students came.'
- c. *Uti no gakusei no dare ka ga kita.*
our GEN student GEN who P NOM came
'One of our students came.'
- d. *Uti no gakusei no zen-in ga kita.*
our GEN student GEN all-member NOM came
'All of our students came.'
- e. *Uti no gakusei no subete ga kita.*
our GEN student GEN all NOM came
'All of our students came.'
- f. *Uti no gakusei no hanbun ga kita.*
our GEN student GEN half NOM came
'Half of our students came.'
- (135) a. *Taroo wa ano kenkyuusyō no menbaa no suu-nin ni*
Taro TOP that laboratory GEN member GEN several-CL DAT
zibun no ronbun o okutta.
self GEN paper ACC sent
'Taro sent his paper to several of that laboratory's members.'
- b. *Taroo wa ano kenkyuusyō no menbaa no tasuu ni zibun*
Taro TOP that laboratory GEN member GEN many DAT self
no ronbun o okutta.
GEN paper ACC sent
'Taro sent his paper to many of that laboratory's members.'
- c. *Taroo wa ano kenkyuusyō no menbaa no dare ka ni*
Taro TOP that laboratory GEN member GEN who P DAT
zibun no ronbun o okutta.
self GEN paper ACC sent
'Taro sent his paper to one of that laboratory's members.'
- d. *Taroo wa ano kenkyuusyō no menbaa no zen-in ni*
Taro TOP that laboratory GEN member GEN all-member DAT
zibun no ronbun o okutta.
self GEN paper ACC sent
'Taro sent his paper to all of that laboratory's members.'
- e. *Taroo wa ano kenkyuusyō no menbaa no subete ni zibun*
Taro TOP that laboratory GEN member GEN all DAT self
no ronbun o okutta.
GEN paper ACC sent
'Taro sent his paper to all of that laboratory's members.'

- f. Taroo wa *ano kenkyuusyo no menbaa no 5% ni* zibun
 Taro TOP that laboratory GEN member GEN 5% DAT self
 no ronbun o okutta.
 GEN paper ACC sent
 ‘Taro sent his paper to 5% of that laboratory’s members.’

Alternatively, the NP + CM + QE pattern (i.e., (48c)) allows us to express the partitive meaning; see (136).

- (136) a. Kansyu ga yosomi o siteiru uti ni syuuzin ga
 guard NOM look:away ACC do while DAT prisoner NOM
hito-ri nigedasita to siyoo.
 one-CL escape COMP suppose
 ‘Suppose that one of the prisoners escapes while the guard is
 looking away.’
- Soosuruto hoka no syuuzin mo zibun mo itu ka wa
 if:so other GEN prisoner also self also when P TOP
 nigerareru to kangaedasu daroo.
 able:to:escape COMP begin:to:think probably
 ‘Then the other prisoners would start thinking that they can also
 escape someday.’
- b. Kono kurasu kara *gakusei o san-nin* erande kudasai.
 this class from student ACC three-CL select please
 ‘Please select three of the students from this class.’

It is also reported in Inoue (1978) that the combination of the (48a) and (48c) patterns, i.e., [QE + no + NP] + CM + QE may express the partitive meaning; see (137).

- (137) (= Inoue 1978:175 [36])
 [*Narande hasitteita suu-dai no torakku*] ga gaadoreeru ni
 lined:up running several-CL GEN truck NOM guardrail DAT
san yon-dai butukatta.
 three four-CL struck
 ‘Three or four of the several trucks running abreast struck the guard
 rail.’

10.6 Expressions Involving Negation

10.6.1 Decreasing D-Quantifiers

First of all, there are no D-quantifiers in Japanese that correspond to *no NP* or *few NP* in English. To express what *no NP* means in Japanese, we may use a *wh*-word plus the particle *mo* co-occurring with negation, as schematized in (138).

- (138) [... *wh*-word + *mo* ... Verb + Neg], where (i) *wh*-word + *mo*, and (ii) Neg are clause-mates

For example, in expressing what the sentences in (139) mean, we may use the sentences in (140).

- (139) a. No student did homework.
 b. John visited no place.
 c. Mary applied to no company.
- (140) a. *Dono gakusei mo syukudai o si-nak-atta.*
 which student also homework ACC do-NEG-PAST
 ‘No student did homework.’
 b. *John wa doko ni mo ik-anak-atta.*
 John TOP where at also go-NEG-PAST
 ‘John did not go to any place.’
 c. *Mary wa dono kaisya ni mo oobosi-nak-atta.*
 Mary TOP which company DAT also apply-NEG-PAST
 ‘Mary did not apply to any company.’

We can also use the form in (141) to express the meaning of *no NP*; see the illustrations in (142).

- (141) [... NP-CM ... 1-classifier + *mo* Verb + Neg], where (i) the NP, (ii) 1-classifier + *mo*, and (iii) Neg are clause-mates
- (142) a. *Yukiko wa hon o is-satu mo yom-anak-atta.*
 Yukiko TOP book ACC one-CL also read-NEG-PAST
 ‘Yukiko did not read even one book.’
 b. *Gakusei ga hito-ri mo ko-nak-atta.*
 student NOM one-CL also come-NEG-PAST
 ‘No student came.’

To express what *few NP* means, we use a similar strategy; we use the form in (143), where *hotondo* roughly means *almost all*.

- (143) [... *hotondo wh*-word + *mo* ... Verb + Neg], where (i) *wh*-word + *mo* and (ii) Neg are clause-mates

The sentences in (144) are, for example, translated into the sentences in (145).

- (144) a. Few students did homework.
 b. John visited few places.
 c. Mary applied to few companies.
- (145) a. *Hotondo dono gakusei mo syukudai o si-nak-atta.*
 almost which student also homework ACC do-NEG-PAST
 ‘Almost no student did homework.’

- b. John wa *hotondo doko ni mo* ik-anak-atta.
John TOP almost where DAT also go-NEG-PAST
'John went to few places.'
- c. Mary wa *hotondo dono kaisyā ni mo* oobosi-nak-atta.
Mary TOP almost which company DAT also apply-NEG-PAST
'Mary applied to few companies.'

Having no D-quantifiers that correspond to *no NP* or *few NP*, one might wonder if Japanese has any decreasing D-quantifiers. We maintain that there are none. One might argue that an expression that corresponds to *less than* ‡ *NP* would be one such candidate. For example, the sentences in (146) arguably correspond to (147).³⁰

- (146) a. Yukiko wa *san-satu ika no hon o* yonda.
Yukiko TOP three-CL equal:less GEN book ACC read
'Yukiko read three or less books.' (Cf. (48a).)
- b. Yukiko wa *hon o san-satu ika sika*
Yukiko TOP book ACC three-CL equal:less only
yom-anak-atta.
read-NEG-PAST
'Yukiko only read three or less books.' (Cf. (48c).)

(147) Yukiko read less than three books.

However, unlike (147), the sentences in (146) entail that Yukiko read some books. We thus observe the contrast between (148) and (149).

- (148) a. Yukiko wa *san-satu ika no hon o* yonda.
Yukiko TOP three-CL equal:less GEN book ACC read
‡Zitu wa *is-satu mo yom-anak-atta no da*.
truth TOP one-CL also read-NEG-PAST COMP COPULA
'Yukiko read three books or less. In fact, she did not read even one book.'
- b. Yukiko wa *hon o san-satu ika sika*
Yukiko TOP book ACC three-CL equal:less only
yom-anak-atta.
read-NEG-PAST

³⁰ The sentence in (i) below, whose object has the NP + QE + CM pattern (i.e., (48b)), is not acceptable. This is expected, as *san-satu ika* 'three or below' cannot be used independently from the NP that it modifies; see (ii).

- (i) ??Yukiko wa *hon san-satu ika o* yonda. (Cf. (48b).)
Yukiko TOP book three-CL equal:less ACC read
'Yukiko read three books or less.'
- (ii) ?*Yukiko wa *san-satu ika o* yonda.

‡Zitu wa is-satu mo yom-anak-atta no da.
truth TOP one-CL also read-NEG-PAST COMP COPULA

‘Yukiko only read three books or less. In fact, she did not read even one book.’

(149) Yukiko read less than three books. Actually, she read no book.

10.6.2 NPIs and Negation-Sensitive Items

We now turn to consider what items can be considered NPIs in Japanese. As we have seen above (see (138), (141) and (143)), certain sets of items must co-occur with negation to give rise to a ‘special meaning’. As illustrated below, we can also identify items whose presence requires negation. (In Japanese, when negation is required, it must be a clause-mate of the relevant item(s); cf. McGloin 1976; Kato 1994.) However, we are not completely sure that they are indeed NPIs for the following reason. Since NPIs are by definition items that require a downward entailing environment, the presence of decreasing quantifiers is required to determine if a given item is an NPI (rather than an item merely requiring the presence of negation). Unfortunately, however, Japanese lacks decreasing quantifiers; see Section 10.6.1.

During the remainder of this section, we introduce several items whose presence requires negation. First, the expressions of the form in (150) require negation; see the illustrations in (151).

(150) 1-classifier + *mo*

E.g., *hito-tu mo*, *ik-ko mo*, *hito-ri mo*, *iti-dai mo*, etc.

(151) a. Paatii ni gakusei ga *hito-ri mo* {*ko-nak-atta* / **kita*}.
party DAT student NOM one-CL also come-NEG-PAST came
‘To the party, no student came.’

b. John wa hon o *is-satu mo* {*yom-anak-atta* / **yonda*}.
John TOP book ACC one-CL also read-NEG-PAST read
‘John did not read even one book.’

Second, when the expressions of the form in (152) are used without a case-marker, negation is usually required; see (153).

(152) NP + 1-classifier

E.g., *hanataba ito-tu* ‘one bouquet’, *hon is-satu* ‘one book’, *kuruma iti-dai* ‘one car’

(153) a. Watasi no kare wa hanataba *hito-tu* {*kure-nai* /
I GEN boy:friend TOP bouquet one-CL give-NEG
kure-nak-atta / **kureru* / **kureta*}.
give-NEG-PAST give gave
‘My boyfriend {has not given / did not give / gives / gave} me even one bouquet.’

- b. Taroo wa hon *is-satu* yomooto {si-**nai** / si-**nak**-atta /
Taro TOP book one-CL read DO-NEG DO-NEG-PAST
*suru / *sita}.
do did
'Taro {does not read / did not read / reads / read} even one book.'

There are also a number of adverbs that need negation. Some of them are listed in (154); the sentences in (155) provide illustrations.

- (154) {*zenzen* / *mattaku*} + negation 'not at all'
toutei + negation 'no matter what one does'
{*mettani* / *hotondo*} + negation 'hardly'
{*amari* / *sahodo* / *sonnani*} + negation 'not much/many'
dateni + negation 'with one's efforts not wasted'
nidoto + negation 'never'
- (155) a. Tookyoo daigaku ni wa *toutei* {haire-**nai** /
Tokyo university DAT TOP no:matter:what able:enter-NEG
*haireru} to omoimasu.
able:enter COMP think
'I think I cannot get into the University of Tokyo no matter what I do.'
- b. Anna otoko to wa *nidoto* {asobi-**masen** / *asobimasu}.
that:kind man with TOP never play-NEG play
'I will never play with that kind of man.'

10.7 So-Called Focus-Sensitive Particles

In Japanese, there is a class of expressions that arguably correspond to the English so-called focus-sensitive particles such as *only*, *even*, and *also*. The meanings of so-called focus-sensitive particles are said to be focus-sensitive, i.e., to make reference to a set of alternative choices under consideration (cf. Kuroda 1965; Jackendoff 1972; Rooth 1985, 1992). Hereafter, we refer to such expressions as FPs. (156) presents a partial list of FPs.³¹

- (156) a. X *dake* 'only X'
b. X *nomi* 'only X'
c. X *bakari* 'only X'
d. X *sae* 'even X'
e. X *sura* 'even X'
f. X *made* 'up to X'
g. X *mo* 'also X'

³¹ Here we may include the topic marker *wa*, discussed in Section 10.1.1, and the particle *sika*, discussed in Section 10.3.4.

- h. X *nado* ‘X and so on’ or ‘X which/who is low in a list’
 - i. X *nanka* ‘X, which/who is low in a list’
 - j. X *koso* ‘X, which/who is the most appropriate or important for the relevant context’
- (Note: X can be an NP, or a phrase other than an NP for some FPs)

The FPs in (156) all generally indicate that X is among the set of alternative choices under consideration. Their distribution is also similar. As mentioned in Section 10.3.1, when they attach to an NP- α unit where α is a case-marker *ga* or *o*, α may not phonologically surface; see (157).

- (157) a. Kimura sensei wa Kentaroo {*dake* / *nomi* / *bakari* / *sae* / *sura* / *made* / *mo*} suisensita.
 Kimura teacher TOP Kentaro only only only even even
 up:to also recommended
 ‘Prof. Kimura recommended {only / only / only / even / even / up to / also} Kentaro.’
- b. Satoko {*nanka* / *nado*} ki-temo, kono mondai wa
 Satoko P P come-even:if this problem TOP
 kaiketusi-nai.
 solve-NEG
 ‘(Lit.) The coming of Satoko, who is low in the list, will not solve this problem.’
- c. John *koso* seitokaityoo ni naru bekida.
 John P student:representative DAT become should
 ‘It is John who should be the student representative.’

In contrast, when FPs are attached to an NP- α unit where α is a postposition or a case-marker other than *ga* and *o*, α must surface. This is illustrated in (158)–(160).

- (158) a. Kimura sensei wa Kentaroo to {*dake* / ?*nomi* / *bakari* / *sae* / *sura* / ?*made* / *mo*} ronbun o kaita.
 Kimura teacher TOP Kentaro with only only only even
 even up:to also paper ACC wrote
 ‘Prof. Kimura wrote papers {only / only / only / even / even / up to / also} with Kentaro.’
- b. *Kimura sensei wa Kentaroo {*dake* / *nomi* / *bakari* / *sae* / *sura* / *made* / *mo*} ronbun o kaita.
- (159) a. Watasi wa Siroo to {*nanka* / *nado*} dansusi-nai.
 I TOP Shiro with P P dance-NEG
 ‘I do not dance with Shiro, who is low in the list.’
- b. *Watasi wa Siroo {*nanka* / *nado*} dansusi-nai.

- (160) a. Bill wa Suzuki sensei ni *koso* suisenzoo o
 Bill TOP Suzuki teacher DAT P recommendation:letter ACC
 tanomu bekidatta.
 ask should:have
 ‘It is Prof. Suzuki from whom Bill should have solicited a letter of
 recommendation.’
 b. *Bill wa Suzuki sensei *koso* suisenzoo o tanomu bekidatta.

We have observed in (158a), (159a), and (160a) that when the FPs listed in (156) attach to an NP-CM unit, they can all follow the whole unit. Some of the listed expressions can also be inserted between the NP and the CM of the NP-CM unit. As illustrated in (161), *dake*, *nomi*, *bakari*, *nado*, and *nanka* can occur in such a position.

- (161) a. Kimura sensei wa Kentaroo {*dake* / *nomi* / *bakari*} to ronbun
 Kimura teacher TOP Kentaro only only only with paper
 o kaita.
 ACC wrote
 ‘(Lit.) Prof. Kimura wrote papers with only Kentaro.’
 b. Watasi wa Siroo {*nanka* / *nado*} to dansusi-nai.
 I TOP Shiro P P with dance-NEG
 ‘I do not dance with Shiro {who is low in the list / and so on}.’

Sae, *sura*, and *koso* seem to depend on the speaker we consult with; some say that the sentences in (162) are as acceptable as those in (161), but others find them marginal or unacceptable.³²

- (162) a. ^{OK} /?? / *Kimura sensei wa Kentaroo {*sae* / *sura*} to ronbun
 Kimura teacher TOP Kentaro even even with paper
 o kaita.
 ACC wrote
 ‘(Lit.) Prof. Kimura wrote papers with even Kentaro.’
 b. ^{OK} /?? / *Bill wa Suzuki sensei *koso* ni
 Bill TOP Suzuki teacher P DAT
 suisenzoo o tanomu bekidatta
 recommendation:letter ACC ask should:have
 ‘It is Prof. Suzuki from whom [we thought] Bill should have
 solicited a letter of recommendation.’

It is clear that *made* and *mo* cannot occur between the NP and α ; for example, no speaker finds the sentence in (163) to be acceptable.³³

³² Miyachi (1999) also records that the speakers’ judgments of the sentences where an FP is inserted between the NP and the CM of the NP-CM unit may vary.

³³ There have been attempts to explain why some FPs can occur between the NP and the CM of the NP-CM unit while the others cannot, e.g., Yamada (1908), Kondo (1983), Numata (1986), Okutu (1986), Miyachi (1999), Aoyagi (2006), and Hayashishita (2011).

- (163) *Kimura sensei wa Kentaroo {*made/ mo*} to ronbun o kaita.
 Kimura teacher TOP Kentaro up:to also with paper ACC wrote
 ‘(Lit.) Prof. Kimura wrote papers with {up to/ also} Kentaro.’

As we indicated in (156) above, some of the FPs may also appear next to a phrase other than an NP; see (164).

- (164) a. John wa [_{VP} onnanoko o oikakete]-*bakari*-de amari
 John TOP girl ACC chase-only-COPULA much
 benkyoosi-nai.
 study-NEG
 ‘John always pays attention to girls, and does not study much.’
- b. (= Masuoka and Takubo 1989:137 [55])
 Suzuki san no kotoba wa [_{AdvP} sugasugasiku]-*sae*-atta.
 Suzuki Mr. GEN word TOP refreshing-even-existed
 ‘Mr. Suzuki’s words were even refreshing.’
- c. (= Masuoka and Takubo 1989:137 [56])
 Hanako wa sono ue [_{AdjP} kinbende]-*mo*-aru.
 Hanako TOP that top diligent-also-exist
 ‘In addition, Hanako is also diligent.’
- d. (Based on Masuoka and Takubo 1989:137 [58])
 Konkai wa [_{VP} A sya no syatyoo to menkaisita]
 this:time TOP A company GEN president with met
dake desu.
 only COPULA
 ‘For this [trip], I only met the CEO of Company A.’
- e. [_{VP} Syazaizyoo o kaitari]-{*nanka / nado*}-*si*-temo,
 apology ACC write- P P -do-even:if
 yurusitemorae-nai daroo.
 is:forgiven-NEG likely
 ‘Even if [we] write a letter of apology {which is low in the list/ and so on}, [we] will not be able to be forgiven.’

We have noted above that any of the FPs in (156) generally indicates that the denotation of its sister is among the FPs in the set of alternative choices under consideration. In accordance with this characterization, when the denotation of an NP is among the alternative choices, an FP cannot be attached to a VP that contains it, and conversely, when the denotation of a VP is among the alternative choices, an FP generally cannot be attached to an NP within it. For example, in direct response to (165), (167a) is felicitous while (167b) is not. By contrast, in directly replying to (166), (167b) is appropriate while (167a) is not.

- (165) Tookyoo ni itte iroirona hito ni au tte itteta
 Tokyo DAT go various people DAT meet COMP were:saying
 kedo, kekkyoku dare ni attekita no desu ka.
 although after:all who DAT met:come:back COMP COPULA Q
 ‘You were saying that you would meet various people in Tokyo. But
 who did you end up meeting?’
- (166) Tookyoo ni itte iroirona koto o suru tte itteta kedo,
 Tokyo DAT go various things ACC do COMP were:saying although
 kekkyoku nani o sitekita no desu ka.
 after:all what ACC do:come:back COMP COPULA Q
 ‘You were saying that you would do various things in Tokyo. But what
 did you end up doing?’
- (167) a. [Noriko] *sae* ni attekimasita.
 Noriko even DAT meet:came:back
 ‘I met even Noriko.’
 b. [Noriko ni ai]-*sae*-sitekimasita.
 Noriko DAT meet-even-do:came:back
 ‘I even met Noriko.’

There are, however, examples that appear to be contrary to the above characterization of FPs—a given FP generally indicates that the denotation of its sister is among the set of alternative choices under consideration; see the sentences in (168).

- (168) a. (= Kuroda 1965:81 [20], slightly adapted)
 (Zyuu-nen tatte) [musuko *mo* daigaku ni hairi], [musume *mo*
 10-year past son also university DAT enter daughter also
 yome ni itta].
 bride DAT went
 ‘(In the last ten years) my son also got into a university, and my
 daughter also got married.’
 b. (= Aoyagi 2006:122 [6b], slightly adapted)
 Kinoo no konpa de mada miseinen no Taroo wa [sake
 Yesterday GEN party at still non:adult GEN Taro TOP alcohol
 o nonda] bakarika [tabako *sae* sutta].
 ACC drank not:only cigarette even smoked
 ‘At the party yesterday, Taro, who is not yet legally an adult, not
 only drank alcohol but also even smoked cigarettes.’

Finally, we note that some of the FPs listed in (156) can attach to the QE in the NP + CM + QE pattern (i.e., (48c)), as illustrated in (169).

- (169) a. Satoo sensei wa gakusei o *san-nin dake* suisensita.
 Sato teacher TOP student ACC three-CL only recommended
 ‘Prof. Sato recommended three students only.’
 b. Kinoo no paatii ni onnanoko ga *20-nin mo* kita.
 yesterday GEN party DAT girl NOM 20-CL also came
 ‘To yesterday’s party, as many as 20 girls came.’

10.8 Floating Quantifiers

By definition, floating quantifiers are those quantifiers which are phonologically separated from the NPs they modify. According to this definition, Japanese has floating quantifiers. For example, we have seen in Sections 10.2, 10.3, and 10.4 that we can construct intersective, universal, and proportional D-quantifier analogues with the NP + CM + QE pattern (i.e., (48c)). With this pattern, since the CM intervenes between the NP and the QE, the QE is characterized as a floating quantifier. We can also find clearer cases: the QE can modify the NP in the configurations in (170). This is illustrated in (171)–(173).

- (170) a. ... NP + CM ... α ... QE ..., where α is any phrase
 b. ... QE ... α ... NP + CM ..., where α is any phrase
- (171) Intersective D-quantifier analogues:
 a. Dansigakusei ga kinoo *san-nin* kita.
 male:student NOM yesterday three-CL came
 ‘Three male students came yesterday.’ (Cf. (50c).)
 b. *San-nin* kinoo dansigakusei ga kita.
 c. John wa hon o sensyuu sukunakutomo *suu-satu* yonda.
 John TOP book ACC last:week at:least several-CL read
 ‘John read at least several books last week.’ (Cf. (51c).)
- (172) Universal D-quantifier analogues:
 a. Dansigakusei ga kinoo *subete eiga* ni ikitagatteita.
 male:student NOM yesterday all movie DAT wanted:to:go
 ‘All the male students wanted to go to a movie yesterday.’ (Cf. (80c).)
 b. Kimura bengosi wa seiyakugaisya o sakunen *zen-bu*
 Kimura attorney TOP pharmaceutical:company ACC last:year all-CL
 uttaeta.
 sued
 ‘Attorney Kimura sued all pharmaceutical companies last year.’
 (Cf. (79c).)
 c. Kimura bengosi wa *zen-bu* sakunen seiyakugaisya o uttaeta.

(173) Proportional D-quantifier analogues:

- a. Dansigakusei ga sengetu *hotondo* tesuto ni otita.
 male:student NOM last:month most test DAT failed
 ‘Most male students failed the test last month.’ (Cf. (126c).)
- b. ??*Hotondo* sengetu dansigakusei ga tesuto ni otita.
- c. Suzuki sensei wa gakusei o sengetu *iti-bu* suisensita.
 Suzuki teacher TOP student ACC last:month one-CL recommended
 ‘Prof. Suzuki recommended one portion of the students last month.’
 (Cf. (127c).)

It should be noted, however, that a given QE can float only if the NP it modifies is in a particular relation to its clause-mate verb. The NPs that are marked with the nominative or accusative marker always allow their QEs to float; see (171)–(173). But those that are marked with the dative marker do so only occasionally; see (174).

- (174) a. Kimura sensei wa kondo no paatii no tameni gakusei
 Kimura teacher TOP this:coming GEN party GEN for student
 ni *san-nin* dezaato o mottekosaseta.
 DAT three-CL dessert ACC made:bring
 ‘Prof. Kimura made three students bring something for dessert.’
- b. (= Shibatani 1978:352 [41b], slightly adapted)
 Boku wa kankoku de gengogakusya ni *go roku-nin*
 I TOP Korea at linguist DAT five six-CL
 syookaisareta.
 was:introduced
 ‘In Korea I was introduced to five, six linguists.’
- b. *Suguru wa sensei ni *san-nin* aisatusita.
 Suguru TOP teacher DAT three-CL greeted
 ‘Suguru greeted three teachers.’

The NPs with other case-markers or postpositions rarely permit their QEs to float; see (175).³⁴

- (175) a. *Kenta wa onnanoko to *san-nin* dansusita.
 Kenta TOP girl with three-CL danced
 ‘Kenta danced with three girls.’

³⁴ Inoue (1978), Shibatani (1978), Miyagawa (1989), Takami (1998), and Tsubomoto (1995) document ‘exception’ cases such as (i).

- (i) (= Takami 1998 [24], slightly adapted)
 Boku wa gantan ni osiego kara *go-nin* nengazyoo o moratta.
 I TOP new:year:day at student from five-CL greeting:card ACC received
 ‘I received greeting cards from five students of mine.’

- b. *Mariko wa konpyuutaa de *san-dai* tegami o kaita.
 Mariko TOP computer with three-CL letter ACC wrote
 ‘Mariko wrote letters with three computers.’

10.9 Scope Interaction

Having described various phenomena involving a QE in Japanese, we now proceed to examine the scope interaction among scope-bearing elements. In what follows, we use the term *QNP*s to cover D-quantifier analogues in general. We discuss three types of scope interaction: (i) among QNPs (Section 10.9.1), (ii) between QNPs and *wh*-words (Section 10.9.2), and (iii) between QNPs and negation (Section 10.9.3). We confine our discussion to the base order, leaving aside scope interaction in the scrambling construction. We choose to limit our discussion thus, as we believe it is more beneficial to emphasize those factors which need to be considered when discussing scope interaction generally than to make a rough and hasty sketch of scope interaction in various constructions. For an in-depth assessment of scope interaction in the scrambled order, please see Hayashishita (2000a, 2004). Nor do we discuss in this section the scope interaction among FPs, as it requires much background information. (We do, however, briefly touch on this matter in Section 10.10.1 when we introduce Type (2) quantifiers.) Readers who are interested in the scope interaction among FPs in Japanese may wish to consult Hayashishita (2011), which includes a detailed study on this topic.

10.9.1 Among QNPs

As we have seen in Sections 10.2, 10.3, and 10.4 above, intersective, universal, and propositional D-quantifier analogues may have the forms in (48), repeated here. We thus first describe the scope interaction among QNPs, referring to these forms.

- (48) a. QE + *no* + NP + CM
 b. NP + QE + CM
 c. NP + CM + QE

In the configuration in (176), α is able to take wide scope with respect to β , whether α and β take the form of (48a), (48b), or (48c). Hereafter, the reading where α takes wide scope with respect to β is referred to as the *surface scope reading*.

- (176) [... α -ga ... β -ni /o ...], where α and β are QNPs and clause-mates

Let us illustrate this with respect to intersective, universal, and proportional D-quantifier analogues. For example, (177) illustrates cases where α is an intersective D-quantifier, and any combinations of the subject and object items can be taken to mean (178).

- (177) {Suu-nin no kyoozyu ga / Kyoozyu suu-nin ga / Kyoozyu
several-CL GEN professor NOM professor several-CL NOM professor
ga suu-nin} {san-nin izyoo no gakusei o / gakusei
NOM several-CL three-CL equal:more GEN student ACC student
san-nin izyoo o / gakusei o san-nin izyoo}
three-CL equal:more ACC student ACC three-CL equal:more
suisensita.
recommended
'Several professors recommended three or more students.'

- (178) There are several professors such that each of them recommended three or more students.

(179) further illustrates that in the configuration of (176), α can take wide scope with respect to β when α is an intersective D-quantifier analogue; any combinations in (179) give rise to (180).

- (179) {Go-nin izyoo no kyoozyu ga / Kyoozyu go-nin
five-CL equal:more GEN professor NOM professor five-CL
izyoo ga / Kyoozyu ga go-nin izyoo} {san-nin
equal:more NOM professor NOM five-CL equal:more three-CL
izyoo no gakusei o / gakusei san-nin izyoo o /
equal:more GEN student ACC student three-CL equal:more ACC
gakusei o san-nin izyoo} suisensita.
student ACC three-CL equal:more recommended
'Five or more professors recommended three or more students.'

- (180) There are five or more professors such that each of them recommended three or more students.

(181) presents cases where α is a universal D-quantifier analogue; any combinations of the subject and object items in (181) can give rise to (182).

- (181) {Subete no kyoozyu ga / Kyoozyu subete ga / Kyoozyu ga
all GEN professor NOM professor all NOM professor NOM
subete} {san-nin izyoo no gakusei o / gakusei san-nin
all three-CL equal:more GEN student ACC student three-CL
izyoo o / gakusei o san-nin izyoo} suisensita.
equal:more ACC student ACC three-CL equal:more recommended
'All professors recommended three or more students.'

- (182) For each professor, there are three or more students that he/she recommended.

Cases where α is a proportional D-quantifier analogue are illustrated in (183); any combinations in (183) can all be taken to mean (184).

- (183) {Sanbun no iti no kyoozyu ga / Kyoozyu sanbun no iti
 third GEN one GEN professor NOM professor third GEN one
 ga / Kyoozyu ga sanbun no iti} {san-nin izyoo no
 NOM professor NOM third GEN one three-CL equal:more GEN
 gakusei o / gakusei san-nin izyoo o / gakusei o
 student ACC student three-CL equal:more ACC student ACC
 san-nin izyoo} suisensita.
 three-CL equal:more recommended
 ‘One third of the professors recommended three or more students.’

- (184) For one third of the professors, each of them recommended three or more students.

We now consider the availability of the readings where β takes wide scope with respect to α in (176), repeated here. This reading is referred to as the *inverse scope reading* below.

- (176) [... α -ga ... β -ni /o ...], where α and β are QNPs and clause-mates

Inverse scope readings seem more difficult to detect than surface scope readings. In fact, Kuroda (1969/1970) and Hoji (1985) maintain that inverse scope readings are impossible. Recently, however, a number of researchers reported that they are detectable (cf. Kitagawa 1990; Kuroda 1994; Kuno et al. 1999; Hayashishita 1999, 2000b, 2004; Hoji 2003b). In fact, we may detect an inverse scope reading if β has the QE + no + NP + CM form (i.e., (48a)) or the NP + QE + CM form (i.e., (48b)).

For illustrations, imagine the situation in (185).

- (185) You are a department administrative staff member. The head of the department asks you to count the number of students who have received recommendation from three or more professors. You check the students one by one. Did John get recommendation from three or more professors? How about Mary? And so on. You then reply to the head, saying ...

If any combinations of the subject and object items in (186) are uttered in this situation, they are understood to mean (187).

- (186) {San-nin izyoo no kyoozyu ga / Kyoozyu san-nin
 three-CL equal:more GEN professor NOM professor three-CL
 izyoo ga / Kyoozyu ga san-nin izyoo} {suu-nin
 equal:more NOM professor NOM three-CL equal:more several-CL

no gakusei o / gakusei suu-nin o} suisensimasita.
 GEN student ACC student several-CL ACC recommended
 ‘Three or more professors recommended several students.’

- (187) There are several students such that each of them is recommended by three or more professors.

Similarly, in the same context, any combinations in (188), those in (190), and those in (192) give rise to (189), (191), and (193), respectively.

- (188) {San-nin izyoo no kyoozyu ga / Kyoozyu san-nin
 three-CL equal:more GEN professor NOM professor three-CL
 izyoo ga / Kyoozyu ga san-nin izyoo} {go-nin
 equal:more NOM professor NOM three-CL equal:more five-CL
 izyoo no gakusei o / gakusei go-nin izyoo o}
 equal:more GEN student ACC student five-CL equal:more ACC
 suisensimasita.
 recommended
 ‘Three or more professors recommended five or more students.’

- (189) There are five or more students such that each of them is recommended by three or more professors.

- (190) {San-nin izyoo no kyoozyu ga / Kyoozyu san-nin
 three-CL equal:more GEN professor NOM professor three-CL
 izyoo ga / Kyoozyu ga san-nin izyoo} {subete no
 equal:more NOM professor NOM three-CL equal:more all GEN
 gakusei o / gakusei subete o} suisensimasita.
 student ACC student all ACC recommended
 ‘Three or more professors recommended all the students.’

- (191) For each student, there are three or more professors who recommended him/her.

- (192) {San-nin izyoo no kyoozyu ga / Kyoozyu san-nin
 three-CL equal:more GEN professor NOM professor three-CL
 izyoo ga / Kyoozyu ga san-nin izyoo} {sanbun no
 equal:more NOM professor NOM three-CL equal:more third GEN
 iti no gakusei o / gakusei sanbun no iti o} suisensimasita.
 one GEN student ACC student third GEN one ACC recommended
 ‘Three or more professors recommended one third of the students.’

- (193) For one third of the students, each of them was recommended by three or more professors.

Liu (1990) notes that, in English, when β in (176) is a certain type of QNP, the inverse scope reading is difficult to obtain. Among the items that do not support

inverse scope readings, she lists decreasing QNPs and one type of intersective D-quantifiers called modified numerals. Modified numerals are expressions such as *more than three boys* and *at least five girls*, where an NP accompanied with a number phrase is modified by some expression. We cannot comment on her remark about decreasing QNPs because they are absent in Japanese (see Section 10.6.1 above), but her remark about modified numerals initially appears to extend to Japanese. When speakers are asked to provide judgments without any accompanying context, they generally have more difficulty in detecting an inverse scope reading with modified numerals than with other QNPs. As we alluded to above, however, if an appropriate context is given, the difficulty which speakers experience with modified numerals disappears—with the context in (185), we detect an inverse scope reading in (188) as easily as in the other sentences.

Hayashishita (2004, 2010) attempts to describe this state of affairs. One way to state Hayashishita's claim is (194).

- (194) In [... α -ga ... β -ni /o ...], where α and β are QNPs and clause-mates, β takes wide scope with respect to α only if in the relevant context, there is one and only one set of individuals that can possibly be the extension of β .

We hereafter call the condition embedded in (194) *the unique set condition*, which we claim to be a necessary condition for the inverse scope reading. For example, no combinations of the subject and object items in (195) give rise to an inverse scope reading (cf. (188)).

- (195) Maitosi {san-nin izyoo no kyoozyu ga / kyoozyu
 every:year three-CL equal:more GEN professor NOM professor
 san-nin izyoo ga / kyoozyu ga san-nin izyoo}
 three-CL equal:more NOM professor NOM three-CL equal:more
 {go-nin izyoo no itinensei o / itinensei go-nin izyoo
 five-CL equal:more GEN freshman ACC freshman five-CL equal:more
 o} suisensimasu.
 ACC recommend
 'Every year, three or more professors recommend five or more freshmen.'

According to Hayashishita (2010), this is because the value of the first-year students changes each year—because the unique set condition cannot be met.

Regarding the issue of why people generally have more difficulty in initially detecting inverse scope readings with modified numerals than with the other types of QNPs, Hayashishita (2010) states the following. For some types of QNPs including modified numerals, the unique set condition cannot be satisfied by their lexical meanings alone—in the discourse domain that includes a lot of individuals, there is more than one set of individuals which can serve as their extensions. In other words, in those cases, to meet the unique set condition, the context must play a role. With modified numeral cases, to imagine a context which singles out one and only one set of individuals is especially difficult. If the

judgments of a speaker are solicited out of blue, he/she is likely not to imagine a necessary context. It is hence expected that if no appropriate context is provided, people generally fail to detect an inverse scope reading with modified numerals.

Here we wish to reiterate that the detection of surface scope readings is much easier than that of inverse scope readings. Plus, as pointed out by Hayashishita (2004, 2010), the unique set condition does not apply to surface scope readings— α in the configuration of (176) can take wide scope with respect to β even if there is more than one set of individuals that can possibly be the extension of α . For example, any combinations of the subject and object items in (196) can give rise to a surface scope reading.

- (196) Maitosi {san-nin izyoo no sinnin kyoojin ga /
 every:year three-CL equal:more GEN newly:hired teacher NOM
 sinnin kyoojin san-nin izyoo ga / sinnin kyoojin
 newly:hired teacher three-CL equal:more NOM newly:hired teacher
 ga san-nin izyoo} {go-nin izyoo no gakusei o /
 NOM three-CL equal:more five-CL equal:more GEN student ACC
 gakusei go-nin izyoo o / gakusei o go-nin izyoo}
 student five-CL equal:more ACC student ACC five-CL equal:more
 suisensimasu.
 recommend
 ‘Every year three or more newly hired teachers recommend five or
 more students.’

One might thus wish to analyze surface scope readings differently from inverse scope readings (cf. Ben Shalom 1993; Hayashishita 2004, 2010).

As we alluded earlier, the inverse scope reading is not possible if β in (176) occurs in the NP + CM + QE form (i.e., (48c)). Any combinations of the subject and object items in (197), those in (198), those in (199), and those in (200), for example, fail to give rise to (187), (189), (191), and (193), respectively.

- (197) {San-nin izyoo no kyoozyu ga / Kyoozyu san-nin
 three-CL equal:more GEN professor NOM professor three-CL
 izyoo ga / Kyoozyu ga san-nin izyoo} gakusei o
 equal:more NOM professor NOM three-CL equal:more student ACC
 suu-nin suisensita.
 several-CL recommended
 ‘Three or more professors recommended several students.’
- (198) {San-nin izyoo no kyoozyu ga / Kyoozyu san-nin
 three-CL equal:more GEN professor NOM professor three-CL
 izyoo ga / Kyoozyu ga san-nin izyoo} gakusei o
 equal:more NOM professor NOM three-CL equal:more student ACC
 go-nin izyoo suisensita.
 five-CL equal:more recommended
 ‘Three or more professors recommended five or more students.’

- (199) {San-nin izyoo no kyoozyu ga / Kyoozyu san-nin
three-CL equal:more GEN professor NOM professor three-CL
izyoo ga / Kyoozyu ga san-nin izyoo} gakusei
equal:more NOM professor NOM three-CL equal:more student
o subete suisensita.
ACC all recommended
'Three or more professors recommended all students.'
- (200) {San-nin izyoo no kyoozyu ga / Kyoozyu san-nin
three-CL equal:more GEN professor NOM professor three-CL
izyoo ga / Kyoozyu ga san-nin izyoo} gakusei o
equal:more NOM professor NOM three-CL equal:more student ACC
sanbun no iti suisensita.
third GEN one recommended
'Three or more professors recommended one third of the students.'

In this paper, we leave open the question as to why the NP + CM + QE form (i.e., (48c)) does not support inverse scope readings. We note, however, that this form is usually unsuitable when there is one and only one possible referent for it (cf. (194)); for example, in the context of (201), (202) is usable while (203) is not.

(201) The speaker is a father who has three and only three children.

(202) Kodomo ga hito-ri sigotoba ni tazunetekita no
child NOM one-CL workplace DAT come:to:visit COMP
desu.
COPULA
'One child (of mine) came to my workplace.'

(203) Kodomo ga san-nin sigotoba ni tazunetekita no
child NOM three-CL workplace DAT come:to:visit COMP
desu.
COPULA
'Three children (of mine) came to my workplace.'

(Incidentally, if the subjects in (202) and (203) are replaced with the QE + no + NP + CM form (i.e., (48a)) or the NP + QE + CM form (i.e., (48b)), the resulting sentences are both usable in the context of (201).)

We now turn to the scope interaction involving existential quantifier analogues built from a *wh*-word. In this section, we only discuss the reading with an existential quantifier analogue built from a *wh*-word taking narrow scope, as it is difficult to determine if the reading with an existing quantifier taking wide scope exists. To ensure that the reading with an existential quantifier taking wide scope exists, we need a situation that makes this reading true but makes the reading with the other scope order false. However, any situations which make

the reading with an existential quantifier taking wide scope with respect to another quantifier true necessarily make the reading with the other scope order true (cf. Reinhart 1976).

When β in (176), repeated below, is an existential quantifier analogue with a *wh*-word, α can take wide scope with respect to β , no matter what type of QNP α is and whether or not the unique set condition is met.

(176) [... α -*ga* ... β -*ni / o* ...], where α and β are QNPs and clause-mates

For example, any combinations of the subject and object items in (204), those in (206), those in (208), and those in (210) give rise to (205), (207), (209), and (211), respectively.

(204) {*Suu-nin no kyoozyu ga / Kyoozyu suu-nin ga / Kyoozyu*
several-CL GEN professor NOM professor several-CL NOM professor
ga suu-nin} *dare ka o suisensita.*
NOM several-CL who P ACC recommended
'Several professors recommended someone.'

(205) There were several professors such that each of them recommended someone.

(206) {*Go-nin izyoo no kyoozyu ga / Kyoozyu go-nin*
five-CL equal:more GEN professor NOM professor five-CL
izyoo ga / Kyoozyu ga go-nin izyoo} *dare ka o*
equal:more NOM professor NOM five-CL equal:more who P ACC
suisensita.
recommended
'Five or more professors recommended someone.'

(207) There were five or more professors such that each of them recommended someone.

(208) {*Subete no kyoozyu ga / Kyoozyu subete ga / Kyoozyu ga*
all GEN professor NOM professor all NOM professor NOM
subete} *dare ka o suisensita.*
all who P ACC recommended
'All professors recommended someone.'

(209) For each professor, there was someone whom he /she recommended.

(210) {*Sanbun no iti no kyoozyu ga / Kyoozyu sanbun no iti*
third GEN one GEN professor NOM professor third GEN one
ga / Kyoozyu ga sanbun no iti} *dare ka o suisensita.*
NOM professor NOM third GEN one who P ACC recommended
'One third of the professors recommended someone.'

(211) For one third of the professors, each of them recommended someone.

When α in (176) is an existential quantifier analogue built from a *wh*-word, β may take wide scope with respect to α . But β has to have the QE + no + NP + CM form (i.e., (48a)) or the NP + QE + CM form (i.e., (48b)), and the unique set condition needs to be met. For example, in the context of (212), all the combinations of the subject and object items in (213), those in (215), those in (217), and those in (219) can be understood to mean (214), (216), (218), and (220), respectively.

(212) You are a department administrative staff member. The head of the department asks you to count the number of students who have received recommendation from someone. You check the students one by one. Did someone recommend John? How about Mary? And so on. You then reply to the head, saying ...

(213) Dare ka ga {suu-nin no gakusei o / gakusei suu-nin
 who P NOM several-CL GEN student ACC student several-CL
 o} suisensiteimasita.
 ACC recommended
 ‘Someone recommended several students.’

(214) There were several students such that each of them was recommended by someone.

(215) Dare ka ga {go-nin izyoo no gakusei o / gakusei go-nin
 who P NOM five-CL equal:more GEN student ACC student five-CL
 izyoo o} suisensiteimasita.
 equal:more ACC recommended
 ‘Someone recommended five or more students.’

(216) There were five or more students such that each of them was recommended by someone.

(217) Dare ka ga {subete no gakusei o / gakusei subete o}
 who P NOM all GEN student ACC student all ACC
 suisensiteimasita.
 recommended
 ‘Someone recommended all the students.’

(218) For each student, there was someone who recommended him/her.

(219) Dare ka ga {sanbun no iti no gakusei o / gakusei sanbun
 who P NOM third GEN one GEN student ACC student third
 no iti o} suisensiteimasita.
 GEN one ACC recommended
 ‘Someone recommended one third of the students.’

- (220) For one third of the students, each of them was recommended by someone.

However, if the objects in the above examples are replaced with the NP + CM + QE form (i.e., (48c)), the inverse scope readings disappear. This is illustrated in (221)–(224).

- (221) Dare ka ga gakusei o suu-nin suisensiteimasita.
 (222) Dare ka ga gakusei o go-nin izyoo suisensiteimasita.
 (223) Dare ka ga gakusei o subete suisensiteimasita.
 (224) Dare ka ga gakusei o sanbun no iti suisensiteimasita.

Let us now come to the scope interaction involving universal quantifier analogues built from a *wh*-word. Here, we only investigate if they can take wide scope with respect to another quantifier, as it is difficult to examine the availability of the other scope order with simple sentences. When α in the configuration of (176), repeated here, is a universal quantifier analogue built from a *wh*-word, α can take wide scope with respect to β , no matter what form β has. For example, any combinations of the subject and object items in (225) can be construed as (226).

- (176) [... α -ga ... β -ni /o ...], where α and β are QNPs and clause-mates

- (225) Dono kyoozyu mo {san-nin izyoo no gakusei o / gakusei
 which professor also three-CL equal:more GEN student ACC student
 san-nin izyoo o / gakusei o san-nin izyoo}
 three-CL equal:more ACC student ACC three-CL equal:more
 suisensita.
 recommended
 ‘Every professor recommended three or more students.’

- (226) For each professor, there are three or more students whom he /she recommended.

But when β is a universal quantifier analogue built from a *wh*-word, β cannot take wide scope with respect to α ; for example, no combinations of the subject and object items in (227) can be taken to mean (228) even if they are uttered in the context of (185), repeated here.

- (185) You are a department administrative staff member. The head of the department asks you to count the number of students who have received recommendation from three or more professors. You check the students one by one. Did John get recommendation from three or more professors? How about Mary? And so on. You then reply to the head, saying ...

- (227) {San-nin izyoo no kyoozyu ga / Kyoozyu san-nin
 three-CL equal:more GEN professor NOM professor three-CL
 izyoo ga / Kyoozyu ga san-nin izyoo} dono gakusei
 equal:more NOM professor NOM three-CL equal:more which student
 ni mo suisenzyoo o kakimasita.
 DAT also reference:letter ACC wrote
 ‘Three or more professors wrote a recommendation letter to every
 student.’
- (228) For each student, there are three or more professors who wrote a
 recommendation letter to him /her.

10.9.2 *Between QNPs and Wh-Words*

The scope interaction between QNPs and *wh*-words is difficult to describe, for we have to investigate it indirectly through possible answers to questions. Here in this paper, following Karttunen (1977), Groenendijk and Stokhof (1984, 1989), and Krifka (2001), among others, we assume that when a given question with the configuration of (229) is answered with a pair-list answer, the QNP takes wide scope with respect to the *wh*-word (contra Engdahl 1985 and Chierchia 1993, who assume that the *wh*-word scopes over the QNP, but its trace is a function variable bound by the QNP). The wide scope reading under discussion is referred to as the *pair-list reading* below.

- (229) [... α -ga ... β -ni /o ...] before *wh*-movement, where one of α and β is a QNP, and the other is a *wh*-word

It has been reported that in English, when α is a QNP and β is a *wh*-word, the question may be answered with a pair-list answer, but it is not so when α is a *wh*-word and β is a QNP (cf. Chierchia 1993). The same seems true with Japanese; for example, the A-B sequence in (230) is felicitous while that in (231) is not.

- (230) A: {Subete no gakusei ga / Gakusei subete ga} dono hon
 all GEN student NOM student all NOM which book
 o yonda ka osiete kudasai.
 ACC read Q teach please
 ‘Please tell me which book every student read.’
- B: Yosio ga *LGB* o, Suzan ga *Barriers* o, ..., sosite Takasi
 Yoshio NOM *LGB* ACC Suzan NOM *Barriers* ACC and Takashi
 ga *MP* o yomimasita.
 NOM *MP* ACC read
 ‘Yoshio read *LGB*, Suzan *Barriers*, ..., and Takashi *MP*.’

- (231) A: *Dono gakusei ga* {subete no hon o / hon subete o}
 which student NOM all GEN book ACC book all ACC
yonda ka osiete kudasai.
 read Q teach please
 ‘Please tell me which student read every book.’
 B: *Yosio ga LGB o, Suzan ga Barriers o, ..., sosite Takasi ga MP o*
yomimasita.

Regarding what types of QNPs can support pair-list readings, researchers’ positions diverge. Some claim that a wide range of QNPs excepting decreasing QNPs give rise to pair-list readings (cf. Lahiri 2002), while others maintain that only universal quantifiers support them (cf. Groenendijk and Stokhof 1984, 1989; Krifka 2001). (Incidentally, many of the researchers in the latter group acknowledge that other types of QNPs appear to give rise to pair-list readings, but analyze them differently from the ‘genuine’ cases involving a universal quantifier; see for example the discussion in Krifka 2001.) We claim that as far as Japanese is concerned, all types of QNPs may support pair-list readings, provided that they have the QE + *no* + NP + CM form (i.e., (48a)) or the NP + QE + CM form (i.e., (48b)). (Recall that Japanese does not have decreasing QNPs; see Section 10.6.1.) For example, with the specified contexts, the A-B sequences in (232)–(233) are felicitous.³⁵

- (232) [Context: Person A is interested in knowing which book each student read, and A tries to discover this from Person B. A suggests that B pick any group consisting of several students and start with them.]
 A: *Zya, mazu (dare demo ii kara) {suu-nin no gakusei ga /*
 then at:first who even:if good since several-CL GEN student NOM
gakusei suu-nin ga} dono hon o yonda ka ittemite kudasai.
 student several-CL NOM which book ACC read Q try:to:tell please
 ‘Then, as a starter please (pick any group of several students and) tell me which book they read.’
 B: *Yosio ga LGB o, Suuzan ga Barriers o, ..., sosite Takasi ga MP o*
yomimasita.
- (233) [Context: Person A is interested in knowing which book each student read, and A tries to discover this from Person B. A suggests that B pick any group consisting of one third of the students, and start with them.]
 A: *Zya, mazu (dare demo ii kara) {sanbun no iti no gakusei*
 then at:first who even:if good since third GEN one GEN student
ga / gakusei sanbun no iti ga} dono hon o yonda ka
 NOM student third GEN one NOM which book ACC read Q

³⁵ We note that some speakers have difficulty in treating the A-B sequence in (233) to be felicitous when the relevant QNP is *gakusei sanbun no iti ga*.

ittemite kudasai.

try:to:tell please

‘Then, as a starter please (pick any group of one third of the students and) tell me which book they read.’

B: Yosio ga *LGB* o, Suuzan ga *Barriers* o, ..., sosite Takasi ga *MP* o yomimasita.

But we point out that, just like inverse scope readings, pair-list readings require that the unique set condition be met. In fact, in the contexts of (230), (232), and (233), in answering A’s question, B associates one and only one set of students with the subject QNP. In the context of (234), on the other hand, A’s question is not about one particular group of students. Thus, in answering A’s question, B would have more than one set of students that can possibly be the extension of the relevant QNP.

(234) B: Watasi wa donna hon ga ninki ga atta ka nado
 I TOP what:kind book NOM popularity NOM existed Q so:on
 zyookyoo o yoku haakusiteiru tumori desu.
 situation ACC well know assume COPULA
 ‘I am aware of the situation well such as what kinds of books are popular.’

A: Zya, ninki no aru hon o siritai kara,
 then popularity GEN exist book ACC want:to:know because
 {suu-nin no gakusei ga / gakusei suu-nin ga} dono hon
 several-CL GEN student NOM student several-CL NOM which book
 o yonda ka osiete kudasai.

ACC read Q tell please

‘Then, since I would like to know what is popular, please tell me which book several students read!’

B: Yosio ga *LGB* o, Suuzan ga *Barriers* o, ..., sosite Takasi ga *MP* o yomimasita.

In this situation, pair-list answers are not possible—the B-A-B sequence in (234) is not felicitous. Here B must reply to A’s request with a single constituent answer such as (235).

(235) (Suu-nin no gakusei ga yonda no wa) *LGB* desu.
 several-CL GEN student NOM read COMP TOP *LGB* COPULA
 ‘(What several students read was) *LGB*.’

One may thus suggest that pair-list readings must be analyzed on a par with inverse scope readings (cf. Hayashishita 2004). In fact, the resemblance between them can be demonstrated extensively. Recall that inverse scope readings are not possible if the wide-scope taking expression (i.e., β in (176), repeated here) has the NP + CM + QE form (i.e., (48c)).

(176) [... α -ga ... β -ni /o ...], where α and β are QNPs and clause-mates

Similarly, pair-list readings are not possible if the relevant QNP has the NP + CM + QE form. If the A's utterances in (230), (232), and (233) are replaced with (236), (237), and (238), respectively, the following B's utterances become infelicitous. After (236), (237), and (238), B must reply with a single constituent answer.

(236) *Gakusei ga subete dono hon o yonda ka osiete kudasai.*

(237) *Zya, mazu (dare demo ii kara) gakusei ga suu-nin dono hon o yonda ka ittemite kudasai.*

(238) *Zya, mazu (dare demo ii kara) gakusei ga sanbun no iti dono hon o yonda ka ittemite kudasai.*

We have observed above that if β in (176), repeated above, is a universal quantifier analogue based on a *wh*-word, β cannot take wide scope with respect to α ; see (227). Similarly, if the QNP in (229), repeated below, is a universal quantifier analogue based on a *wh*-word, the question cannot be replied to with a pair-list answer. For example, (unlike the A-B sequence in (230)) the A-B sequence in (239) is not possible, and in this situation B must reply with a single constituent answer.

(229) [... α -ga ... β -ni /o ...] before *wh*-movement, where one of α and β is a QNP, and the other is a *wh*-word

(239) A: *Dono gakusei mo dono hon o yonda ka osiete kudasai.*
 which student also which book ACC read Q teach please
 ‘Please tell me which book every student read.’

B: *Yosio ga LGB o, Suuzan ga Barriers o, ..., sosite Takasi ga MP o yomimasita.*

10.9.3 *Between QNPs and Negation*

We now turn to the scope interaction between QNPs and negation. Since we believe that negation is sensitive to focus—its meaning makes reference to a set of alternative choices under consideration, we describe the scope interaction under discussion, paying close attention to this factor.³⁶ In what follows, we call

³⁶ Regarding the scope interaction between QNPs and negation, some linguists propose generalizations; e.g., Kuno (1980), Imani (1993), Miyagawa (2001), Kataoka (2006). However, these generalizations are controversial, perhaps in part because they do not pay close attention to the locations of focused phrases. In contrast, Kato (1985, 1988) considers the locations of focused phrases; however, he makes a number of stipulations in order to account for certain scope orders—he in effect maintains that a given QNP takes narrow scope with respect to negation only if it is a focused phrase (cf. Kato 1985:100 [25]). We cannot agree the generalization Kato attempts to capture in his analysis.

a phrase in a sentence whose denotation is among alternative choices a *focused phrase*. Following the standard practice, we mark focused phrases with the subscript F below.

We first describe the scope interaction between QNPs and negation, limiting our attention to cases where both the relevant QNP and negation are within a focused phrase. Consider the situation in (240).

- (240) People are wondering for what reason John has been mad. The speaker attempts to explain the reason.

In this situation, the speaker's utterance would contain a reason, and the phrase expressing the reason would become a focused phrase. As we see shortly, in this situation, no matter what form the relevant QNP has—the QE + *no* + NP + CM form (i.e., (48a)), the NP + QE + CM form (i.e., (48b)), or the NP + CM + QE form (i.e., (48b))—it may take wide or narrow scope with respect to its clause-mate negation. (241), for example, can be understood to mean (242a) or (242b).

- (241) John wa [Bill ga {san-nin no zyosei o / zyosei san-nin
John TOP Bill NOM three-CL GEN woman ACC woman three-CL
o / zyosei o san-nin} syootaisi-nak-atta node]_F okotteiru.
ACC woman ACC three-CL invite-NEG-PAST because is:mad
'John is mad because Bill did not invite three women.'

- (242) a. John is mad because there are three women whom Bill did not invite.
b. John is mad because it is not the case that Bill invited three women.

Similarly, (243), (245), and (247) give rise to both scope orders: (243) can be taken to mean (244a) or (244b); we can understand (245) to mean (246a) or (246b); (247) can give rise to both (248a) and (248b).

- (243) John wa [Bill ga {san-nin izyoo no zyosei o / zyosei
John TOP Bill NOM three-CL equal:more GEN woman ACC woman
san-nin izyoo o / zyosei o san-nin izyoo}
three-CL equal:more ACC woman ACC three-CL equal:more
syootaisi-nak-atta node]_F okotteiru.
invite-NEG-PAST because is:mad
'John is mad because Bill did not invite three or more women.'

- (244) a. John is mad because there are three or more women whom Bill did not invite.
b. John is mad because it is not the case that Bill invited three or more women.

- (245) John wa [Bill ga {subete no zyosei o / zyosei subete o /
John TOP Bill NOM all GEN woman ACC woman all ACC
zyosei o subete} syootaisi-nak-atta node]_F okotteiru.
woman ACC all invite-NEG-PAST because is:mad
'John is mad because Bill did not invite all women.'
- (246) a. John is mad because Bill did not invite any women.
b. John is mad because it is not the case that Bill invited all women.
- (247) John wa [Bill ga {sanbun no iti no zyosei o / zyosei
John TOP Bill NOM third GEN one GEN woman ACC woman
sanbun no iti o / zyosei o sanbun no iti}
third GEN one ACC woman ACC third GEN one
syootaisi-nak-atta node]_F okotteiru.
invite-NEG-PAST because is:mad
'John is mad because Bill did not invite one third of the women.'
- (248) a. John is mad because for one third of the women, Bill did not invite
them.
b. John is mad because it is not the case that Bill invited one third of
the women.

We now discuss cases where the verb phrase next to negation is a focused phrase, and the relevant QNP is in the verb phrase. As we demonstrate directly, in these cases, the negation necessarily takes wide scope with respect to the QNP. For example, imagine the situation in (249).

- (249) There is a project to be carried out. Before starting the project, several things need to be completed. The project leader asks the speaker to report what has been completed and what has not been.

In this situation, the set of alternative choices is those things needing to be completed before starting the project. Now consider in this situation the utterance in (250) together with its specified context.

- (250) [Context: Among the things needing to be completed are to secure 10 sawmill machines and to convince five workers to work for this project.]
- 10-dai no seizaikikai wa karimasita ga, mada [{go-nin no
10-CL GEN sawmill TOP rented but still five-CL GEN
sagyooiin o / sagyooiin go-nin o / sagyooiin o go-nin}
worker ACC worker five-CL ACC worker ACC five-CL
settokusitei]_F-masen.
convince-NEG
'Although we rented 10 sawmill machines, we have not convinced five workers yet.'

Regarding the scope interaction in the second sentence of (250), the negation necessarily takes wide scope with respect to the relevant QNP—the second sentence can be taken to mean (251b) but not (251a).

- (251) a. There are five workers that we have not convinced (to work for the project).
 b. It is not the case that we have convinced five workers (to work for the project).

Similarly, the second sentence of (252) is understood to mean (253b), but not (253a); that of (254) gives rise to (255b) but not to (255a); (256) is taken to mean (257b) but not (257a).

- (252) [Context: Among the things needing to be completed are to secure 10 sawmill machines and to convince five or more workers to work for this project.]

10-dai no seizaikikai wa karimasita ga, mada [{go-nin izyoo
 10-CL GEN sawmill TOP rented but still five-CL equal:more
 no sagyooiin o / sagyooiin go-nin izyoo o / sagyooiin o
 GEN worker ACC worker five-CL equal:more ACC worker ACC
 go-nin izyoo} settokusitei]_F-masen.
 five-CL equal:more convince-NEG

‘Although we rented 10 sawmill machines, we have not convinced five or more workers yet.’

- (253) a. There are five or more workers that we have not convinced (to work for the project).
 b. It is not the case that we have convinced five or more workers (to work for the project).

- (254) [Context: Among the things needing to be completed are to secure 10 sawmill machines and to convince all of the workers to work for this project.]

10-dai no seizaikikai wa karimasita ga, mada [{subete no
 10-CL GEN sawmill TOP rented but still all GEN
 sagyooiin o / sagyooiin subete o / sagyooiin o subete}
 worker ACC worker all ACC worker ACC all
 settokusitei]_F-masen.
 convince-NEG

‘Although we rented 10 sawmill machines, we have not convinced all the workers yet.’

- (255) a. For each worker, we have not convinced him/her (to work for the project).
 b. It is not the case that we have convinced each worker (to work for the project).

- (256) [Context: Among the things needing to be completed are to secure 10 sawmill machines and to convince one third of the workers to work for this project.]

10-dai no seizaikikai wa karimasita ga, mada [{sanbun no iti
10-CL GEN sawmill TOP rented but still third GEN one
no sagyooiin o / sagyooiin sanbun no iti o / sagyooiin o
GEN worker ACC worker third GEN one ACC worker ACC
sanbun no iti} settokusitei]_F-masen.
third GEN one convince-NEG

‘Although we rented 10 sawmill machines, we have not convinced one third of the workers yet.’

- (257) a. There are one third of the workers that we have not convinced (to work for the project).
b. It is not the case that we have convinced one third of the workers (to work for the project).

Let us now turn to cases where QNPs are focused phrases. In these cases, as we illustrate directly, the relevant QNP takes wide scope with respect to its clause-mate negation. For example, consider the situation in (258), to which any utterance made in direct response would make the relevant QNP a focused phrase.

- (258) The department administrator asks the speaker to find out who Prof. Kimura recommended, who he did not recommend, how many students he recommended, how many students he did not recommend, and so on.

If (259) is uttered in the situation of (258), the second sentence may be taken to mean (260a) but not (260b).

- (259) Kimura sensei wa go-nin no dansigakusei o suisensi,
Kimura teacher TOP five-CL GEN male:student ACC recommend
sosite [{san-nin no zyosigakusei o]_F/ [zyosigakusei san-nin
and three-CL GEN female:student ACC female:student three-CL
o]_F/ [zyosigakusei o san-nin]_F} suisensi-masen-desita.
ACC female:student ACC three-CL recommend-NEG-PAST
‘Prof. Kimura recommended five male students, and he did not recommend three female students.’

- (260) a. There are three female students that Prof. Kimura did not recommend.
b. It is not the case that Prof. Kimura recommended three female students.

The same point can be illustrated with other types of QNPs. In the situation of (258), the second sentence of (261), that of (263), and that of (265) give rise to (262a), (264a), and (266a) but not to (262b), (264b), and (266b), respectively.

- (261) Kimura sensei wa go-nin no dansigakusei o suisensi,
 Kimura teacher TOP five-CL GEN male:student ACC recommend
 sosite {[san-nin izyoo no zyosigakusei o]_F / [zyosigakusei
 and three-CL equal:more GEN female:student ACC female:student
 san-nin izyoo o]_F / [zyosigakusei o san-nin izyoo]_F
 three-CL equal:more ACC female:student ACC three-CL equal:more
 suisensi-masen-desita.
 recommend-NEG-PAST
 ‘Prof. Kimura recommended five male students, and he did not
 recommend three or more female students.’
- (262) a. There are three or more female students that Prof. Kimura did not
 recommend.
 b. It is not the case that Prof. Kimura recommended three or more
 female students.
- (263) Kimura sensei wa go-nin no dansigakusei o suisensi,
 Kimura teacher TOP five-CL GEN male:student ACC recommend
 sosite {[subete no zyosigakusei o]_F / [zyosigakusei subete o]_F /
 and all GEN female:student ACC female:student all ACC
 [zyosigakusei o subete]_F suisensi-masen-desita.
 female:student ACC all recommend-NEG-PAST
 ‘Prof. Kimura recommended five male students, and he did not
 recommend all the female students.’
- (264) a. For each female student, Prof. Kimura did not recommend her.
 b. It is not the case that Prof. Kimura recommended each female
 student.
- (265) Kimura sensei wa go-nin no dansigakusei o suisensi,
 Kimura teacher TOP five-CL GEN male:student ACC recommend
 sosite {[sanbun no iti no zyosigakusei o]_F / [zyosigakusei
 and third GEN one GEN female:student ACC female:student
 sanbun no iti o]_F / [zyosigakusei o sanbun no iti]_F}
 third GEN one ACC female:student ACC third GEN one
 suisensi-masen-desita.
 recommend-NEG-PAST
 ‘Prof. Kimura recommended five male students, and he did not
 recommend one third of the female students.’
- (266) a. For one third of the female students, Prof. Kimura did not
 recommend them.
 b. It is not the case that Prof. Kimura recommended one third of the
 female students.

10.10 Complex Quantifiers

We consider to what extent the complex quantifiers found in English are available in Japanese.

10.10.1 Type (2) Quantifier Analogues

In this section, we list some of what appears to be Type (2) quantifiers, which are functions expressing a property of binary relations—functions which are probably not reducible to the iterated applications of two functions of Type (1,1). First, to interpret the words that express the meaning of *different* or *same* requires the computation of two separate domains. Thus, arguably, they are type (2) quantifiers. Here we illustrate several cases.

- (267) a. {Subete no gakusei ga / Gakusei subete ga / Gakusei ga
all GEN student NOM student all NOM student NOM
subete} *tigau* kaisya ni syuusyokusita.
all different company DAT got:employed
'All the students got a job offer from a different company.'
- b. {Zen-bu no zidoosyagaisya ga / Zidoosyagaisya
all-CL GEN automobile:company NOM automobile:company
zen-bu ga / Zidoosyagaisya ga zen-bu} *onazi* ginkoo
all-CL NOM automobile:company NOM all-CL same bank
to torihikisiteiru.
with is:dealing
'All the automobile companies are dealing with the same bank.'
- c. *Tigau* gakusei ga *tigau* situmon ni kotaeta.
different student NOM different question DAT answered
'Different students answered different questions.'

Second, the sentences in (268a) and in (269a) can be taken to mean (268b) and (269b), respectively, suggesting that the two *wh*-words in each sentence form Type (2) quantifiers.

- (268) a. Kondo no ongakkai de wa *dare ga nani o* hiku
this:time GEN concert at TOP who NOM what ACC play
koto ni narimasita ka.
COMP DAT became Q
'At this coming concert, who plays what?'
- b. What are the set of pairs (x, y) such that x is a person, y is a musical instrument, and x plays y at this coming concert?

- (269) a. *Kondo no dansu paatii de wa dono dansigakusei ga*
 this:time GEN dance party at TOP which male:student NOM
dono zyosigakusei to dansusuru koto ni narimasita ka.
 which female:student with dance COMP DAT became Q
 ‘At this coming dance party, which male student dances with which
 female student?’
 b. What are the set of pairs (x, y) such that x is a male student, y is a
 female student, and x dances with y at this coming dance party?

Our third example comes from so-called focus-sensitive particles (= FPs). We have observed in Section 10.7 that when they modify an NP, FPs may appear either (i) between the NP and the CM of the NP-CM unit or (ii) after the NP-CM unit. For convenience, we refer to (i) as *the FP internal order* and (ii) as *the FP external order*. As pointed out by Hayashishita (2011), if in a sentence, two or more instances of FPs appear both in the FP internal order, then one prominent reading associated with the sentence is that within which they are scopally independent from each other. For example, (270a) and (271a) are associated with (270b) and (271b), respectively. Thus, we suggest that two instances of FPs in the FP internal order may form Type (2) quantifiers.

- (270) a. *John wa Kimura sensei dake ni Kyoto daigaku dake de*
 John TOP Kimura teacher only DAT Kyoto university only at
 aisatusita.
 greeted
 ‘(Lit.) John greeted only Prof. Kimura only at Kyoto University.’
 b. There is no x other than Prof. Kimura and no y other than Kyoto
 University such that John greeted x at y .
- (271) a. *John dake ga NELS dake de ronbun o happyoosimasita.*
 John only NOM NELS only at paper ACC presented
 ‘Only John presented a paper only at NELS.’
 b. There is no x other than John and no y other than NELS such that
 x presented a paper at y .

Incidentally, as Hayashishita (2011) points out, if one of the two instances of FPs above appears in the FP external order, the scope-independent reading under discussion cannot be obtained. For example, unlike (270a), the sentences in (272) are necessarily taken to mean (273).

- (272) a. *John wa Kimura sensei ni dake Kyoto daigaku de dake aisatusita.*
 b. *John wa Kimura sensei dake ni Kyoto daigaku de dake aisatusita.*
- (273) There is no person other than Prof. Kimura such that John greeted him
 at no place other than Kyoto University.

Our fourth example is Japanese comparatives. To express what the English *more ... than* comparative means, we may use one of the three constructions schematized in (274). The three constructions are exemplified in (275).

- (274) a. [... [[NP *yori*] X] ...], where X is a gradable expression
 b. [... [[NP CM Verb *yori*] X] ...], where X is a gradable expression
 c. [... [[NP CM *yori*] X] ...], where X is a gradable expression

- (275) a. Taroo wa [[Hanako *yori*] *sakini*] Satiko ni hanasikaketa.
 ‘Taro talked to Sachiko earli[er] than Hanako.’
 b. Taroo wa [[Hanako ni hanasikakeru *yori*] *sakini*] Satiko
 Taro TOP Hanako DAT talk than early Sachiko
 ni hanasikaketa.
 DAT talked
 ‘Taro talked to Sachiko earli[er] than [he] talked to Hanako.’
 c. Taroo wa [[Hanako ni *yori*] *sakini*] Satiko ni hanasikaketa.
 ‘Taro talked to Sachiko earli[er] than to Hanako.’

As we illustrate directly, we can illustrate Type (2) quantifiers, using the constructions in (274a) and in (274b), but not the construction in (274c). When two instances of comparisons are expressed in a sentence, using the construction in (274a), the scope of one comparison may be independent from the scope of the other comparison. For example, (276a) and (277a) can be understood to mean (276b) and (277b), respectively.

- (276) a. [[*John yori sakini*] *Bill ga* [[*LGB yori sakini*] *Aspects o*
 John than early Bill NOM LGB than early Aspects ACC
yomioemasita.
 finished:reading
 ‘Bill finished reading *Aspects* earli[er] than *LGB* earli[er] than John did.’
 b. Bill finished reading a book earlier than John, and he read *Aspects* earlier than *LGB*.
- (277) a. Kimura sensei wa [[*John yori sakini*] *Bill ni* [[*sintakkusu*
 Kimura teacher TOP John than early Bill DAT syntax
no zyugyoo yori sakini] *semantikkusu no zyugyoo de ronbun*
 GEN class than early semantics GEN class at paper
 o happyoo-sase-masita.
 ACC present-cause-PAST
 ‘Prof. Kimura made Bill present in the semantics class earli[er] than in the syntax class earli[er] than he made John do.’
 b. Prof. Kimura made Bill present a paper earlier than John, and he made Bill present at the semantics course earlier than at the syntax course.

Similarly, (278) and (279), which make use of the construction in (274b), can give rise to (276b) and (277b), respectively.

(278) [[*John ga yomu yori*] *sakini*] *Bill ga* [[*LGB o yomu yori*] *sakini*] *Aspects o yomioemasita.*

(279) *Kimura sensei wa* [[*John ni happyoo-sase-ru yori*] *sakini*] *Bill ni* [[*sintakkusu no zyugyoo-de happyoo-sase-ru yori*] *sakini*] *semantikkusu no zyugyoo de ronbun o happyoo-sase-masita.*

On the other hand, using the construction in (274c), the scope of one comparison must be within the scope of the other comparison—with the construction in (274c), we cannot illustrate Type (2) quantifiers. For example, (280a) contrasts with (277a) and (279) in that it cannot give rise to the reading in (277b); it must be taken to mean (280b).³⁷

- (280) a. *Kimura sensei wa* [[*John ni yori*] *sakini*] *Bill ni* [[*sintakkusu no zyugyoo de yori*] *sakini*] *semantikkusu no zyugyoo de ronbun o happyoo-sase-masita.*
 b. Prof. Kimura made Bill present a paper at the semantics course earlier than at the syntax course, earlier than he made John do.

10.10.2 Type ((1,1),1) Quantifier Analogues

10.10.2.1 Comparative D-Quantifiers

In English, comparative D-quantifiers can be constructed as in (281). We claim that Japanese does not have their analogues.

- (281) a. More students than teachers came to the party.
 b. John invited more male students than female students.
 c. At least as many students as teachers came to the party.
 d. John invited at least as many male students as female students.

One might argue that the sentences in (281) correspond to those in (282).³⁸

³⁷ Hoji (1998, 2003a) argues that the comparative constructions in (274a) and in (274b) must be analyzed differently from the construction in (274c). The contrast between (277a) and (279) on the one hand and (280a) on the other is thus in support of Hoji's position.

³⁸ The sentences in (282) use the QE + no + NP + CM pattern (i.e., (48a)) and the NP + CM + QE pattern (i.e., (48c)). If the NP + QE + CM pattern is used, they become unacceptable; see (i).

- (i) a. **Gakusei sensei yori takusan ga paatii ni kita.*
 b. **John wa dansigakusei zyosigakusei yori takusan o syootaisita.*
 c. **Gakusei sukunakutomo sensei to onazi gurai no kazu ga paatii ni kita.*
 d. **John wa dansigakusei sukunakutomo zyosigakusei to onazi gurai no kazu o syootaisita.*

- (282) a. {*Sensei yori takusan no gakusei ga* / *Gakusei ga sensei yori takusan*} paatii ni kita.
 teacher than many GEN student NOM student NOM teacher
 than many party DAT came
 ‘More students than teachers came to the party.’
- b. John wa {*zyosigakusei yori takusan no dansigakusei o* / *dansigakusei o zyosigakusei yori takusan*} syootaisita.
 John TOP female:student than many GEN male:student ACC
 male:student ACC female:student than many invited
 ‘John invited more male students than female students.’
- c. {*Sukunakutomo sensei to onazi gurai no kazu no*
 at:least teacher with same about GEN number GEN
gakusei ga / *Gakusei ga sukunakutomo sensei to onazi*
 student NOM student NOM at:least teacher with same
gurai no kazu} paatii ni kita.
 about GEN number party DAT came
 ‘At least as many students as teachers came to the party’
- d. John wa {*sukunakutomo zyosigakusei to onazi gurai no*
 John TOP at:least female:student with same about GEN
kazu no dansigakusei o / *dansigakusei o*
 number GEN male:student ACC male:student ACC
sukunakutomo zyosigakusei to onazi gurai no kazu}
 at:least female:student with same about GEN number
 syootaisita.
 invited
 ‘John invited at least as many male students as female students.’

But the sentences in (282) are different from those in (281). For example, (281a) and (281c) compare the number of the students who came to the party and that of the teachers who came to the party. By contrast, with (282a) and (282c), the number of the students who came to the party is simply described in terms of the number of the teachers in the relevant context (possibly the number of the teachers in the students’ school). It may thus turn out that the teachers, whose number is compared with the number of the students, did not come to the party.

10.10.2.2 Combinations with Conjunctions

In English, it is possible that one quantifier takes two or more NPs. For example, (283a) and (284a) can be understood to mean (283b) and (284b), respectively.

- (283) a. Every man, woman, and child jumped overboard.
 b. Every man, every woman, and every child jumped overboard.

- (284) a. Some man, woman or child works on Sunday.
 b. Some man or some woman or some child works on Sunday.

In Japanese, we can do the same, using the NP + QE + CM or NP + CM + QE pattern (i.e., (48b) or (48c)). For example, (285a) and (286a) can be taken to mean (285b) and (286b), respectively.

- (285) a. *{A gumi no gakusei to B gumi no gakusei subete ga | A gumi no gakusei to B gumi no gakusei ga subete}* kita.
 A class GEN student and B class GEN student all NOM A class GEN student and B class GEN student NOM all came
 ‘All the students from Class A and Class B came.’
 b. Every student from Class A and every student from Class B came.
- (286) a. Seihi wa *{Mituikei no ginkoo to Risonakei no ginkoo zen-bu o | Mituikei no ginkoo to Risonakei no ginkoo o zen-bu}* enzyosita.
 government TOP Mitsui:related GEN bank and Resona:related GEN bank all-CL ACC Mitsui:related GEN bank and Resona:related GEN bank ACC all-CL supported
 ‘The government supported every Mitsui-related bank and Resona-related bank.’
 b. The government supported every Mitsui-related bank and every Resona-related bank.

Similarly, we may understand (287a) and (288a) to mean (287b) and (288b), respectively.

- (287) a. *{A gumi no gakusei ka B gumi no gakusei suu-nin ga | A gumi no gakusei ka B gumi no gakusei ga suu-nin}* kita.
 A class GEN student or B class GEN student several-CL NOM A class GEN student or B class GEN student NOM several-CL came
 ‘A few students from Class A or from Class B came.’
 b. A few students from Class A or a few students from Class B came.
- (288) a. Seihi wa *{Mituikei no ginkoo ka Risonakei no ginkoo san-sya o | Mituikei no ginkoo ka Risonakei no ginkoo o san-sya}* enzyosita.
 government TOP Mitsui:related GEN bank or Resona:related GEN bank three-CL ACC Mitsui:related GEN bank or Resona:related GEN bank ACC three-CL supported
 ‘The government supported three Mitsui related banks or Resona related banks.’
 b. The government supported three Mitsui related banks or three Resona related banks.

With the QE + *no* + NP + CM pattern, the situation is different. (289a) does not necessarily give rise to (285b); it may mean (289b). Similarly, (290a) can be understood to mean (290b).

- (289) a. *Subete no A gumi no gakusei to B gumi no gakusei ga kita.*
 b. Every student from Class A and some students from Class B came.
- (290) a. *Seihu wa san-sya no Mituiki no ginkoo ka Risonakei no ginkoo o enzyosita.*
 b. The government supported three Mitsui related banks or some Resona related banks.

10.10.3 Type (1, (1,1)) Quantifier Analogues

In English, we observe Type (1, (1,1)) quantifiers—cases where there is just one conservativity domain but two predicate properties; e.g., the sentences in (291).

- (291) a. More students came to the party than studied for their exam.
 b. The same students came early as left late.

We are not sure that Japanese has such cases. For example, to express what (291a) means in Japanese, we use a sentence like (292), in which two ‘conservativity domains’ are mentioned.

- (292) *Paatii ni kita gakusei no kazu wa siken no tameni*
 party DAT came student GEN number TOP test GEN for
benkyoosita gakusei no kazu yori ooi.
 studied student GEN number than many
 ‘The number of students who came to the party is larger than that of students who studied for their tests.’

To express what (291b) means, we may use the sentences in (293).

- (293) a. *Hayaku kita gakusei wa osoku made nokotta gakusei*
 early came student TOP late until remained student
da.
 COPULA
 ‘The students who came early are those who remained until late.’
- b. *Osoku made nokotteita no to onazi gakusei ga hayaku kara*
 late until remained one with same student NOM early from
kiteita.
 came
 ‘(It turned out) the same students who remained until late came early.’

Like (292), (293a) explicitly mentions two conservativity domains. (293b), on the other hand, appears to have only one conservativity domain. We note, however, that since the word *no* can be a replacement of an NP, it is reasonable to assume it to mean *gakusei* ‘students’. It may thus turn out that (293b) also mentions two conservativity domains.

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Chapter 11

Malagasy Quantifiers*

Rita Hanitramalala and Ileana Paul

11.1 Introduction

In this paper we explore the various syntactic and morphological means used to express quantification in Malagasy. Malagasy is an Austronesian language spoken throughout Madagascar and has been described in some detail both in traditional grammars (e.g. Domenichini-Ramiaramanana 1977, Rahajarizafy 1960, Rajemisa-Raolison 1971) and by structuralist and generative linguists (e.g. Dez 1980a, 1990, Keenan 1976, Paul 2000, Pearson 2001, 2005, Rajaona 1972). More recently, Keenan (2007) provides an overview of some of the quantificational strategies in Malagasy – this paper expands on these. As we will see, Malagasy has a range of both D-quantifiers (those that appear within the nominal domain) and A-quantifiers (those that modify VP or the clause as a whole). On the other hand, Malagasy quantifiers do not pattern with determiners in this language. The goal of this paper is essentially descriptive. The organization follows the questionnaire supplied by the editors.

Some background on Malagasy syntax is necessary before we discuss the data in any detail. Malagasy is a VOS language with fairly rigid word order. There is some debate over the status of the clause-final argument – it behaves more like an A-bar element than a subject and hence is often called a topic (Pearson 2005 is a recent analysis). For the purposes of this paper, we will refer to it as a subject. Like many languages in the family, Malagasy also has a rich verbal morphology, often called ‘voice’. The verbal morphology indicates (roughly) the semantic role of the subject. Again there is much debate over the nature of the verbal morphology, but that debate is tangential to this paper. Finally, subject-initial word order is possible if the subject is topicalized or

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focussed – several examples of fronting will be seen in the examples in this paper. We also note the following non-obvious glossing conventions. The ubiquitous preposition (*t*)*ami*(*na*) is glossed simply as ‘*p*’. The preposition *an-* marks (some) direct objects and is always glossed *acc*. *An-* is also a locative marker meaning roughly *at*, and a predicate possessor marker as in *That is John’s*. The proper noun article *i* is not glossed.

The Malagasy DP is head-initial (see Ntelitheos 2006); the basic order of elements is given in (1) and an example is provided in (2).

- (1) det/dem + N + poss’r + adj + numerals + quantifiers + rel clause + dem
- (2) ny alika kely fotsy tsara tarehy anankiray
 det dog little white good face one
 ‘one pretty little white dog’ (Dez 1990:105)

Demonstratives typically ‘frame’ the DP – in other words, they appear at the beginning (like determiners) and at the end (almost like a phrasal circumfix). An example with *io* (proximal, visible, singular) is given below:

- (3) Ento any io olona ratsy fanahy io.
 carry.imp there dem person bad spirit dem
 ‘Take over there this mean person.’ (Rajemisa-Raolison 1971:54)

Plural is overtly marked only on the demonstratives. Nouns and determiners are underspecified for number, what Corbett (2000) calls ‘general number’.

11.2 Existential (Intersective) Quantifiers

The examples in (4) illustrate some cardinal quantifiers in Malagasy: these typically surface to the right of the head noun, much like adjectival modifiers. Note that the equivalent of a weak existential quantifier can be expressed by the existential construction, as in (4)d.

- (4) a. Nahita [sarin’i Churchill iray] aho teo ambonin’ny
 see picture Churchill one 1sg there on det
 lafaoro
 chimney
 ‘I saw one picture of Churchill above the fireplace.’
- b. Mihira eny an-dalana [ny tantsambo sasany].
 sing there acc-street det sailor certain
 ‘Certain sailors are singing in the street.’
- c. Mihira eny an-dalana [ny tantsambo vitsivitsy].
 sing there acc-street det sailor few.few
 ‘Some sailors are singing in the street.’

- d. Misy [tantsambo mihira] eny an-dalana.
 exist sailor sing there acc-street
 ‘There are sailors singing in the street.’
- e. Nanao fangatahana asa [ny vehivavy maromaro].
 make request work det woman many.many
 ‘Several women applied for work.’

11.2.1 Existentials

Malagasy has a dedicated existential verb, *misy*, that inflects with tense, much like other verbs: *misy* (present), *nisy* (past), *hisy* (future).

- (5) a. Misy vehivavy dimy eo am-pianarana izao.
 exist woman five there acc-class now
 ‘There are five women in the class now.’
- b. Tamin’ ny taon-dasa dia nisy vehivavy folo tao
 p det year-gone top exist woman ten there
 am-pianarana.
 acc-class
 ‘Last year there were ten women in the class.’
- c. Tsy misy vehivavy na dia iray aza eo am-pianarana
 neg exist woman or top one even there acc-class
 izao, kanefa tamin’ ny taon-dasa nisy betsaka.
 now but p det year-gone exist many
 ‘There are no women in the class now, but last year there were many.’

The same verb occurs in interrogatives, but *wh*-questions with *iza* ‘who’ are not grammatical.

- (6) a. Misy olona ao an-trano.
 exist person there acc-house
 ‘There is someone in the house.’
- b. *Iza no misy ao an-trano?
 who foc exist there acc-house
- c. Inona no misy ao an-trano?
 what foc exist there acc-house
 ‘What is (there) in the house?’
- d. Iza no ao an-trano?
 who foc there acc-house
 ‘Who is in the house?’

- e. Mba misy olona (na dia iray/na iray) ve ao an-trano?
 part exist person (or top one/or one) q there acc-house
 'Is there anyone in the house?'
- f. Tsy misy olona (na dia iray/na iray) ao an-trano.
 neg exist person (or top one/or one) there acc-house
 'There isn't anyone in the house.'

The data in (6) and (7) show that in order to express a negative existential, the standard pre-verbal negation *tsy* is used.

- (7) a. Tsy misy voalavo na dia iray aza ao an-trano.
 neg exist rat or top one even there acc-house
 'There aren't any rats at all in the house.'
- b. Tsy nahita voalavo mihitsy aho ao an-trano.
 neg see rat indeed 1sg(nom) there acc-house
 (na dia iray aza)
 (or top one even)
 'I didn't see any rats (at all) in the house.'

The existential verb is also used to express possession (inalienable or integral possession).

- (8) Misy tongotra efatra ny alika.
 exist leg four det dog
 'Dogs have four legs'.

As for the definiteness effect typically found in existential constructions cross-linguistically, it can be found in Malagasy, but with certain exceptions, such as the possessive use, as in (9), where there is no definiteness effect for the possessor.

- (9) a. *Misy mihira ny olon-drehetra.
 exist sing det person-all
 'There is everyone singing.'
- b. Misy tongotra efatra ny alika rehetra.
 exist leg four det dog all
 'All dogs have four legs.'

11.2.2 Numerals and Modified Numerals

Within DP, numerals occur post-nominally and can be modified. Most naturally, however, the numeral occurs as the matrix predicate, as illustrated in (10) (recall that the subject occurs after the predicate).

- (10) a. Mihoatran' ny dimy ny vehivavy ao am-pianarana.
 exceed det five det woman there acc-class
 'More than five women are in the class.'
 lit. 'The women in the class are more than five.'
- b. Dimy ihany ny vehivavy ao am-pianarana.
 five only det woman there acc-class
 'Only five women are in the class.'
 lit. 'The women in the class are only five.'

Below, we give further examples of modified numerals. As noted above, within DP, the modified numeral occurs post-nominally – we have bracketed the relevant DPs. In the first two examples, the DP occupies the subject position, while in (11)c–g, the DP is in the clause-initial focus position. Modified numerals can also be the main predicate, as in (11)h.

- (11) a. Nomena loka [ny mpianatra efa ho zato].
 give prize det student already fut hundred
 'Almost 100 students received a prize.'
- b. Nomena loka [ny mpianatra efa ho zato mahery].
 give prize det student already fut hundred strong
 'More than 100 students received a prize.'
- c. [Gadralava mihoatra ny roa] no nandositra.
 prisoner exceed det two foc escape
 'More than two prisoners escaped.'
- d. [Gadralava zato eo ho eo] no nandositra.
 prisoner hundred here fut here foc escape
 'Around 100 prisoners escaped.'
- e. [Gadralava dimampolo ka hatramin'ny zato
 prisoner fifty and up-to'det hundred
 eo ho eo] no nandositra.
 here fut here foc escape
 'Between 50 and 100 prisoners escaped.'

- f. [Gadralava farafahakeliny roa] no nandositra.
 prisoner least two foc escape
 ‘At least two prisoners escaped.’
- g. [Gadralava latsaka ny zato] no nandositra.
 prisoner fall det hundred foc escape
 ‘Fewer than 100 prisoners escaped.’
- h. Saika zato ny gadralava nandositra.
 almost hundred det prisoner escape
 ‘Almost 100 prisoners escaped.’
 lit. ‘The prisoners who escaped were almost 100.’

Malagasy does not have the equivalent of English ‘no’ – a negated existential is used to express the equivalent.

- (12) Tsy misy vehivavy ao am-pianarana.
 neg exist woman there acc-class
 ‘No woman is in the class. / There aren’t any women in the class.’

11.2.3 Value Judgment Cardinals

Malagasy has some value judgement cardinals, and they pattern with other modifiers, appearing post-nominally (13)a–d or as the matrix predicate (13)e,f. Unlike in English, *tena* ‘very’ cannot modify a quantifier – we leave this unexplained.

- (13) a. Nanadihady [mpifaninana mahay (*tena) betsaka/
 examine candidate able (*very) many /
 vitsy kely/maro be] i John.
 few little/many big John
 ‘John examined many/few/numerous qualified candidates.’
- b. Nanatrika ny fivoriana [ny mpianatra maro / tsy dia maro].
 attend det meeting det student many / neg top many
 ‘Many / not enough students attended the meeting.’
- c. Tonga tamin’ ny fety [ny mpandraharaha vitsy kely].
 arrive p det party det administrator few little
 ‘Few administrators came to the party.’
- d. Tonga tamin’ ny fety [ny mpandraharaha maro].
 arrive p det party det administrator many
 ‘Many administrators came to the party.’

- e. Vitsy loatra [ny mpianatra tonga].
 few too det student arrive
 ‘The students who came were too few.’
- f. Betsaka loatra [ny gadralava nandositra].
 many too det prisoner escape
 ‘The prisoners who escaped were too many.’

11.2.4 Interrogatives

Interrogatives are possible within the DP, although they tend to surface as the predicate (much like numerals), as seen in the (b) and (d) examples below.

- (14) a. [Mpianatra firy] no tonga namaky boky?
 student how-many foc arrive read book
 ‘How many students came to the book reading?’
- b. Firy ny isan’ ny mpianatra tonga namaky
 how-many det number det student arrive read
 boky?
 book
 ‘How many students came to read books?’
 lit. ‘How many is the number of students who came to read books?’
- c. [Mpianatra iza] no afa-panadianana?
 student who foc free-exam
 ‘Which students passed the exam?’
- d. Iza avy ny mpianatra afa-panadinana?
 who all det student free-exam
 ‘Which students passed the exam?’

Note that examples (14)a,c involve focus fronting, where the fronted element has been argued to be a predicate (Paul 2001, Potsdam 2006, see Law 2007 for an alternative view).

11.2.5 Boolean Compounds

Although (15) expresses roughly the equivalent of the English translation, it is not possible to replace the complementizer *fa* by a conjunction (*ary* or *sy*). We gloss *fa* as a complementizer, as this is how it typically surfaces. In particular, *fa* can only be used as a connector between clauses or possibly VPs, never between NPs. In these examples, the quantifiers are once again in the predicate position.

- (15) a. Tsy nandilatra ny folo ny mpianatra tonga nandihy.
 neg touch det ten det student arrive dance
 ‘Not more than ten students came to dance.’
 lit. ‘The students who came to dance did not exceed ten.’
- b. Roa ny farafahakeliny fa/*ary/*sy tsy nandilatra ny folo
 two det least but/*and/*and neg touch det ten
 ny mpianatra tonga nandihy.
 det student arrive dance
 ‘At least two but not more than ten students came to dance.’

11.2.6 Numeral Classifiers, Containers and Measure Phrases

Like English, Malagasy is not a classifier language and uses containers and measure phrases to count units of mass nouns.

- (16) a. divay roa tavoahangy
 wine two bottle
 ‘two bottles of wine’
- b. ronono iray baoritra
 milk one carton
 ‘one carton of milk’
- c. landy telo metatra
 silk three metre
 ‘three metres of silk’

Note that the measure phrase occurs post-nominally, like other modifiers in DPs, and that the numeral precedes the measure unit. This word order is also found with measure phrases of time and distance, as illustrated in the next section.

- (17) a. sira iray kilao
 salt one kilo
 ‘one kilo of salt’
- b. fromazy iray kilao
 cheese one kilo
 ‘one kilo of cheese’

11.2.7 Units of Time and Distance

Unlike most other instances we have seen of modification by a numeral, numerals precede nouns of time and distance.

- (18) a. Natory nandritran' [ny folo ora] aho.
 sleep during det ten hour 1sg
 'I slept for ten hours.'
- b. Hiverina aho afaka [fito andro].
 return 1sg free seven day
 'I will return in seven days.'
- c. Misy fito andro anatin' [ny iray herin'andro].
 exist seven day in det one week
 'There are seven days in one week.'
- (19) a. [Efapolo kilometatra] miala an'i Paris no misy
 forty kilometre leave acc'Paris foc exist
 an'i Fontainebleau.
 acc'Fontainebleau
 'Fontainebleau is forty kilometres from Paris.'
- b. Lava kokoa [telo sentimetatra] noho i Bill i John.
 long more three centimetres than Bill John
 'John is three centimetres taller than Bill.'

In this way, measure phrases of time and distance pattern more generally with measure phrases (e.g. of mass).

11.2.8 *A-Quantifiers*

We now turn to adverbial expressions that quantify over events, much like the D-quantifiers quantify over individuals. We give some examples of intersective A-quantifiers. In (20), the quantificational adverbs appear after the subject, though they can precede the subject.

- (20) a. Mandeha tongotra mankany an-tsekoly aho [indraindray].
 go foot go-there acc-school 1sg(nom) sometimes
 'I sometimes walk to school.'
- b. Mandeha tongotra mankany an-tsekoly aho [mahalana
 go foot go-there acc-school 1sg(nom) rare
 dia mahalana].
 top rare
 'I rarely walk to school.'

In (21), the quantificational adverbs surface between the verb phrase and the subject. This is the typical position for manner adverbs in Malagasy. As we saw above, these adverbs can also surface after the subject.

- (21) a. Nitsidika an'i Tashken [indroa] i John.
 visit acc Tashken twice John
 'John visited Tashkent twice.'
- b. Nitsidika an'i Tashken [in'efatra] i John.
 visit acc Tashkent four-times John
 'John visited Tashkent four times.'
- c. Nitsidika an'i Tashken [matetika] i John
 visit acc Tashkent often John
 'John visited Tashkent often.'

11.3 Generalized Universal (Co-intersective) Quantifiers

Malagasy offers a wide array of universal quantifiers, both D- and A-types.

11.3.1 D-Quantifiers

The D universals are *rehetra* 'all', which is collective, and *tsirairay* 'each', which is distributive. We will shortly discuss the A-quantifiers, but it worth noting that the D-quantifier *rehetra* often co-occurs with the A-quantifier *daholo*, as in examples (22)a,d below.

- (22) a. Manonofinofy daholo [ny mpanoratra tonon-kalo rehetra].
 dream all det writer poem all
 'All poets daydream.'
- b. Nanoratra tonon-kalo [ny mpianatra tsirairay tao
 write poem det student each there
 an-dakilasy].
 acc-class
 'Each student in the class wrote a poem.'
- c. Tsy [ny saka rehetra] no maramara.
 neg det cat all foc grey
 'Not all cats are grey.'
- d. Afa-panadinana daholo [ny mpianatra rehetra afa-tsy
 free-exam all det student all free-neg
 ny roa ihany].
 det two only
 'All but two students passed the exam.'

- e. Nandao ny tanana [ny lehilahy, ny vehivavy ary
leave det town det man, det woman and
ny ankizy tsirairay].
det child each
'Each man, woman and child left the city.'

We note in passing that the universal quantifiers pattern with the other D-quantifiers, appearing to the right of the head noun. Moreover, both universal quantifiers must co-occur with the determiner *ny*.

The quantifier *isaky* 'each' has a slightly different distribution. It is a head noun that takes an NP as a complement, as shown below.

- (23) a. isan'olona
each person
'each person'
- b. isaky ny maraina
each det morning
'each morning'
- c. isaky ny manorotra izy
each det write 3(nom)
'each time he writes'
- d. Nozaraina penina [isaky ny mpianatra tao an-dakilasy].
distribute pen each det student there acc-class
'Pens were distributed to each student in the class.'

11.3.2 A-Quantifiers

In the adverbial domain, *foana* and *lalandava* are the equivalents of 'always', and can be modified by *saika* 'almost' (although *saika* is preverbal, perhaps modifying the entire VP and not just the adverb).

- (24) a. Mandeha taxi-be foana aho rehefa mankany
go taxi big always 1sg(nom) when go-there
am-pianarana.
acc-school
'I always take the bus to school.'
- b. Saika mandeha taxi-be foana aho rehefa mankany
almost go taxi-big always 1sg(nom) when go-there
am-pianarana.
acc-school
'I almost always take the bus to school.'

- c. Saika mitomany lalandava ny zaza.
almost cry always det child
'The children almost always cry.'
- d. Mandratra ny tenany i John isaky ny manala volom-bava.
cut det body John each det remove hair-mouth
'John cuts himself each time he shaves.'

11.3.3 *Universal Quantifiers from Interrogatives*

Malagasy has a productive process of forming universals (free choice expressions or *ever* free relatives) from disjunctive interrogative elements.

- (25) a. Ento aty ny mpianatra [na firy na firy].
bring here det student or how-many or how-many
'Bring here however many students there are.'
- b. [Na iza na iza] no milaza izany, aza inoana.
or who or who foc say that, neg believe
'Whoever says that, don't believe it.'
- c. [Na saka inona na saka inona] dia mihaza voalavo.
or cat what or cat what top hunt rat
'Any cat hunts rats.'

The same form is interpreted as a negative polarity item in the context of negation.

- (26) Tsy hitako [na aiza na aiza] ny ondriko.
neg find.1sg or where or where det sheep.1sg
'I can't find my sheep anywhere.' (Dez 1990: (1871))

11.4 Proportional Quantifiers

11.4.1 *D-Quantifiers*

All of the proportional quantifiers in the nominal domain have a complex structure, resembling partitives. We therefore give an example of a simple partitive below: the multipurpose preposition *amin* takes a genitive complement *ny olona* 'the people'.

- (27) iray amin'ny olona
one p det person
'one of the people'

The genitive is also used to mark possessors of nouns: in (28) the possessor of the head noun *trano* ‘house’ is the genitive *ny olona* ‘the person’.

- (28) ny tranon’ny olona
 det house det person
 ‘the person’s house’

As described in detail in Keenan and Polinsky (1998), the morphological expression of genitive is a nasal segment that surfaces between the head and its complement. Turning now to proportional quantifiers, we see in examples such as (29) that the quantifier corresponds to a noun (e.g. *ankamaroana* ‘most’) that selects for a genitive complement.

- (29) a. Manonofinofy ny ankamaroan’ ny mpanoratra.
 dream det most det writer
 ‘Most writers daydream.’
- b. Manonofinofy ny habetsahan’ ny mpanoratra.
 dream det most det writer
 ‘Most writers daydream.’

Expressions of percentage follow the same pattern: ‘percent’ is expressed by a head *isan-* ‘each’ that takes *zato* ‘hundred’ as a genitive complement. The number then precedes this expression:

- (30) Folo isan-jaton’ ireo boky eto Madagasikara dia amin’ ny
 ten each-hundred dem book here Madagascar top p det
 teny frantsay.
 language French
 ‘Ten percent of the books in Madagascar are in French.’

In (31), we provide further examples of overt partitives that are marked by the preposition *ami(na)* (which also selects a genitive complement). Note that in the first two examples, the partitive surfaces in the predicate position.

- (31) a. Fito amin’ny folo ny mpanoratra manonofinofy.
 seven p det ten det writer dream
 ‘Seven out of ten writers daydream.’
 lit. ‘The writers who daydream are seven out of ten.’
- b. Mandilatra ny iray amin’ny folo ny isan’ny
 touch det one p det ten det number’det
 mpianatra hahazo loka.
 student get prize
 ‘More than one in ten students will get a prize.’
 lit. ‘The number of students who will get a prize is more than one in ten.’

- c. Tsy misy mpampianatra iray amin'ny folo
 neg exist teacher one p'det ten
 no mahafantatra izany valim-panontaniana izany.
 foc know dem answer-question dem
 'Not one teacher in ten knows that answer to that question.'

11.4.2 A-Quantifiers

Malagasy does not have productive formation of A-quantifiers from D-quantifiers (cf. English *-ly*), but there are many A-quantifiers that can appear in the verb phrase. There is no A-quantifier equivalent to *mostly*, however.

- (32) a. Ny ankabetsahan'ny vehivavy no nifidy an'i Reagan.
 det most det woman foc choose acc Reagan
 'Most women voted for Reagan.'
- b. Ny vehivavy no maro nifidy an'i Reagan.
 det woman foc many choose acc Reagan
 'Women mainly voted for Reagan.'
- c. Matetika tsy mijanona hisotro kafe ny jiolahy
 often neg stop drink coffee det thief
 rehefa mandositra ny polisy.
 when flee det police
 'Usually thieves don't stop for coffee when they are fleeing the police.'
- d. Mandeha taxi-be matetika / mazana mankany
 go taxi-big often / frequently go-there
 am-pianarana i John.
 acc-school John
 'John often/frequently takes the bus to school.'
- e. Mahalana i John no mitsidika ny tranom-bakoka ny alahady.
 rare John foc visit det house-treasure det Sunday
 'It is rarely John who visits the museum on Sundays.'

Note that in (32)e, the adverb is in the preverbal focus position together with the proper name *John*. Therefore the adverb is interpreted as modifying *John*.

11.5 Follow Up Questions

11.5.1 NP Background

11.5.1.1 Definite NPs

As noted in the introduction, DPs in Malagasy are head initial. There are a range of determiners and demonstratives in definite DPs.

- (33) a. *ra, i, andria, ry* – for people
 b. *ilay* – determiner for previously mentioned entities (usually singular)
 c. *ny* – definite/specific determiner (unmarked for number)
- (34) Tonga i Koto/ ry Rakoto.
 arrive det Koto/ det Rakoto
 ‘Koto/The Rakoto family arrived.’ (Dez 1990:(21), (29))

The demonstrative system is highly complex, encoding seven degrees of distance, singular vs. plural, and invisible vs. invisible (Table 11.1).

The definite article *ny* is clearly distinct from the demonstratives (all the demonstratives have initial *i-*), though Dahl (1951) claims that the determiner *ny* is historically related to the proximal demonstrative *ini* that is found in languages such as Malay. This historical connection between a determiner and demonstratives is very common cross-linguistically – Lyons (1999) claims that definite articles almost always arise from demonstratives. It is possible to show that the determiner and the demonstratives have different syntax and semantics. Syntactically, demonstratives typically frame the NP, while the determiner doesn’t, as can be seen by comparing (35) and (36). On the semantics side, Löbner (1985) uses consistency to distinguish determiners from demonstratives. In contexts such as (35), the determiner gives rise to a contradiction. If the determiner is replaced with a demonstrative, as in (36), there is no contradiction

Table 11.1 Demonstratives

	Visible			Invisible		
	Singular	Plural	Generic	Singular	Plural	Generic
No distance	ito/ity	ireto	itony	Izato/izaty		izatony
Undefined distance	io/inny	ireo/ireny		izao/izay/izany		
Very close	itsy	iretsy	itsony	izatsy		izatsony
Small distance	itsy	iretsy		izatsy		
Big distance	iròà	ireròà		izaròà		
Very big distance	iry	irery	iròny	Izary		izaròny

- (35) # Mazoto ny mpianatra ary tsy mazoto ny mpianatra.
 zealous det student and neg zealous det student
 # ‘The student is zealous and the student is not zealous.’
- (36) Mazoto ity mpianatra ity ary tsy mazoto ity mpianatra ity.
 zealous dem student dem and neg zealous dem student dem
 ‘This student is zealous and this student is not zealous.’

11.5.1.2 Generic NPs

Malagasy does not have a special marker for generic NPs – definite NPs can be used to refer to kinds.

- (37) Tonga tany Madagasikara tamin’ ny taona 1900 ny bitro.
 arrive there Madagascar p det year 1900 det rabbit
 ‘The rabbit arrived in Madagascar in 1900.’

11.5.2 Monomorphemic Quantifiers

Malagasy appears to lack a monomorphemic proportional quantifier – the equivalents of *most* are closer to the French *la plupart de* in their internal structure. As noted by Keenan (2008, fn. 6), the forms meaning ‘most’ are all composed of the causative prefix *anka*, followed by root (*be* ‘big’, *maro* ‘many’, *betsaka* ‘many’), which is followed by the voice suffix *ana*. Malagasy also lacks a quantifier equivalent to English *no*. We note that A-quantifiers are not in general morpho-syntactically more complex than D-quantifiers. Some of the A-quantifiers may appear as matrix predicates and therefore can be classified as either adjectives or adverbs (Tables 11.2 and 11.3).

- (38) a. Matetika ny tsena.
 often det market
 ‘The market occurs often.’
- b. Mahalana ny tsena
 rare det market
 ‘The market occurs rarely.’

Table 11.2 Monomorphemic quantifiers

D-quantifiers		A-quantifiers	
<i>rehetra</i>	all	<i>daholo</i>	all
<i>vitsy</i>	few	<i>foana</i>	always
<i>maro</i>	many	<i>mazana</i>	usually
<i>betsaka</i>	many	<i>avy</i>	each
<i>iray, roa, etc.</i>	one, two, etc.	<i>avokoa</i>	all
		<i>samy</i>	each

Table 11.3 Multimorphemic quantifiers (one phonological word)

D-quantifiers		A-quantifiers	
<i>ankabeazana</i>	most	<i>lalandava</i>	always
<i>ankamaroana</i>	most	<i>matetika</i>	often
<i>ankabetsahana</i>	most	<i>mahalana</i>	rarely
<i>sasany</i>	certain	<i>indroa, intelo, etc.</i>	twice, thrice, etc.
		<i>tsirairay</i>	each

All of the D-quantifiers select for count nouns and some are also compatible with mass nouns (see below for more discussion of the mass/count distinction). Given the lack of morphological marking of singular or plural, there is no selection based on number.

11.5.3 Decreasing NPs

Malagasy has a range of decreasing NPs, built mainly using the negation *tsy*.

- (39) a. *Tsy nisy mpianatra tonga namaky boky.*
 neg exist student arrive read book
 ‘No students came to the book reading.’
- b. *Latsaky ny dimy ny mpianatra nanaraka fampianarana.*
 fall det five det student followed teaching
 ‘The students who followed the class were fewer than five.’
- c. *Tsy ny ankizy rehetra no be tomany.*
 neg det child all foc big cry
 ‘Not all children cry a lot.’
- d. *Latsaky ny fahefan’ ny mpianatra no afa-panadinana.*
 fall det quarter det student foc free-exam
 ‘Less than one quarter of the students passed the exam.’
- e. *Tsy mandilatra ny fito amin’ ny folo ny tantsambo*
 neg touch det seven p det ten det sailor
mifoka Players.
 smoke Players
 ‘Not more than seven out of ten sailors smoke Players.’

Decreasing NPs in Malagasy do not license negative polarity items: the examples in (40)a–c are all ungrammatical without the negative particle *tsy*, as illustrated in (40)d. In examples (40)a and c, the presence of *tsy* affects the meaning of *mbola* ‘still’ to give rise to the meaning ‘ever’. In (40)b, the NPI *na dia iray aza* ‘not even one’ requires an overt marker of negation.

- (40) a. Na i John na i Bill dia samy tsy mbola tany Mosko
 or John or Bill topeach neg still there Moskow
 mihitsy.
 indeed
 ‘Neither John nor Bill have ever been to Moscow.’
- b. Tsy nandilatra ny roa ny mpianatra tsy nahita vorona
 neg touch det two det student neg see bird
 na dia iray aza teo am-pitsangatsanganana.
 or top one even here acc-walk
 ‘Not more than two students saw any birds on the walk.’
- c. Latsaky ny antsasan’ ny mpianatra eto dia mbola tsy
 fall det half det student here top still neg
 tany Pinsk mihitsy.
 there Pinsk indeed
 ‘Less than half of the students here have ever been to Pinsk.’
- d. *Tsy nandilatra ny roa ny mpianatra nahita vorona na dia
 neg touch det two det student see bird or top
 iray aza teo am-pitsangatsanganana.
 one even here acc-walk

11.5.4 Boolean Compounds

Boolean compounds of determiners are not directly possible in Malagasy (see Section 11.2.5). The rough equivalents of English examples use coordinated phrases of different types. In other words, the syntactic structure of the sentences in (41) and (42) is radically different from the English translations. The coordinated elements appear to be most acceptable in the predicate position, as in (41)a and (42)a.

- (41) a. Farafahakeliny roa ary tsy mandilatra folo ny
 least two and neg touch ten det
 isan’ ny mpianatra hahazo vatsim-pianarana amin’ny
 number det student get provision-study p det
 taona avy.
 year come
 ‘At least two but not more than ten students will get scholarships next year.’
 lit. ‘The number of students who will get scholarships next year is at least two and not more than ten.’

- b. Maro fa tsy ny mpanoratra rehetra no matory antoandro.
many but neg det writer all foc sleep afternoon
'Many but not all writers sleep in the afternoon.'
- c. *Tsy tonga tamin'ny fety na ny mpianatra tsirairay
neg arrive p det party or det student each
na ny mpampianatra tsirairay
or det teacher each
'Neither every student nor every teacher came to the party.'
- (42) a. Indroa farafahakeliny fa tsy mihoatra ny indimy i Koto
twice least but neg exceed det five-times Koto
tsy nianatra.
neg study
'At least twice but not more than five times Koto didn't study'
- b. Amin'ny fifidianana ny filoham-pirenena dia tsy mifidy
p'det election det head-state top neg choose
foana ny Demokraty Rasoa fa matetika dia ny Demokraty
always det Democrat Rasoa but often top det Democrat
no fidiny.
foc choice
'In presidential elections Rasoa doesn't always vote for
Democrats, but often the Democrats are her choice.'

11.5.5 Exception Phrases

Exception is marked by *afa-tsy*, a morphologically complex expression built up from *afaka* 'free' and *tsy* 'not'. Note that the complement of *afa-tsy* must have a determiner, but is not always interpreted as definite, as seen in (43)e.

- (43) a. Tonga ny mpianatra rehetra afa-tsy Rabe.
arrive det student all free-neg Rabe
'All the students came except Rabe.'
- b. Ny mpianatra rehetra afa-tsy Rabe no tonga.
det student all free-neg Rabe foc arrive
'All the students came except Rabe.'
- c. Namangy ny mpianatra rehetra afa-tsy Rabe aho.
visit det student all free-neg Rabe 1sg(nom)
'I visited all the students except Rabe.'

- d. Namangy ny mpianatra rehetra aho afa-tsy Rabe.
visit det student all 1sg(nom) free-neg Rabe
'I visited all the students except Rabe.'
- e. Tonga ny mpianatra rehetra afa-tsy ny roa.
arrive det student all free-neg det two
'All the students arrived except two.'
- f. Tsy nisy mpianatra nandao ny fety tara afa-tsy Rabe.
neg exist student leave det party late free-neg Rabe
'No student left the party late except Rabe.'

The data in (43)d,f show that the exception phrase can be extraposed to the right, while the data in (43)b suggest that the NP and the exception phrase form a constituent.

11.5.6 *Only*

The equivalent of 'only' is expressed with *fotsiny*, *irery* 'alone' or *ihany* 'only' (or both, as in (44)b). Typically 'only' phrases appear in the focus position, as illustrated below.

- (44) a. I John irery no nahazo loka.
John alone foc got prize
'Only John got a prize.'
- b. Mpianatra (irery) ihany no nanatrika ny lanonana.
student alone only foc attend det ceremony
'Only students attended the ceremony.'

11.5.7 *Partitives*

As discussed in Section 11.4, partitives are productively formed with the preposition *amin* (or *tamin* – its past tense form), but there is no partitive equivalent to the English 'all of the' or 'none of the' and there are no partitive equivalents to 'both' or 'neither'.

- (45) a. Afa-panadinana ny roa tamin' ny mpianatra.
free-exam det two p det student
'Two of the students passed the exam.'
- b. Afa-panadinana ny roa tamin' iretsy mpianatra iretsy.
free-exam det two p dem student dem
'Two of these students passed the exam.'

- c. Afa-panadinana ny roa tamin' ny mpianatro.
free-exam det two p det student.1sg(gen)
'Two of my students passed the exam.'
- d. Afa-panadinana ny roa tamin' ny mpianatrin' i John.
free-exam det two p det student John
'Two of John's students passed the exam.'
- e. Iza amin'ireo mpianatra ireo no afa-panadinana?
who p dem student dem foc free-exam
'Which of the students passed the exam?'
- f. Ny mpianatra rehetra/ tsy ny mpianatra rehetra
det student all / neg det student all
no afa-panadinana.
foc free-exam
'All/not all (of the) students passed the exam.'
- g. Roa tamin' ny mpianatra no afa-panadinana.
two p det student foc free-exam
'Two of the students passed the exam.'
- h. Mihoatra ny valopolo isan-jaton ny mpianatra
exceed det eighty number-hundred det student
no afa-panadinana.
foc free-exam
'More than eighty percent of the students passed the exam.'
- i. Mihoatra ny dimy tamin' ny enina ny mpianatra
exceed det five p det six det student
afa-panadinana.
free-exam
'More than five sixths of the students passed the exam.'
lit. 'The students who passed the exam are more than five out of six.'

The equivalent of 'most' does not involve a preposition. Instead, the head noun *ankamaroana* or *ankabetsahana* 'most', is directly followed by a complement that is marked for genitive case.

- (46) a. Afa-panadinana ny ankamaroan' ny mpianatra.
free-exam det most det student
'Most of the students passed the exam.'
- b. Afa-panadinana ny ankabetsahan' ny mpianatra.
free-exam det most det student
'Most of the students passed the exam.'

The Malagasy data thus support the claim that all languages have syntactically complex NP partitives and the claim that all NPs with a partitive interpretation are syntactically complex (raising the question about the nature of ‘all of the’).

There are however two other structure types that assign a partitive interpretation to an NP. One is the existential construction and the other is with special verbal morphology (circumstantial topic), as illustrated in (47). In these examples, the NP itself bears no special marking, but the syntactic structure is marked.

- (47) a. Nisy namangy azy isika.
 exist visit 3(acc) 1plex(nom)
 ‘Some of us visited him.’
- b. Namonoana ny akoho.
 kill+circumstantial det chicken
 ‘Some of the chickens were killed.’

See Paul (2000) for an analysis.

11.5.8 Quantificational NPIs

The expression *na dia iray* ‘not even one’ is a negative polarity item in Malagasy – it must occur with negation, giving rise to the contrast in (48).

- (48) a. Tsy misy akondro na dia iray aza aho.
 neg exist banana or top one even 1sg(nom)
 ‘I don’t have any bananas, not even one.’
- b. *Misy akondro na dia iray (aza) aho.
 exist banana or top one (even) 1sg(nom)

The adverb *foana* is listed in the dictionary as meaning ‘freely, foolishly, useless’, but in certain contexts it means ‘always’, such as (49)a. In (49)c, it appears that the adverb takes wide scope with respect to negation, giving rise to a ‘never’ interpretation.

- (49) a. Tonga amin’ny fotoana foana izy.
 arrive p det time always 3(nom)
 ‘He always arrives on time.’
- b. Mbola tsy tonga foana izy.
 still neg arrive always 3(nom)
 ‘He still hasn’t arrived.’

- c. Tsy tonga foana izy.
 neg arrive always 3(nom)
 ‘He never arrives.’

11.5.9 *Qs as Predicates*

As we have already seen, cardinal numerals are possible as predicates. This is not possible, however, for strong quantifiers, such as *rehetra* ‘all’, *sasany* ‘certain’, and *ankabeazana* ‘most’.

- (50) a. Latsaka ny zato ny gadralava nandositra.
 fall det hundred det prisoner escape
 ‘The prisoners who escaped were fewer than one hundred.’
- b. Fito amin’ny folo ny dokotera manome fanafody.
 seven p det ten det doctor give medicine
 ‘The doctors who give medicine are seven out of ten.’
- c. Adiny valo ny fatoriako.
 hour eight det sleep.1sg(gen)
 ‘My usual sleep is eight hours.’
- d. Tsy mihoatra ny zato ny gadralava nandositra.
 neg exceed det hundred det prisoner escape
 ‘The prisoners who escaped were not more than one hundred.’
- e. *Rehetra/*Sasany/*Ankabeazany ny gadralava nandositra.
 All/ certain/ most det prisoner escape

11.5.10 *Qs as DPs*

In general, quantifiers can serve in argument positions (e.g. subject or object). Because of the restriction on the subject position, however, bare quantifiers are not possible as subject – they are always accompanied by a determiner or a pronoun. The examples in (51) illustrate this pattern for *telo* ‘three’.

- (51) a. Mora ireo boky ka nividy [telo] aho.
 cheap det book so bought three 1sg(nom)
 ‘The books were inexpensive so I bought three’
- b. Mora ireo boky dia novidiko [ny telo].
 cheap det book top buy.1sg det three
 ‘As the books were inexpensive I bought three’

Certain quantifiers, however, are always accompanied by a pronoun or a determiner, independent of their syntactic position.

- (52) a. Mora ireo boky dia nividy [azy rehetra] aho.
 cheap det book top buy 3(acc) all 1sg(nom)
 ‘The books were inexpensive, so I bought them all’
- b. Mora ireo boky dia novidiko [izy rehetra].
 cheap det book top buy.1sg 3(nom) all
 ‘The books were inexpensive so I bought them all’
- c. Mora ireo boky dia nividy [ny sasany] aho.
 cheap det book top buy det certain 1sg(nom)
 ‘The books were inexpensive so I bought some.’
- d. Mora ireo boky dia novidiko [ny sasany].
 cheap det book top buy.1sg det certain
 ‘The books were inexpensive so I bought some.’
- e. Mora ireo boky dia novidiko [ny ankabiazany]
 cheap det book top buy.1sg det most
 ‘The books were inexpensive so I bought most.’

11.5.11 *Distribution*

Quantified NPs can occur in all major grammatical functions: subject (53)a, direct object (53)b, and object of a preposition (53)c.

- (53) a. Novaliko daholo [ny fanontaniana rehetra afa-tsy ny
 answer all det question all free-neg det
 iray ihany].
 one only
 ‘I answered all but one of the questions.’
- b. Namaly [fanontaniana telo] ihany i John tamin’ ny
 answer question three only John p det
 fanadinana.
 exam
 ‘John answered just three questions on the exam.’
- c. Nanao fanambarana tamin’ [ny mpianatra maro/ rehetra/
 do notice p det student many/ all
 antsasaky ny isan’ny mpianatra] ny mpiasan’ny
 half det number det student det worker’det
 tranomboky.
 library
 ‘The librarian sent a notice to several/all/ about half the students.’

There are no special restrictions on quantified NPs nor do they occupy positions that are unusual for definite NPs in Malagasy.

Scope ambiguities are more difficult to track. In our experience we have found that speakers tend to initially find sentences to be unambiguous (even when the two potential contexts are given). But during subsequent elicitation, many speakers find the sentence to be appropriate in the two different contexts. For this reason, we feel unable to make any definitive statement about scope ambiguities in Malagasy.

On the other hand, there are some differences between the different quantifiers. The universal quantifier *rehetra* is collective, while *tsirairay* is distributive. Therefore *rehetra* but not *tsirairay* is acceptable with predicates such as *mivory* ‘gather’.

- (54) a. Nivory tao an-tokotany ny mpiantra rehetra omaly.
gather there acc-yard det student all yesterday
‘All the students gathered in the yard yesterday.’
- b. *Nivory tao an-tokotany ny mpiantra tsirairay omaly.
gather there acc-yard det student each yesterday

This difference is also apparent in the two following sentences, where *tsirairay* forces a distributive reading in (55)b.

- (55) a. Misy sarin’ny mpianatra rehetra eo ambonin’ny
exist picture’det student all there on det
latabatra.
table
‘There is a picture of all the students on the table.’
(ambiguous: one picture of all the students or one picture per student)
- b. Misy sarin’ ny mpianatra tsirairay eo ambonin’ny
exist picture det student each there on det
latabatra.
table
‘There is a picture of each student on the table.’
(unambiguous: one picture per student)

Scope interactions are also visible in wh-questions, where fronting a wh-expression tends to force a wide-scope reading, as in (56)a, while an in-situ wh-expression can take narrow scope (56)b.

- (56) a. Ny boky inona no novidin’ ny mpianatra rehetra?
det book what foc buy det student all
‘Which book did all the students buy?’
possible answer: a single book

- b. Nividy boky inona daholo ny mpianatra?
 buy book what all det student
 ‘What book did all the students buy?’
 possible answer: pair-list (a different book for each student)

If the *wh*-expression is an agent, however, both wide and narrow scope interpretations are possible, as seen in (57).

- (57) Iza no nidera ny mpianatra rehetra?
 who foc praise det student all
 ‘Who praised all the students?’
 single or list

Due to the limitations on embedding quantified NPs in NPs, it is not easy to test for scope ambiguities in such contexts.

- (58) a. naman’ ny senatera tsirairay avy
 friend det senator each each
 ‘a friend of each senator’
 b. *namana roa ny senatera tsirairay avy
 friend two det senator each each
 ‘two friends of each senator’
 c. *namana tsirairay ny senatera tsirairay avy
 friend each det senator each each
 ‘each friend of each senator’

11.5.12 *Distributive Numerals*

Malagasy allows for the productive formation of distributive numerals: the prefix *tsi-* is attached to the reduplicated form of the number (numbers from one to ten, and then one hundred, one thousand, ten thousand).

- (59) a. tsirairay ‘one by one’
 b. tsiroaroa ‘two by two’
 c. tsizatozato ‘one hundred by one hundred’

The result is an adverb that generally appears post-verbally, as in (60).

- (60) Nilahatra tsiroaroa ny mpianatra.
 line-up tsi-two-two det student
 ‘The students lined up two by two.’

The same formation applies to some adjectives and nouns.

- (61) a. tsikelikely ‘little by little’
 b. tsitaitaika ‘drop by drop’

11.5.13 *Mass vs. Count Quantifiers*

Malagasy does appear to have a grammatical mass/count distinction, but only a few quantifiers are sensitive to it. The numerals are incompatible with a mass noun (without a measure word), as is the quantifier *vitsy* ‘few’. This is true whether the quantifier is in modifier position, as in (62), or in the predicate position, as in (63).

- (62) a. Novidiny ny boky enina.
 buy.3(gen) det book six
 ‘She bought six books.’
 b. *Novidiny ny lafarina enina.
 buy.3(gen) det flour six
 ‘She bought six flours.’
- (63) a. Roa/vitsy ny boky.
 two/few det book
 ‘There are two/few books.’
 b. *Roa/vitsy ny lafarina.
 two/few det flour
 ‘There are two/few flours.’

Most other quantifiers are possible with both mass and count nouns.

- (64) a. trano firy?
 house how-many
 ‘how many houses’
 b. hidrozena firy?
 hydrogen how-many
 ‘how much hydrogen’
 c. ny trano rehetra
 det house all
 ‘all houses’
 d. ny lafarina rehetra
 det flour all
 ‘all flour’

But *tsirairay* (*avy*) ‘each’ is only possible with count nouns.

- (65) a. ny trano tsirairay
 det house each
 ‘each house’
- b. *ny lafarina tsirairay
 det flour each

11.5.14 *The Indexing Function of Universal Quantifiers*

Universal quantifiers such as *isany* ‘each’ can introduce an indexing function as adverbial expressions in (66):

- (66) a. Mitombo isan-taona ny mpividy Toyota
 grows each-year det buyers Toyota
 ‘The number of Toyota buyers grows every year’
- b. Isaky ny oram-barotra mianjera ny trano iray.
 each det rain-thunder collapses det house one
 ‘At each thunder-storm one house collapses.’

Rate phrases are productively formed with the noun *isany* ‘number, total, each’

- (67) a. Efa-jato kilometatra isan’ora ny hafaingam-
 four-hundred kilometre each hour det speed
 pandehan’ ity fiarandalam-by ity.
 go dem train dem
 ‘That train is travelling at 400 kilometres per hour.’
 lit. ‘The going-speed of that train is 400 km/h.’
- b. Mihazakazaka roapolo kilometatra isan’andro aho.
 run two-ten kilometre each day 1sg(nom)
 ‘I run twenty kilometres a day.’
- c. Manasa ny tarehiny indroa isan’andro/
 wash det face.3(gen) twice each day /
 in-telo isan’andro/ isan’andro izy.
 thrice each day/ each day 3(nom)
 ‘He washes his face twice a day / three times a day / every day.’

11.5.15 Type 2 Quantifiers

The Malagasy equivalents of English Type 2 quantifiers follow the patterns that we have already seen: *wh*-quantifiers as well as modifiers such as *samihafa* ‘different’ and *mitovy* ‘same’ are possible.

- (68) a. Mpianatra iza no namaly fanontaniana mikasika ny
 student who foc answer question concern det
 inona tamin’ ny fanadinana?
 what p det exam
 ‘Which students answered which questions on the exam?’
- b. Namaly fanontaniana mitovy ny mpianatra rehetra
 answer question same det student all
 tamin’ ny fanadinana.
 p det exam
 ‘All the students answered the same questions on the exam.’
- c. Samy namaly fanontaniana samihafa ny mpianatra tsirairay
 each answer question different det student each
 tamin’ ny fanadinana.
 p det exam
 ‘Each student answered a different question on the exam.’
- d. Namaly fanontaniana samihafa ny mpianatra samihafa.
 answer question different det student different
 ‘Different students answered different questions.’
- e. Mipetraka amin’ ny tanàna mifanakaiky i John sy Bill.
 live p det town recip.close John and Bill
 ‘John and Bill live in neighbouring villages.’
- f. Manohana antoko politika mpifaninana i John sy Bill.
 support party political rival(e.o) John and Bill
 ‘John and Bill support rival political parties.’
- g. Samy nanana ny efitrano nipetrany avy ry zareo
 each have det room live each det 3pl
 tao amin’ny trano.
 there p det house
 ‘They live in different apartments in the same building.’
- h. Ny mpanatrika rehetra dia nanao fehitenda mitovy loko.
 det spectator all top do tie same colour
 ‘All the participants wore the same colour necktie.’

- i. Niara nandihy tamin' i Mary i John fa tsy nisy
together dance p Mary John but neg exist
olon-kafa nandihy niaraka tamin' olona mihitsy.
person-other dance together p person indeed
'John danced with Mary but no one danced with anyone else.'
- j. Tokony hapetraka amina efitrano mitokana avy
should put p room separate each
na amina rindrina mifanatrika ny sary hosodoko.
or p wall facing det picture paint
'The paintings should be hung in separate rooms or on oppo-
site walls of the same room.'
- k. Samy nanatsoaka hevitra samihafa avy amin' ny
each deduce thought different each p det
tohan-kevitra ny mpitsara.
support-thought det judge
'The jurors drew different conclusions from the same arguments.'

11.5.16 Type ((1,1),1)

11.5.16.1 Comparative D-Quantifiers

Comparative quantification is only expressed within the predicate. As a result, the equivalent of 'more students than teachers came', is closer to 'the students who came were more numerous than the teachers', as in (69). Note, however, that in (69)f, there is no overt expression that corresponds to 'many'.

- (69) a. Maro kokoa ny mpianatra nohon' ny mpampianatra
many more det student than det teacher
tonga amin' ny fety.
arrive p det party
'More students than teachers came to the party.'
- b. Maro ny mpianatra na mpampianatra tonga
many det student or teacher arrive
tamin' ny fety farafaharatsiny.
p det party least
'At least as many students as teachers came to the party.'
- c. Mahafantatra mpianatra kokoa nohon' ny mpampianatra
know student more than det teacher
aho.
1sg(nom)
'I know more students than teachers.'

- d. Niara-niasa bebe kokoa tamin'ny mpianatra
 together-work big-big more p det student
 aho nohon' ny mpampianatra.
 1sg(nom) than det teacher
 'I worked with more students than teachers.'
- e. Ninoana nanao sonia kokoa ny mpianatra maromaro
 believe do signature more det student many
 nohon' ny mpampianatra.
 than det teacher
 'More students than teachers were believed to have signed.'
- f. Tena mitovy na ny hamaron' ny bisikiletan' ny
 really same or det number det bicycle det
 mpianatra na ny an'ny mpampianatra nangalarin' olona.
 student or det acc det teacher steal person
 'Just as many students' as teachers' bicycles were stolen.'

11.5.16.2 Combinations with Conjunctions

- (70) a. Ny lehilahy, ny vehivavy ary ny ankizy rehetra
 det man, det woman and det child all
 no mitsambikina an-dranomasina
 foc jump acc-ocean
 'Every man, woman and child jumped overboard.'
- b. Betsaka ny lehilahy, ny vehivavy na ny ankizy miasa
 many det man, det woman or det child work
 alahady.
 Sunday
 'Many men, women and children work on Sunday.'
 lit. 'The men, women, and children who work on Sunday are many.'

11.5.16.3 Predicates

The comparative discussed above easily generalizes to predicates.

- (71) Betsaka kokoa ny mpianatra tonga tamin' ny fety
 many more det student arrive p det party
 noho ireo nianatra nanomam-panadinana.
 than dem study prepare-exam
 'More students came to the party than studied for their exams.'
 lit. 'The students who came to the party were more than those who
 studied for the exam.'

11.5.17 Floating Quantifiers

Per Tables 11.2 and 11.3 Malagasy has several A-quantifiers and several D-quantifiers. The two sets are almost disjoint and they may co-occur: *avokoa* ‘all’, *daholo* ‘all’, *avy* ‘each’, *samy* ‘each’. These all appear in adverbial positions (*samy* occurs pre-verbally and the others after the VP) and never within the NP (72)c. Note that these often co-occur with each other, as in (72)a,b.

- (72) a. Samy lasa daholo/avokoa ny ankizy rehetra
 each gone all/all the student all
 ‘All the children left’
- b. Latsaka avy any ambonin’ny tendrombohitra daholo
 fall from there on+top+of det hill all
 ny ankizy.
 det children
 ‘The children all fell down the hill.’
- c. *Latsaka avy any ambonin’ny tendrombohitra
 fall from there on+top+of det hill
 ny ankizy daholo.
 det child all

The D-quantifier *rehetra* ‘all’ never floats, nor do numerals.

- (73) a. Ny mpianatra rehetra no tonga tamin’ ny fety.
 det student all foc arrive p det party
 ‘All the students came to the party.’
- b. *Ny mpianatra no tonga tamin’ ny fety rehetra.
 det student foc arrive p det party all
- c. Nihomehy mafy ny mpianatra roa.
 laugh hard det student two
 ‘Two students laughed out loud.’
- d. *Nihomehy mafy roa ny mpianatra.
 laugh hard two det student

The one quantifier that can appear both in a ‘floated’ VP position (74)a and within NP subject 74(b) is *tsirairay* ‘each’ and its variant *tsirairay avy* (Dez 1980b:172). It always takes the subject as antecedent.

- (74) a. Nomeko paiso dimy tsirairay ny mpianatra.
 give peach five each det student
 ‘I gave the students five peaches each.’

- b. Nomeko paiso dimy ny mpianatra tsirairay.
 give peach five det student each
 ‘I gave five peaches to each of the students.’

11.6 Conclusion

The goal of this paper is essentially a descriptive one: to explore the range of morphosyntactic expressions of quantification in Malagasy. We leave the analysis of these expressions for future research.

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Chapter 12

Taiwan Mandarin Quantifiers

Grace C.-H. Kuo and Kristine M. Yu

In this chapter, we provide an overview of the inventory of Taiwan Mandarin¹ quantifiers (Section 12.1) and the basic phenomena involving them (Section 12.2).²

¹ We would like to thank Edward Keenan, Denis Paperno, and an anonymous reviewer for their suggestions and three consultants who provided judgments for some of the examples. All consultants and the first author are native speakers of Mandarin of around 30 years in age; they were born and raised in Taiwan and also speak some Taiwanese. Thus, we restrict the scope of our description to Taiwan Mandarin to recognize that significant dialectal variation may be present in Mandarin quantification.

² We follow the convention in the syntactic/semantic literature of not marking lexical tone and guiding the segmentation of Mandarin words by the morphemic segmentation in the English gloss rather than segmenting syllable by syllable. In some cases, we do provide a finer segmentation when we want to draw attention to morphological composition, such as in the first mention of a quantifier or in the discussion of numerals in Section 12.1.1.1. A list of abbreviations used in the chapter for glossing, with rough descriptions of meanings, follows:

- ASP aspect marker, gloss for *guo* (experiential), *le* (perfective), and *zhe* (durative)
- BA Mandarin object marker
- BEI Mandarin passive marker
- COMP comparative
- CL classifier (Section 12.1.6)
- DOU Mandarin quantifier (very roughly, ‘all’, but see Section 12.1.3)
- GE Mandarin distributive quantifier (Section 12.1.4)
- DE Mandarin possessive marker or nominalizer
- LOC locative
- NEG negation, gloss for *bu* and *mei(you)* (Section 12.1.1.3)
- Q question particle
- YOU Mandarin existential verb (roughly ‘have’, but see Section 12.1.1.3)

Throughout the chapter, we use the traditional term NP to descriptively refer to nominal expressions; some theoretical frameworks would refer to some of these expressions as DPs.

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12.1 Inventory of Quantifiers

In this section, we give an overview of the basic inventory of quantifiers in Mandarin, with the goal of illustrating the diversity of quantifiers in the language. We inventory generalized existential (intersective) quantifiers in Section 12.1.1 and generalized universal (co-intersective) quantifiers in Section 12.1.2. We then discuss in particular two Mandarin quantifiers, *dou* (Section 12.1.3) and the distributive quantifier *ge* (Section 12.1.4), and discuss proportional quantifiers in Section 12.1.5. Lastly, we give an overview of the interaction of quantifiers and numeral classifiers in Section 12.1.6.

12.1.1 Generalized Existential (Intersective) Quantifiers

12.1.1.1 D-Quantifiers

Generalized existential quantifiers are productive in Mandarin, and as in English, the most productive subclass of generalized existential D-quantifiers is that of the cardinal quantifiers.

Cardinal Quantifiers

We illustrate cardinal quantifiers in Mandarin below in (1).

- (1) Cardinal quantifiers in Mandarin
- a. **Basic** \emptyset , *yixie* ‘some’ (cf. footnote 8), *yi-CL* ‘a/an/one’, *mei(you)* ‘no’, *ji-CL* ‘a few/several’, *liang-CL* ‘two’, . . . , *shi-CL* ‘ten’, . . . , *liang-bai-CL* ‘two hundred’, . . .
 - b. **Value judgment** *hen-duo* ‘many (lit. very-many)’, *hen-shao* ‘few (lit. very-few)’, *tai-duo* ‘too many’, *tai-shao* ‘too few’, *bu gouduo* ‘not enough (NEG enough)’
 - c. **Modified** *chaoguo ba-CL* ‘more than eight’, *zhishao ba-CL* ‘at least eight’, {*ganghao/bu-dao/zuiduo/zhियou*} *liu-CL* ‘{exactly/fewer than (lit. NEG-reach)/at most/only} six’, *jièyu liu-CL han shi-CL* ‘between six and ten’, *jiangjin/dayue ershi-CL* ‘nearly/approximately twenty’, *bu chaoguo shi-CL* ‘not more than ten’, *zhishao liang-CL danshi bu chaoguo wu-CL* ‘at least two but not more than five’, *wuxian duo-CL* ‘infinitely many’, *ji-CL* ‘how many’

Here are some examples of basic cardinal quantifiers in sentences.

- (2) Basic cardinal quantifiers
- a. wo kanjian bilu shang you yi-zhang qiujier de huaxiang
1sg see fireplace LOC YOU one-CL Churchill DE picture
‘I saw a/one picture of Churchill above the fireplace.’

- b. you yixie shuishou zai jie shang changge
 YOU some sailor at street LOC sing
 ‘Some sailors are singing in the street.’
- c. you ji-ge nuren shenqing-le zhe-fen gongzuo
 YOU several-CL woman apply-ASP this-CL work
 ‘Several women applied for the job.’

Value Judgment Cardinals

As in English, Mandarin has a subset of cardinal quantifiers which make a value judgment based on the expected value, e.g. *henduo* ‘many’. We give some examples with value judgment quantifiers below. Perhaps more productively than in English, e.g. ‘many, many...’, reduplication can be used to intensify a value judgment as in (3-c), resulting in a value judgment similar to the English ‘surprisingly many/few.’

- (3) a. laoban miantan-le {henduo / henshao} yingzhengzhe
 boss interview-ASP {many / few} applicant
 ‘The boss interviewed many / few applicants.’
- b. lai canjia juhui de xuesheng {tai-duo / bu gouduo}
 come attend meeting DE student {too-many / NEG enough}
 ‘Too many / Not enough students attended the meeting.’
- c. you {tai-duo tai-duo / tai-shao tai-shao} xuesheng lai canjia
 YOU {too-many too-many / too-few too-few} student come attend
 juhui le
 meeting ASP
 ‘Surprisingly many / Surprisingly few students came to the meeting.’

Numerals and Modified Numerals

Mandarin has systematic ways of naming numerals. For the cardinals, each power of ten has a unique morpheme up to ten thousand: 1 = *yi*, 10 = *shi*, 100 = *bai*, 1,000 = *qian*, 10,000 = *wan*. Thereafter, the numerals are compound: 100,000 = *shi-wan*, 1,000,000 = *bai-wan*, 10,000,000 = *qian-wan*, until 100,000,000 = *yi* (this is Tone 4, compared to Tone 1 for ‘one’), with monomorphemic forms for each power of 10^{4n} , where $n = 1, 2, 3 \dots$. Traditionally, numerals were marked off by fours, e.g. 1234×10^8 rather than three 123×10^9 , as shown below (Chao, 1968, p. 573):

- (4) yi-qian-er-bai-san-shi-si yi
 one-thousand-two-hundred-three-ten-four hundred-million
 ‘one hundred twenty-three billion and four hundred million’

We give an example of numerals modified by quantification in sentences below in (5):

- (5) {chaoguo ba-ge / ganghao ba-ge / zhiyou ba-ge / bu dao
 {over eight-CL / just eight-CL / only eight-CL / NEG reach
 ba-ge} xuesheng tongguo kaoshi
 eight-CL} student pass exam
 'More than/Just/Only/Less than eight students passed the exam.'

Some other examples of numerals and modified numerals include:

- (6) {chaoguo / zhishao / shaoyu} wu-ge
 {over / at-least / less-than} five-CL
 'over/at least/less than five'
- (7) {zhenghao / ganghao / zhiyou} wu-ge
 {exactly / just / only} five-CL
 'exactly/just/only five'
- (8) {dayue / jiangjin} wu-ge
 {nearly / approximately} five-CL
 'nearly/approximately five'
- (9) jihu yi-bai-ge
 almost one-hundred-CL
 'almost one hundred'
- (10) jieyu wu-ge han shi-ge
 between five-CL and ten-CL
 'between five and ten'
- (11) {you-xian / wu-xian / wu-shu} -ge
 {YOU-limit / without-limit / without-number} -CL
 'finitely many/infinately many/infinately many'
- (12) {jihu mei(you) renhe / jihu mei(you)}
 {almost NEG any / almost NEG}
 'hardly any / almost no'

Here are a couple more examples of complex generalized existential D-quantifiers in the form of modified numerals, built using Boolean connectives.

- (13) a. (you) bu chaoguo shi-ge xuesheng lai tiaowu
 (YOU) NEG over ten-CL student come dance
 'Not more than ten students came to the dance.'

- b. (you) zhishao liang-ge danshi bu chaoguo wu-ge xuesheng
 (YOU) at-least two-CL but NEG over five-CL student
 lai tiaowu
 come dance
 ‘At least two but not more than five students came to the dance.’

12.1.1.2 A-Quantifiers

In addition to having generalized existential quantifiers that are D-Quantifiers, Mandarin also has ones that are A-Quantifiers, e.g. *you-shihou* ‘sometimes’, *liang ci* ‘twice/two times’,³ *ba ci* ‘eight times’, *henduo ci* ‘many times’, *mei (you) henduo ci* ‘not very many times’, {*chang/shi/tong*}-*chang* ‘often’, *jihu bu* ‘(almost NEG) almost never’, *cong-bu* ‘never (lit. from-NEG)’. Below, we give examples of a few of these A-Quantifiers.

- (14) a. wo {changchang / congbu} zoulu shang-xue
 1sg {often / never} walk attend-school
 ‘I often / never walk to school.’
 b. wo baifang-guo ta {liang-ci / henduo-ci}
 1sg visit-ASP 3sg {two-time / many-time}
 ‘I have visited him twice / many times.’

12.1.1.3 Existential Constructions

Generalized existential (intersective) quantification is typically used in existential constructions. The closest counterpart to the English *there*-construction in Mandarin uses the existential verb *you*. Mandarin is different from English in the restricted distribution of indefinite subjects: generally, the existential verb *you* must be present to introduce one (cf. Footnote 1 in Aoun and Li (1989) and references therein).

We first describe existential constructions with *you* and then those without. According to Huang (1987), *you*-constructions have the general form

- (15) ... (NP) ... V ... NP ... (XP) ...
 1 2 3 4

Note that positions 1 and 4 are optional. In the examples below from Huang (1987), in (16-a), positions 2 and 3 are filled; in (16-b), positions 2 through 4 are filled (4 is filled with a clause of predication); in (16-c), positions 1 through 3 are filled (position 1 is filled with a locative NP), and in (16-d), all positions are

³ Because *ci* is a unit of time, it can be considered a classifier; thus we could also choose the gloss *liang-ci* ‘two-CL’. But to emphasize the use of *n-ci* as an A-Quantifier, for some natural number *n*, we choose to gloss *ci* as ‘time’, e.g. ‘two-time’ here.

filled (position 1 is filled with a locative NP and position 4 with a clause of predication).

(16) Existential constructions (Huang, 1987)

- a. you gui
YOU ghost
'There are ghosts (here).'
- b. you yi-ge ren hen xihuan ni
YOU one-CL man very like 2sg
'There is a man who likes you very much.'
- c. zhuo shang you yi-ben shu
table LOC YOU one-CL book
'On the table there is a book.'
- d. zhuo shang you yi-ben shu hen youqu
table LOC YOU one-CL book very interesting
'On the table there is a book that is very interesting.'

The form of *you*-constructions in Mandarin does not vary with tense or aspect. For example, we show that the form does not vary with tense in the affirmative existentials (17-a) and (17-b) below.

- (17) a. xianzai ban shang you wu-ge nusheng, qu-nian you shi-ge
now class LOC YOU five-CL girl last-year YOU ten-CL
'There are five women in the class now; last year there were ten
(women in the class.)'
- b. xianzai ban shang mei(you) nusheng, danshi qu-nian you
now class LOC NEG girl but last-year YOU
henduo-ge
many-CL
'There are no women in the class now, but last year there were many
(women in the class.)'

Other forms of existential constructions in Mandarin do not use *you* and do interact with aspect. Huang (1987) describes three such types: the first involves verbs related to coming into or going out of existence, e.g. *lai/qu* 'come/go' (18). The aspectual marker *le* (perfective) or *guo* (experiential) is required since these verbs refer to bounded events that have been completed or experienced. Aspectual markers other than these cannot be used.

- (18) shang-ge yue fasheng-*(le/guo) yi-jian chehuo
last-CL month happen-ASP/ASP one-CL accident
'An accident happened last month.'

The second type involves locational verbs, e.g. intransitive verbs *tang* ‘lie’, *zhan* ‘stand’ (19-a) and transitive verbs *gua* ‘hang’, and *fang* ‘put’ (19-b). If the locational verb is intransitive, then the only aspectual marker that can be used is *zhe*, which marks durative aspect; if the verb is transitive, then both aspectual markers *le* and *zhe* may be used, resulting in different meanings.

- (19) a. *chuang shang tang-{zhe/*le}* *yi-ge bingren*
 bed LOC lie-{ASP/*ASP} one-CL patient
 ‘On the bed lies a patient.’
- b. *fangjian li fang{-zhe/-le}* *liang-zhang chuang*
 room LOC put-{ASP/ASP} two-CL bed
 ‘Two beds are in the room/Two beds were put in the room.’

The third type of existential construction not using *you* can involve any transitive verb, so long as the aspectual markers *guo* or *le* are used (20).

- (20) *wo jiao-{guo/le}* *yi-ge xuesheng*
 1sg teach-{ASP/ASP} one-CL student
 ‘I had the experience of teaching a student/I taught a student.’

Thus far we have discussed affirmative existentials in Mandarin. Wh-question interrogatives (21-b) are built from affirmative existentials as in (21-a) by replacing the existential construction *you-ren* ‘someone (lit. YOU-man)’ with the wh-word *shei* ‘who’. Yes/No interrogatives are built from affirmative existentials like (21-a) by adding a question particle *ma* at the end of the sentence, as in (21-c).

- (21) a. *youren zai wuzi li*
 someone at house LOC
 ‘There is someone in the house.’
- b. *shei zai wuzi li*
 who at house LOC
 ‘Who is in the house?’
- c. *youren zai wuzi li ma?*
 someone at house LOC Q
 ‘Is there anyone in the house?’
- d. *mei(you) ren zai wuzi li*
 NEG man at house LOC
 ‘There isn’t anyone in the house.’

Negative existentials are built from affirmative existentials by adding *mei* ‘NEG’ before the existential predicate *you*, which may be optionally deleted (Li and Thompson, 1981, p. 416), as in (21-d). Negative existentials use the same negation construction as in simple declarative sentences, as shown in (22) and (23).

- (22) mei(you) (renhe) laoshu zai wuzi li
 NEG (any) mouse at house LOC
 ‘There aren’t (any) mice in the house.’
- (23) wo mei(you) kandao (renhe) laoshu zai wuzi li
 1sg NEG see (any) mouse at house LOC
 ‘I didn’t see (any) mice in the house.’

Note then, that in a sense, Mandarin has a monomorphemic ‘no’ that can be used to quantify NPs, *mei*: it co-occurs with *you* as *mei(you)* ‘NEG’, but since *you* may be optionally deleted, *mei* can occur alone in negative existentials:

- (24) mei(you) xuesheng lai shang-ke
 NEG student come attend-class
 ‘No students came to class.’

You can also be used to express possession, as shown in (25-b).

- (25) a. you san-ge nusheng zai wuzi li
 YOU three-CL girl at house LOC
 ‘There are three girls in the house.’
- b. wo you san-ge nuer
 1sg YOU three-CL daughter
 ‘I have three daughters.’

Like in English, certain determiners are blocked in Mandarin from the nominal phrase in existential sentences that are built with *you*. In these sentences, all types of generalized existential quantifiers (basic, value judgment, and modified) are allowed, as well as proportional quantifiers of type D + DE + N – those expressed as percentages and fractions (Section 12.1.5), as shown in (26-a); for *yixie* ‘some’ and unmodified numerals, the presence of *you* is required. As shown in (26-b), generalized universal quantifiers and proportional quantifiers expressed as part-to-whole ratios are blocked from the nominal phrase.

- (26) a. you {yixie / qi-ge / henduo / chaoguo ba-ge / shaoshu /
 YOU {some / seven-CL / many / over eight-CL / few /
 sanfenzhier de} xuesheng zai jiaoshi li
 two-thirds DE} student at classroom LOC
 ‘{Some / seven / many / over eight / few / two-thirds of the} students
 are in the classroom.’
- b. {*you quanbu de xuesheng dou / *you shi-ge xuesheng ganghao
 {YOU all DE student DOU / YOU ten-CL student just
 qi-ge} zai jiaoshi li
 seven-CL} at classroom LOC
 ‘{All students / exactly seven out of ten students} are in the classroom.’

12.1.1.4 Interrogatives

Interrogatives can be built from generalized existential quantifiers in Mandarin as in English, e.g. the cardinal quantifiers *duo-shao* ‘how {many/much} (lit. many-few)’ (27-a), and *duo-chang* ‘how often (lit. many-frequent)’ (27-b), as well as the non-cardinal quantifier *na-CL* ‘which (sg)’ or *na-xie* ‘which (pl)’ (27-c). Note that *duo* here has a degree interpretation, cf. English ‘how’ in ‘how many’, rather than acting as a generalized existential quantifier with the meaning ‘many’.

- (27) a. (you) *duoshao xuesheng lai ting yanjiang*
 (YOU) how-many student come listen talk
 ‘How many students came to listen to the talk?’
- b. *ni (you) duochang qiao-ke*
 2sg (YOU) how-often skip-class
 ‘How often do you play hooky?’
- c. (you) *naxie xuesheng tongguo-le kaoshi*
 (YOU) which student pass-ASP exam
 ‘Which students passed the exam?’

12.1.2 Generalized Universal (Co-Intersective) Quantifiers

Like English, Mandarin has generalized universal (co-intersective) quantifiers, both D-Quantifiers and A-Quantifiers.

12.1.2.1 D-Quantifiers

Examples of generalized universal D-Quantifiers in Mandarin include *quanbu*, *suoyou*, *zheng-CL* ‘all’, *mei-CL* ‘every/each’, *ge-CL* ‘GE’ (further described in Section 12.1.4), *quanbu chule wu-CL* ‘all but five’, {*jiangjin/jihu*} *quanbu* ‘nearly/almost all’, *bingfei* {*quanbu/suoyou/zheng-CL*} ‘not all’, *bingfei mei-CL* ‘not every’, *mei-CL* ... {*han/gen/huo*} ... ‘every ... and/and/or ...’. Mandarin *dou* has also often been considered a universal D-Quantifier and is discussed further in Section 12.1.3. In the examples below, we see that *dou* is obligatory in all instances of basic, unmodified universal quantification, but is optional in generalized universal quantification, e.g. ‘all but ...’.⁴

Below we give some example sentences with generalized universal D-Quantifiers in (28). Note in (28-a) that the universal quantifiers *quanbu* and

⁴ In the cases of generalized universal quantification, e.g. ‘all but ...’, the addition of *dou* seems to either pick out a specific set for quantification (28-d) or act as an intensifier (28-e). See also discussion of *dou* as a quantifier at the end of Section 12.1.3.

suoyou refer to the set of individual poets, while *zheng-qun* ‘zheng-CL’ refers to the set of poets as a single indivisible unit, as a group.

- (28) a. *suoyou shiren *(dou) zuobairimeng*
 all poet DOU daydream
 ‘All poets daydream.’
- b. *ban shang mei-ge xuesheng *(dou) xie-le yi-shou shi*
 class LOC every-CL student DOU write-ASP one-CL poem
 ‘Every student in the class wrote a poem.’
- c. *mei-ge nanren, nuren han xiaohai *(dou) likai-le zhe-ge*
 every-CL man woman and child DOU leave-ASP this-CL
chengshi
 city
 ‘Every man, woman and child left the city.’
- d. *bingfei suoyou de mao dou shi huise de*
 NEG all DE cat DOU is grey DE
 ‘Not all the cats are grey.’
- e. *ban shang suoyou de xuesheng chule liang-ge dou tongguo-le*
 class LOC all DE student except two-CL dou pass-ASP
kaoshi
 exam
 ‘All but two students in the class passed the exam.’

12.1.2.2 A-Quantifiers

Examples of generalized universal A-Quantifiers in Mandarin include *zongshi* ‘always’, *jihu zongshi* ‘almost always’, {*wulun/buguan*} *heshi* ‘whenever’, (*jihu*) *mei ci* ‘(almost) every time’.

Below are some example sentences in Mandarin with generalized universal A-Quantifiers.

- (29) a. *wo jihu zongshi da gongche shang-xue*
 I almost always ride bus attend-school
 ‘I almost always ride the bus to school.’
- b. *Zhangsan mei-ci guahuizi *(dou) hui ge-shang ziji*
 Zhangsan every-time shave DOU will cut-hurt self
 ‘Zhangsan cuts himself every time he shaves.’
- c. *Zhangsan {wulun heshi / buguan heshi} guahuizi *(dou) hui*
 Zhangsan {regardless when / regardless when} shave DOU will
ge-shang ziji
 cut-hurt self
 ‘Zhangsan cuts himself whenever he shaves.’

12.1.2.3 Interrogatives and Indefinite Pronouns

Like English, Mandarin can form universal quantifiers from interrogative or indefinite pronouns, e.g. {*wulun/buguan*} *shei* ‘whoever’, {*wulun/buguan*} *shenme* ‘whatever’, {*wulun/buguan*} *heshi* ‘whenever’, {*wulun/buguan*} *nali* ‘wherever’, {*wulun/buguan*} *ruhe* ‘however’, but *{*wulun/buguan*} *weishenme* *‘whyever’. Additionally, unlike in English, such universal quantifiers must also be followed by *dou*, as shown below.

- (30) wo {*wulun / buguan*} *shenme* *(*dou*) *xihuan* *chi*
 1sg {regardless / regardless} what DOU like eat
 ‘I like to eat whatever.’

Any discussion of generalized universal quantification in Mandarin is incomplete without attention to *dou* and *ge*; we discuss these in the next Sections 12.1.3 and 12.1.4.

12.1.3 *Dou*

Theoretical viewpoints on Mandarin *dou* have always been diverse and controversial. A great amount of work has been done on the analysis of *dou*, e.g. Chen (2008); Cheng (1991, 1995); Chiu (1990, 1993); Huang (1996); Lee (1986); Li (1995); Liu (1990); Lin (1998); Que (2006); Wu (1999); Zhang (1997). What follows are some basic facts concerning the syntax and semantics of *dou*.

Syntactically, *dou* has the following characteristics.

First, *dou* occurs preverbally:

- (31) a. *tamen* DOU *lai-le*
 3pl DOU come-ASP
 ‘They all came.’
 b. **tamen* *lai-le* DOU
 3pl come-ASP DOU
 ‘Lit. They all came.’

Dou in (31-a) can quantify the NP *tamen* ‘they’ when it is preverbal. However, *dou* is generally not able to quantify the NP when the NP is postverbal (31-b). An exception is that *dou* can quantify the *wh*-phrase *shenme* ‘what’ in object position⁵:

- (32) *ni* *dou* *mai-le* *shenme* *ne*
 2sg DOU buy-ASP what Q
 ‘What all did you buy?’

⁵ We thank an anonymous reviewer for noting this.

Second, *dou* can only quantify an NP to its left:

- (33) a. zhexie xuesheng dou xihuan wo
 these student DOU like me
 'All of these students like me.'
- b. *dou zhexie xuesheng xihuan wo
 DOU these student like me
 'Lit. All of these students like me.'

In (33-a), *dou* quantifies the NP to the left, *zhexie xuesheng* 'these students'. But in (33-b), there is no NP to the left for *dou* to quantify, thus, it is ungrammatical.

Third, *dou* does not have to be adjacent to the NP it quantifies, but there are some locality restrictions.

- (34) a. zhexie xuesheng wo dou xihuan
 these student 1sg DOU like
 'All of these students I like.'
- b. *zhexie xuesheng zhidao wo dou xihuan Zhangsan
 these student know 1sg DOU like Zhangsan
 'Lit. All of these students know that I like Zhangsan.'

Dou in (34-a) can quantify the object *zhexie xuesheng* 'these students' even though the subject *wo* 'I' intervenes between them. However, *dou* in (34-b) is in the embedded clause which makes it unable to quantify the subject of the main clause *zhexie xuesheng* 'these students'. In this sense, *dou*-quantification is clause-bounded.

However, in (35), the *dou* in the embedded clause can quantify the subject 'these students' in the main clause:

- (35) zhexie xuesheng wo zhidao Zhangsan dou xihuan
 these student 1sg know Zhangsan DOU like
 'All of these students, I know that Zhangsan likes (them).'

Notice that the subject 'these students' is moved from the object position of the embedded clause. In other words, *dou* and the NP it quantifies, 'these students', originate from the same clause. Therefore, it is plausible to say that cross-clausal *dou*-quantification is only possible when *dou* and the NP it quantifies are base-generated in the same clause (Wu, 1999). This account explains why (36) is ungrammatical. In (36), *dou* is base-generated in the main clause, whereas the NP it quantifies 'these students' is base-generated in the embedded clause.

- (36) *zhexie xuesheng wo dou zhidao Zhangsan xihuan
 these student 1sg DOU know Zhangsan like
 'Lit. All of these students, I know that Zhangsan likes (them).'

Semantically, *dou* has the following characteristics.

First, Cheng (1995) states that the NP that *dou* quantifies must have a plural interpretation, as shown in (37-a) and (37-b).

- (37) a. tamen dou hen taoyan Lisi
 3pl DOU very hate Lisi
 ‘They all hate Lisi.’
- b. *ta dou hen taoyan Lisi
 3sg DOU very hate Lisi
 ‘Lit. He all hates Lisi.’

However, this is not necessarily true. The plurality requirement seems vulnerable in the following two examples. In (38-a), the NP *zhe-ben shu* ‘this book’ that *dou* quantifies is semantically singular, but the sentence is acceptable. In addition, in (38-b), the NP *yi-qun xuesheng* ‘a group of students’ that *dou* quantifies is semantically plural, but the sentence is not acceptable.

- (38) a. zhe-ben shu wo dou du-le
 this-CL book 1sg DOU read-ASP
 ‘I have read all of the book. (I have read every part of the book.)’
- b. *yi-qun xuesheng dou chuxi-le huiyi
 one-CL student DOU attend-ASP conference
 ‘Lit. A group of students has all attended the conference.’

Notice that the NP *dou* quantifies in (38-b) is an indefinite NP *yi-qun xuesheng* ‘a group of students’. Zhang (1997) proposed that an NP that *dou* quantifies must be semantically measurable by the eventuality expressed by the predicate. The NP *yi-qun xuesheng* ‘a group of students’ is an indefinite NP so that it is not measurable. Wu (1999) has provided a further discussion characterizing NPs with respect to their *dou*-quantifiability.

Second, the NP modified by *dou* can only yield a definite interpretation. In (39), the NP *san-ge ren* must refer to three specific people, i.e. it is interpreted as a partitive, which means that this sentence lacks the reading ‘There are three people who left.’

- (39) san-ge ren dou likai-le
 three-CL man DOU leave-ASP
 ‘The three people left.’

Third, apart from the meaning of ‘all’, *dou* conveys other meanings: ‘already’ or ‘even’ in some sentences or structures, such as *lian . . . dou* ‘even’.

- (40) a. ta dou bashi sui le
 3sg already eighty year ASP
 ‘He is already eighty years old.’

- b. Lisi dou tongguo kaoshi le ni que meiyou
 Lisi even pass exam ASP, 2sg but NEG
 ‘Even Lisi passed the exam, but you didn’t.’
- c. Lisi qiong dao lian mianbao dou mai buqi
 Lisi poor reach even bread even buy NEG
 ‘Lisi is so poor that she can’t even afford the bread.’

Fourth, *dou* does not allow collective readings. In (41-a), there is no *dou*, and both collective and distributive readings are available. But in (41-b), the presence of *dou* makes the collective reading unavailable.

- (41) a. tamen chi-le yi-ge pingguo pai
 3pl eat-ASP one-CL apple pie
 ‘They each ate an apple pie.’ or ‘They ate an apple pie together.’
- b. tamen dou chi-le yi-ge pingguo pai
 3pl DOU eat-ASP one-CL apple pie
 ‘They each ate an apple pie.’

Some linguists consider Mandarin *dou* to be equivalent to the English universal quantifier ‘all’. However, this is not true because the distribution of *dou* and the syntactic and semantic restrictions on *dou* make it different from ‘all’ in English. In recent studies, it has been treated as a distributivity operator (Lee, 1986), generalized distributor (Lin, 1998), or a sum operator (Huang, 1996).

The examples in Section 12.1.2 show that *dou* is obligatory in basic universal quantification, but not for generalized universal quantification, e.g. universal quantification with exceptions like ‘all but . . .’: for basic universal quantification, *dou* is obligatory even in the presence of another universal quantifying determiner, as in (28-a). In Section 12.1.5, we also see that *dou* is optional in proportional quantification.

Note also, that in terms of the set-theoretic definition of generalized universal quantifiers being defined as co-intersective, *dou* could be considered a generalized universal quantifier in its own right. It is possible for *dou* to appear alone and act as a co-intersective determiner, as shown below.

- (42) mao dou shi bai de
 cat DOU is white DE
 ‘All the cats are white.’

In this sentence, *dou* satisfies the definition of co-intersectivity (Keenan and Moss, 2008):

- (43) A Det *D* is *co-intersective* iff

$$DAB = DXY \text{ whenever } A - B = X - Y.$$

Here, we have $DOU(A)(B) = T$ iff $A - B = \emptyset$, where $A = CAT$ and $B = IS\ WHITE$. (42) without *dou*, with just the bare NP *mao* ‘cat’ is a generic, e.g. ‘Cats are white.’ With the addition of *dou*, the quantification is done over a specific set of cats, for instance, the cats in that alley.

12.1.4 The Distributive Quantifier *ge*

Mandarin *ge* is a distributive quantifier: a sentence with *ge* is restricted to a distributive reading. For instance, (44-a) is a sentence without *ge*, and it has both distributive and collective readings. However, in (44-b), the presence of *ge* makes the collective reading unavailable (as with *dou* in (41-b)).

- (44) a. tamen chi-le yi-ge pingguo pai
 3pl eat-ASP one-CL apple pie
 ‘They each ate an apple pie.’ or ‘They ate an apple pie together.’
- b. tamen ge chi-le yi-ge pingguo pai
 3pl GE eat-ASP one-CL apple pie
 ‘They each ate an apple pie.’

In addition, *ge* can occur only preverbally. It is not grammatical to have *ge* in a postverbal or sentence-final position, as shown in (45-b) and (45-c), cf. (45-a).

- (45) a. tamen ge mai-le liang-dong fangzi
 3pl GE buy-ASP two-CL house
 ‘They each bought two houses.’
- b. *ge tamen mai-le liang-dong fangzi
 GE 3pl buy-ASP two-CL house
 ‘Lit. They each bought two houses.’
- c. *tamen mai-le liang-dong fangzi ge
 3pl buy-ASP two-CL house GE
 ‘Lit. They each bought two houses.’

In addition, according to Lin (1998), *ge* must quantify a distributable argument which is semantically plural: if the quantified NP is not distributable or is not semantically plural, then the sentence is unacceptable, as shown in (46-b).

- (46) a. zhaxie fanren ge chi-le san-wan fan
 these criminal GE eat-ASP three-CL rice
 ‘These criminals each ate three bowls of rice.’
- b. *zhe-ming fanren ge chi-le san-wan fan
 this-CL criminal GE eat-ASP three-CL rice
 ‘Lit. This criminal each ate three bowls of rice.’

Moreover, *ge* must bind an indefinite expression within the VP adjoined by *ge*.

- (47) a. ta han Lisi ge mai-le yixie wanju
 3sg and Lisi GE buy-ASP some toy
 ‘He and Lisi each bought some toys.’
- b. *ta han Lisi ge mai-le zhexie wanju
 3sg and Lisi GE buy-ASP these toy
 ‘Lit. He and Lisi each bought these toys.’
- c. *ta han Lisi ge likai-le
 3sg and Lisi GE leave-ASP
 ‘Lit. He and Lisi each left.’

The examples (47-b) and (47-c) show that if there is no indefinite expression for *ge* to bind, then the sentence is unacceptable. However, if there is an indefinite expression for *ge* to bind, such as *yixie wanju* ‘some toys’ in (47-a), the sentence is acceptable.

Note that the indefinite expression that *ge* binds is not necessarily a NP. For instance, in (48), the indefinite expression is the number of times, i.e. *san-bian* ‘three-time’.

- (48) zhe-liang-ben shu wo ge du-le san-bian
 these-two-CL book 1sg GE read-ASP three-time
 ‘These two books, I read three times each.’

In addition, the NP that *ge* quantifies can refer to events. The distributable argument that *ge* binds refers to two events, *wo zai taipei* ‘I am in Taipei’ and (*wo zai*) *tainan* ‘I am in Tainan’. Furthermore, as in (48), the indefinite expression that *ge* binds in (49) is ‘the number of times that I borrowed the book’, rather than the topicalized ‘book’.⁶

- (49) zhe-ben shu wo zai taipei han tainan ge jie-le san-ci
 the-CL book 1sg at Taipei and Tainan GE borrow-ASP three-time
 ‘This book, I borrowed three times each when I was in Taipei and when I was in Tainan.’

To summarize, *ge* in Mandarin is a distributive quantifier which occurs only preverbally, must quantify a distributable argument, and binds an indefinite expression within the VP.

12.1.5 Proportional Quantifiers

Mandarin has proportional quantifiers like English including D-Quantifiers and A-Quantifiers.

⁶ In both (48) and (49), it is also possible to not topicalize the object.

12.1.5.1 D-Quantifiers

The structure of proportional D-quantification in Mandarin differs from that in English. The type D + N in English is realized as two different types in Mandarin: D + (DE) + N and $D_{whole} + N + D_{part}$, and the type D + of + N in English is realized as D + DE + N in Mandarin.

D + (DE) + N

Proportional D + (DE) + N quantifiers include *duo-shu* (*de*) ‘most (lit. many-count)’ and *shao-shu* (*de*) ‘few (lit. few-count)’; *de*, which acts here as a partitive marker, is optional. For example,

- (50) *duoshu/shaoshu* (*de*) *shiren* *hui* *zuobairimeng*
 most/few (DE) poet will daydream
 ‘Most/few poets daydream.’

$D_{whole} + N + D_{part}$

Proportional quantification expressed as ratios of part-to-whole have the structure $D_{whole} + N + D_{part}$ quantifiers, e.g. *shi-CL* ... (*{ganghao/zhiyou/zhishao/chaoguo}*) *qi-CL* ‘({exactly/only/at least/more than}) seven out of ten ...’, *shi-CL* ... *zhiyou yi-CL* ‘only one ... in ten ...’, *shi-CL* ... *mei(you) yi-CL* ‘not one ... in ten’; we give some example sentences below:

- (51) a. *shi-ge* *shiren* (*ganghao*) *qi-ge* *hui* *zuomeng*
 ten-CL poet (exactly) seven-CL will dream
 ‘(Exactly) seven out of ten poets will dream.’
- b. *shi-ge* *xuesheng* *chaoguo* *yi-ge* *hui* *de-jiang*
 ten-CL student over one-CL will win-prize
 ‘More than one student in ten will win the prize.’
- c. *shi-ge* *laoshi* *mei(you)* *yi-ge* *zhidao* *wenti* *de* *daan*
 ten-CL teacher NEG one-CL know question DE answer
 ‘Not one teacher in ten knows the answer to the question.’

D + DE + N

Proportional quantification expressed as percentages or fractions have the structure D + DE + N, e.g. *bai-fenzhi-bashi de* ... ‘eighty percent of ... (lit. hundred-divide-eighty of ...)’, *san-fenzhi-er de* ... ‘two-thirds of ... (lit. three-divide-two of ...)’, *{da duoshu / da bufen} de* ... ‘a (large) majority of ...’, *{shao bufen / xiao bufen} de* ... ‘a (small) minority of ...’, *chaoguo baifenzhi-ershi de*

... ‘over twenty percent of ... (lit. over percent-twenty of)’, {*shaoyu/xiaoyu/diyu*} *sifenzhiyi de* ... ‘less than one-quarter of ...’, *jiayu baifenzhi-ershi han baifenzhi-sanshi de* ... ‘between twenty and thirty percent of ...’, *quanbu chule shifenzhiyi de* ... ‘all but a tenth of ...’, (*zhiyou*) *xiao bili de* ... ‘(only) a small percentage of ...’, *duoshao bili de* ... ‘what percentage of ...?’, *ji-fenzhi-ji de* ... ‘what fraction of ...?’, *ban-shu de* ... ‘half (of) ... (lit. half-count (of) ...)’’, *chaoguo banshu de* ... ‘more than half (of) ...’, *shaoyu/diyu ganghao banshu de* ... ‘less than exactly half (of) ...’ *quanbu/suoyou de* ‘all (of)’. We give two examples below:

- (52) a. *baifenzhi-sanshi de meiguo qingshaonian chaozhong*
 percenty-thirty DE America teenager overweight
 ‘Thirty percent of American teenagers are overweight.’
- b. *shaoyu wufenzhiyi de meiguoren shi wailaiyimin*
 under one-fifth DE American is immigrant
 ‘Less than one-fifth of Americans are immigrants.’

12.1.5.2 A-Quantifiers

A-Quantifiers expressing proportional quantification include adverbs such as (*bu*) *pinfan* ‘(in)frequently’, *yiban* ‘mostly/generally’, *tongchang* ‘usually’, *buchang* ‘seldom’, *henshao/nande* ‘rarely’, *shichang/changchang* ‘often’, *ouer dan buchang* ‘occasionally but not often’.

Below we give some example sentences with these:

- (53) a. *nusheng yiban tou gei oubama*
 woman mostly/generally vote for Obama
 ‘Women mostly vote for Obama.’
- b. *tongchang taofan zai duobi jingcha de shihou bu hui*
 Usually outlaw at elude police DE occasion NEG will
tingxialai he kafei
 stop drink coffee
 ‘Usually when outlaws flee the police, they don’t stop for coffee.’
- c. *Zhangsan shichang da gongche qu shang-xue*
 John often ride bus go attend-school
 ‘John often rides the bus to school.’
- d. *Zhangsan nande zai xingqitian cangan bowuguan*
 John rarely at Sunday visit museum
 ‘John rarely visits the museum on Sundays.’

As a final note, we observe that *dou* may optionally appear in proportional quantification, as shown below:

- (54) {baifenzhi-bashi / sifenzhiyi} de xinshenger (dou) shi nusheng
 {percent-eighty / one-fourth} DE newborn DOU be girl
 ‘Eighty percent / One fourth of the newborns are (all) girls.’

The addition of *dou* seems to create emphasis, but doesn’t change the truth conditions of the sentence significantly.

With our basic overview of Mandarin quantifiers complete, we turn to the interaction of Mandarin quantifiers and numeral classifiers.

12.1.6 Numeral Classifiers

Languages of Southeast and East Asia are well-known to be languages where classifiers are obligatory in expressions with numerical determiners: expressions with a numeral quantifying a noun, (and in fact, other classes of expressions as well), must include a classifier (Gil, 2008). As a well-known case of a numeral classifier language, Mandarin is no exception and has a rich inventory of numeral classifiers (Chao, 1968; Li and Thompson, 1981). Mandarin classifiers must occur in expressions with numerals (55-a), demonstratives (55-b), and some quantifiers (55-c) (Li and Thompson, 1981, p. 104).⁷

Each noun has its own proper classifier; some may have more than one. The classifier most frequently paired with different nouns is *ge*, (this is different from the distributive *ge* which is pronounced with Tone 4; the classifier *ge* has neutral tone) which has replaced some of the rarer classifiers (Li and Thompson, 1981, p. 112).

- | | |
|---|------------------------------|
| (55) Distribution of Mandarin classifiers | b. With demonstratives |
| a. With numerals | zhe-/na-*(ben) shu |
| liu-*(zhi) gou | this/that-CL book |
| six-CL dog | ‘this/that book’ |
| ‘six dogs’ | c. With universal quantifier |
| | mei-*(liang) che |
| | every-CL car |
| | ‘every car’ |

Do Mandarin classifiers occur obligatorily in all quantificational expressions?⁸ No. Quantification with A-Quantifiers does not require classifiers, unless the expression is a rate phrase, such as *yi-tian liang-ci* ‘one-CL two-CL’ (literally ‘one-day two-times’) meaning ‘twice a day’, cf. also Section 12.1.6.4 on

⁷ The word *ren* ‘person’ is an exception and may occur in determiner expressions without classifiers, e.g. *liu ren* ‘six people’, *mei ren* ‘every person’.

⁸ Li and Thompson (1981) suggest that numeral classifiers are obligatory only for some quantifiers, e.g. *zheng* ‘whole, entire’, *ji* ‘how many, a few’, *mei* ‘every’, and *mou-yi* ‘a certain’.

rate phrases. Among D-Quantifiers, existential, universal, and proportional quantifiers behave differently in interacting with classifiers: generalized existential and universal quantification typically require classifiers, while some cases of proportional quantification do and others do not.

Generalized existential quantifiers require classifiers except for *yixie* ‘some’ and *mei(you)* ‘NEG’:

- (56) Generalized existential quantifiers
- a. *yi*-(*)*pi* *ma* (Basic: numeral)
one-CL horse
‘a horse’
 - b. *henduo*-(*)*(tiao)* *kuzi* (Value Judgment)
many-CL pants
‘many pairs of pants’
 - c. *bu* *dao* *liu*-(*)*(ba)* *dao* (Modified)
NEG reach six-CL knife
‘fewer than six knives’
 - d. *yixie*-(*)*pi* *ma* (Basic, ‘some’)
some-CL horse
‘some horses’
 - e. *mei(you)*-(*)*bei* *cha* (Basic, ‘NEG’)
NEG-CL tea
‘no tea’

Note that in the expression *yi-xie* which is bimorphemic since *yi* is ‘one’, we do not consider *xie* a classifier since it is ungrammatical to say *{*liang* / *henduo* / *chaoguo* *ba*} -*xie* ‘{two / very-many / over} eight -*xie*’, cf. {*liang* / *henduo* / *chaoguo* *ba*} -*zhi*, where *zhi* is a classifier that can be used for counting some animals, i.e. *xie* does not show the same productivity of combination with different quantifiers that other classifiers do.

Most generalized universal quantifiers require classifiers but some do not. The universal quantifiers *quanbu* and *suoyou* cannot co-occur with classifiers. The generalized universal quantifiers that require classifiers include *zheng-CL* ‘entire-CL’ and *quan-CL* ‘whole-CL’, *mei-CL* ‘every-CL’, *ge-CL* ‘GE-CL’, and some modified quantifiers such as *quanbu chule wu-ge* ‘all except five-CL’. Note that in the last case, a classifier is required even though the basic form this modified quantifier is built from, *quanbu*, cannot co-occur with a classifier. However, the modified quantifier ends in a numeral, and so may behave like a basic generalized existential quantifier, i.e. whether the quantifier co-occurs with a classifier or not may also be dependent on only a portion of the quantificational expression that is most local to the classifier in some sense. Below, the first two examples show generalized universal quantifiers which may

not co-occur with classifiers and the rest of the examples show quantifiers that require classifiers.

- (57) Generalized universal quantifiers
- a. quanbu-*ge (de) laoshi dou lai-le
all-CL (DE) teacher DOU arrive-ASP
'All the teachers have arrived.'
 - b. suoyou-*ge (de) xuesheng dou chi-dao-le
all-CL (DE) student DOU late-arrive-ASP
'All the students were late.'
 - c. zheng-*(zhang) (de) zhi
whole-CL (DE) paper
'whole piece of paper'
 - d. quan-*(ban) (de) xuesheng tongguo-le kaoshi
whole-CL (DE) student pass-ASP exam
'All the class's students passed the exam.'
 - e. mei-*(zhi) *de mao chule zhe-*(zhi)
every-CL DE cat except this-CL
'every cat except this one'
 - f. ge-*(zhi) *de gou dou you ziji de zhuren
GE-CL DE dog DOU YOU self DE owner
'Each dog has its own owner.'
 - g. quanbu chule wu-*(ge) *de pingguo dou landiao-le
all except five-CL DE apple DOU rotten-ASP
'All but five apples were rotten.'

Classifiers cannot appear in proportional quantification of the structure $D + (DE) + N$:

- (58) duoshu/shaoshu-*ge (de) xiaohai xihuan tangguo
most/few-CL (de) child like candy
'Most children like candy.'

However, proportions expressed as part-to-whole ratios, of type $D_{whole} + N + D_{parts}$, must co-occur with classifiers, as in (59).

- (59) shi-*(ke) shu dangzhong chaoguo san-*(ke) sidiao-le
ten-CL tree among over three-CL die-ASP
'More than three out of ten trees died.'

Proportional quantification with structure $D + DE + N$, for percentages and ordinal fractions, behaves differently, as in (60): the classifier is optional and must occur as the word preceding *de*, which is obligatory.

If the classifier is excluded, then the percentage or fraction can refer to a single individual or members of a set, as in (60-a) and (60-b); if the classifier is included, then whether the percentage or fraction refers to a single individual or members of a set is unambiguous, as in (60-c) and (60-d), where the percentage/fraction can only refer to a single individual.

- (60) Proportional quantifiers: percentages and fractions
- a. sifenzhiyi *(de) zhi
one-fourth DE paper
'one fourth of the paper/one fourth of the papers'
 - b. baifenzhi-ershi-wu *(de) zhi
percently-twenty-five DE paper
'twenty-five percent of the paper/twenty-five percent of the papers'
 - c. sifenzhiyi-zhang *(de) zhi
one-fourth-CL DE paper
'one fourth of the paper'
 - d. baifenzhi-ershi-wu-zhang *(de) zhi
percent-twenty-five-CL DE paper
'twenty-five percent of the paper'

12.1.6.1 The Count-Mass Distinction in Mandarin

In English, the count/mass noun distinction can be drawn from the fact that mass nouns, unlike count nouns, require a classifier or other measure word to be counted, e.g. *two corns, but two ears of corn (mass noun); two dogs (count noun). Thus, in Mandarin, by this distinction, all nouns are mass nouns, since classifiers are obligatory to make nouns countable (Cheng and Sybesma, 1998).

In fact, though, there does exist a cognitive count/mass noun distinction in Mandarin, but it is encoded in the classifier rather than the noun (Cheng and Sybesma, 1998; Chien et al., 2003; Zhang, 2007). Mandarin numeral classifiers have been divided into two sets by many linguists, e.g. count-noun classifier and mass-noun classifiers (Zhang, 2007) or classifiers and massifiers (Cheng and Sybesma, 1998). We use the terminology of classifiers/massifiers below.

Croft (1994); Tai and Wang (1990), i.e., as referenced in Cheng and Sybesma (1998), have proposed that while massifiers create a unit of measure, e.g. *san-wan tang* 'three-CL soup', literally, 'three bowls of soup', classifiers do not, e.g. *san-zhi gou* 'three-CL dogs', where *zhi* does not create a unit of measure. That is, massifiers create units of measure that can allow the quantification of nouns that don't occur in individual, discrete units (they include measures that are like container expressions in English); while classifiers pick out individual,

discrete units for nouns that naturally occur in such units (these do not have analogs in English).

Evidence that the mass/count distinction in Mandarin is encoded in the classifier comes from examples where QNPs formed from the same noun but different classifiers behave differently (Cheng and Sybesma, 1998, pp. 4–5) and from an acquisition study by Chien et al. (2003).

Below is an example where the noun of interest is *mi* ‘rice’, and the massifier is *dai* ‘bag’ and the classifier is *li* ‘grain’ (61).

- (61) a. wo na-le liang-dai (de) mi
 1sg take-ASP two-CL DE rice (Massifier)
 ‘I took two bags of rice.’
- b. wo na-le liang-li *de mi (Classifier)
 1sg take-ASP two-CL DE rice
 ‘I took two grains of rice.’

Depending on whether rice is quantified with *dai* or *li*, the QNP behaves differently. Chao (1968, pp. 509, 555) and Cheng and Sybesma (1998) (and references therein) propose that massifiers can optionally take *de* between them and the noun being quantified, while classifiers cannot, cf. (61). Moreover, Cheng and Sybesma (1998), citing Tang (1990), state that adjectives can marginally appear between the numeral and the massifier, but not between the numeral and the classifier. Accordingly, there is a distinction below in (62). For *dai*, the adjective *da* ‘big’ can be added after the numeral. For *li*, adding *da* after the numeral is questionable in acceptability.

- (62) a. wo na-le liang da dai mi
 1sg take-ASP two big CL rice (Massifier)
 ‘I took two big bags of rice.’
- b. wo na-le liang ?da li mi (Classifier)
 1sg take-ASP two big CL rice
 ‘I took two big grains of rice.’

Based on examples like (61) and (62), the count/mass distinction is not encoded in the noun, but in the measure word: the classifier/massifier. Even in quantifying the same noun, the massifier allows an adjective before it and *de* after it, while the classifier may not.

The cross-sectional acquisition study by Chien et al. (2003) consisted of two guessing game tasks with 80 children from 3 to 8 years old as well as adult controls, in Taipei, Taiwan. A context was set up to see if children comprehended the count-/mass-classifier distinction:

- (63) Mi-laoshu shuo ta yao yi-tiao [something]
 Mickey-Mouse say 3sg want one-CL something
 ‘Mickey Mouse says he wants something.’

Children were asked to guess what Mickey Mouse wanted, given the context of the classifier, e.g. *tiao*, a count-classifier for long thin objects, above, and were presented with three objects, a combination of objects and substances to choose from. Results showed that even from a young age, children could reliably use contexts with a count-classifier to select objects with naturally discrete countable units and contexts with a mass-classifier to select objects without such naturally discrete countable units.

Put together with syntactic data in (61) and (62), the experimental data from the acquisitional study support the cognitive reality of the count/mass distinction in Mandarin being encoded in the numeral classifier.

12.1.6.2 Containers

Container expressions are massifiers in Mandarin. They create units of measure and they can always take *de* before the following noun (Chao, 1968, p. 603), as in (64). They can convert mass to count terms, as in (64-a), (64-b), and (64-c) and they retain their literal meaning: if one has drunk *qi bei jiu* ‘seven cups of wine’, then one has held actual cups of wine in one’s hand. Container expressions can take count nouns as well as mass nouns; examples with count nouns are given in (64-d) and (64-e).

- (64) Container expressions
- a. *qi bei (de) jiu*
seven cup (DE) wine
‘seven cups of wine’
 - b. *yi ping (de) niunai*
one bottle (DE) milk
‘one bottle of milk’
 - c. *san wan (de) tang*
three bowl (DE) soup
‘three bowls of soup’
 - d. *henduo he (de) tangguo*
many box (DE) candy
‘many boxes of candies’
 - e. *mei dai (de) shu*
every bag (DE) book
‘every bag of books’

Some container expressions can refer to atypical containers that are not convex geometric forms like boxes, bowls, bottles, etc, cf. (65). In this sense, they refer to abstract containers, as in measure phrases, discussed below. However, for these expressions, the containers do retain their literal meanings, as for the examples in (64). For instance, in (65-a), if you tell the restaurant that you are

reserving a banquet dinner for *san zhuo keren* ‘three tables of guests’, the restaurant will prepare three tables for you. In (65-b), if fifth grade is composed of *jiu ban xuesheng* ‘nine classes of students’ and the teachers complain there are too many classes, the students can be redistributed into seven classes, with more students in each class. (65-c) is a little trickier: we include (65-c) as a container expression because it is grammatical to have more than a single *dui* ‘pile’ of garbage, so this example behaves differently from those discussed for measure phrases in Section 12.1.6.3. But it is also possible to specify a single *dui* ‘pile’ of garbage, in which case the expression behaves like the measure phrases and loses its literal meaning.

- (65) Container expressions with atypical containers
- a. *san zhuo (de) keren*
three table (DE) guest
‘three tables of guests’
 - b. *jiu ban (de) xuesheng*
nine class (DE) student
‘nine classes of students’
 - c. *ji dui (de) lese*
several pile (DE) garbage
‘several piles of garbage’

12.1.6.3 Measure Phrases

Measure phrases in Mandarin are similar to container expressions but refer to abstract containers and create units of measurement; they are massifiers as well and are characterized by referring purely to quantity. They can use measurement units like units of weight and length, as in (66), so that the abstract container refers directly to quantity. The use of *de* is also optional, as for container phrases.

- (66) Measure phrases with units of weight/length
- a. *yi-qianke (de) yan*
one-kilogram (DE) salt
‘one kilogram of salt’
 - b. *liang-bang (de) doufu*
two-pound (DE) tofu
‘two pounds of tofu’
 - c. *san-chi (de) bu*
two-foot (DE) cloth
‘two feet of cloth’

Measure phrases can also refer directly to abstract containers as in (65). Chao (1968, p. 603) classifies these as *temporary measures*, which do not allow numerals greater than one as determiners, see (67). These expressions also tend to be opaque and the abstract containers do not retain their literal meaning. For instance, for (67-a) below, *yi di de shui* does not literally mean ‘one floorful of water’ but that there is water all over the floor, and one can not use any numeral in this expression other than ‘one’. Similarly, in (67-b), *yi shen de han* does not literally mean ‘one bodyful of sweat’, but a lot of sweat.

- (67) Measure phrases with abstract containers
- a. {yi / *liang / man} di (de) shui
 {one / *two / entire} floor (DE) water
 ‘a/entire floorful of water, lots of water on the floor’
- b. {yi / quan} shen (de) han
 {one / whole} body (DE) sweat
 ‘a bodyful of sweat, lots of sweat’

The abstractness and temporary nature of the massifiers described in this section underscore another distinction between classifiers/massifiers that has been discussed in the literature: a semantic difference, cf. Tai (1992, 1994), Tai and Wang (1990) as referenced in Chien et al. (2003). Classifiers denote inherent or permanent properties of an object, while massifiers simply indicate temporary properties of an object. For instance, *tiao* can be described as a classifier that is typically used for flexible objects that are cylindrical in shape and long and thin, e.g. rope, snake, fish – the classifier is associated with inherent geometric and structural properties of the objects and thus selects a set of objects with these properties. On the other hand, massifiers are not associated with inherent properties of objects and do not select a well-defined set of objects – they simply denote measures as shown below for the massifier *wan* ‘bowl’:

- (68) a. yi-wan fan/huasheng
 one-CL rice/peanut
 ‘a bowl of rice/peanuts’
- b. yi-wan lamian
 one-CL ramen
 ‘a bowl of ramen’

12.1.6.4 Units of Time and Distance

We have described measure phrases of weight and length; here are some examples of measure phrases in Mandarin using time and distance. Note that we gloss the measure phrases as units of time and distance rather than as classifiers (unlike in the discussion of rate phrases in A-quantification earlier in Section 12.1.6 on p. 665) to be clear about their meanings.

- (69) a. wo shui-le shi-xiaoshi
1sg sleep-ASP ten-hour
'I slept for ten hours.'
- b. yi-xingqi you qi-tian
one-week YOU seven-day
'There are seven days in a week.'
- c. wo gei-le yi-ge sanshi-fenzhong de yanjiang
1sg give-ASP one-CL thirty-minute DE talk
'I gave a thirty-minute talk.'
- d. fengdanbailu li bali wushi gongli
Fontainebleau away Paris fifty kilometer
'Fontainebleau is fifty kilometers from Paris.'
- e. wo bi ni gao san gongfen
1sg COMP 2sg tall three centimeter
'I am three centimeters taller than you.'
- f. wo yijing zou-le jiqian-li de lu
1sg already walk-ASP thousands-mile DE road
'I have already walked for thousands of miles.'

As for rate phrases, Mandarin word order is inverted from English word order: the denominator in the rate comes before the numerator. For instance, rather than say 'go 400 kilometers per hour' in (70-a) as in English, Mandarin speakers say *yi-xiaoshi zou sibai gongli* 'lit. one hour go 400 kilometers'.

- (70) a. na-liang huoche yi-xiaoshi zou si-bai gongli
that-CL train one-hour go four-hundred kilometers
'That train goes 400 kilometers per hour.'
- b. wo yi-tian pao ershi gongli
1sg one-day run twenty kilometer
'I run twenty kilometers a day.'
- c. Zhangsan {yi / mei}-tian xi lian {liang / san}-ci
John {one / every}-day wash face {two / three}-time
'John washes his face twice a day/three times a day/every day.'

12.1.6.5 Mass vs. Count Qs Without Classifiers

In Mandarin, D-quantifiers can combine freely with count nouns or mass nouns. Typically, D-quantifiers must appear with classifiers, containers, or measure phrases to combine with count and/or mass nouns, and these co-occurring elements can even convert a mass to a count noun, e.g. in container expressions.

As for D-quantifiers that do not co-occur with classifiers, e.g. *suoyou* ‘all’, *quanbu* ‘all’, *mei(you)* ‘NEG’, *yixie* ‘some’ – they can combine with count and mass nouns:

- (71) a. *suoyou de zhurou / zhu*
 all DE pork / pig
 ‘all the pork/pigs’
- b. *mei(you) qiyou / jiyau-zhan*
 NEG gasoline / gas-station
 ‘no gasoline/gas stations’
- c. *yi-xie tang / tang-wan*
 some soup / soup-bowl
 ‘some soup/soup bowls’

Thus, Mandarin does not have D-quantifiers that can combine with mass but not count nouns, or that combine with count but not mass nouns.

12.2 Phenomena Involving Mandarin Quantifiers

With the basic inventory of Mandarin quantifiers at hand, we turn to phenomena involving quantifiers in Mandarin.

12.2.1 Some NP Background

12.2.1.1 Definite NPs

Definite NPs in Mandarin are formed by using *zhe/na* ‘this/that’ + CL + NP, e.g. *zhe-ge nuren* ‘this-CL woman’, *na-zhi mao* ‘that-CL cat’, or in possessive constructions, NP₁ *de* NP₂ ‘NP₁’s NP₂’, e.g. *Zhangsan de haizi* ‘John DE child’ (John’s child). Proper nouns in Mandarin are typically multimorphemic, e.g. *Zhang-xiansheng* ‘Mr. Chang’, where *xiansheng* is a suffix which is used in addressing a male. Mandarin has adnominal demonstratives (e.g. *zhe/na* + CL), which can be used as pronominal demonstratives. For example, *zhe-ben shu* ‘this-CL book’, an adnominal demonstrative, can also be expressed as *zhe-ben*, a pronominal demonstrative, in which *ben* is the classifier appropriate for books. In Mandarin, *zhe-CL* ‘this’, *na-CL* ‘that’ cover the functions of both definite articles and demonstratives.

12.2.1.2 Generic NPs

In Mandarin, generic NPs are formed using bare nouns, as shown below⁹:

- (72) a. *gou yao-ren*
 dog bite-man
 ‘Dogs bite.’
- b. *tuzi fanzhi-de hen kuai*
 rabbit reproduce-DE very fast
 ‘Rabbits reproduce rapidly.’
- c. *konglong juezhong-le*
 dinosaur extinct-ASP
 ‘Dinosaurs are extinct.’

12.2.2 Monomorphemic Quantifiers

The typical quantifier in Mandarin is multimorphemic; the counterparts of monomorphemic quantifiers in English such as numerals must be followed by a classifier in Mandarin and thus are not monomorphemic in Mandarin. However, ‘no’ can be expressed with the monomorphemic quantifier *mei*, as shown above in (24), which results from a multimorphemic quantifier *mei(you)*, since *you* is optional, as in (74-a).

As in English, Mandarin has multiple universal quantifiers: *mei-CL* ‘each/every’, *quanbu/suoyou/zheng-CL* ‘all’, as discussed in Section 12.1.2.1. While these are multimorphemic, Mandarin does have a monomorphemic ‘all’, i.e. *dou* used as in Section 12.1.3. However, Mandarin does not have a monomorphemic form of ‘one’, since *yi* ‘one’ must be followed by a classifier in a quantificational expression, e.g. *yi-zhi gou* ‘one-CL dog’. As in English, *yi*, ‘one’ in Mandarin, also functions as an indefinite article, e.g. ‘one dog’ and ‘a dog’ are both *yi-zhi gou* ‘one-CL dog’. Mandarin does not have a monomorphemic proportional determiner, cf. Section 12.1.5. One exception to this is the A-Quantifier *chang* ‘often’, as shown below.

- (73) *ta chang(chang) lai ting yinyuehui*
 3sg often come listen concert
 ‘He often comes to concerts.’

Mandarin does not have a monomorphemic value judgment quantifier translating ‘many’ but has instead the bimorphemic *hen-duo* (lit. very-many).

⁹ The postverbal *de* in (72-b) is a different morpheme than the *de* used with nominals.

In Mandarin, A-quantifiers are not necessarily morphosyntactically more complex than D-quantifiers since both are typically multimorphemic. For instance the D-quantifier ‘a majority of/most’ is *da duo-shu de* while the A-quantifier ‘often’ is *shi-chang*. In addition, Mandarin does not have cases of semantic back-formation of A-quantifiers as in English, e.g. *a frequent visitor, a quick lunch*.

12.2.3 Decreasing NPs

Mandarin has determiners which build decreasing NPs. Below we show decreasing NPs built from intersective quantifiers (74), co-intersective quantifiers (75), and proportional NPs (76).

(74) Decreasing NPs built from intersective quantifiers

a. mei(you) xuesheng lai shang-ke.
 NEG student come attend-class
 ‘No students came to class.’

b. bu dao ba-ge xuesheng lai-le.
 NEG reach eight-CL student come-ASP
 ‘Fewer than eight students came.’

(75) Decreasing NPs built from co-intersective quantifiers

mei(you) xuesheng lai shang-ke.
 NEG student come attend-class
 ‘No students came to class.’

(76) Decreasing NPs built from proportional quantifiers

a. bu dao sifenzhiyi de xuesheng tongguo-le kaoshi.
 NEG reach one-fourth DE student pass-ASP exam
 ‘Less than a quarter of the students passed the exam.’

b. shi-ge shuishou bu chaoguo qi-ge hui chouyan.
 ten-CL sailor NEG over seven-CL will smoke
 ‘Not more than seven out of ten sailors will smoke.’

Decreasing NPs can license negative polarity items, as shown in (77).

(77) Decreasing NPs license negative polarity

a. shu-jia de shihou bu dao ba-ge xuesheng
 summer-vacation DE time NEG reach eight-CL student
 du-le renhe shu
 read-ASP any book

‘During summer vacation fewer than eight students read any books.’

- b. *shu-jia de shihou chaoguo ba-ge xuesheng du-le
 *summer-vacation DE time over eight-CL student read-ASP
 renhe shu
 any book
 ‘Lit. During summer vacation more than eight students read any books.’
- c. *shu-jia de shihou wu dao ba-ge xuesheng
 *summer-vacation DE time five reach eight-CL student
 du-le renhe shu
 read-ASP any book
 ‘Lit. During summer vacation five to eight students studied any books.’

In (77-a), the negative polarity item *renhe* ‘any’ occurs within the argument of the decreasing expression *bu dao ba-ge xuesheng* ‘not more than eight students’ and is licensed. However, in (77-b) and (77-c), the negative polarity item *renhe* occurs within the argument of the increasing expression *chaoguo ba-ge xuesheng* ‘more than eight students’ in the former and within the argument of the nonmonotonic expression *wu dao ba-ge xuesheng* ‘five to eight students’ in the latter and is not licensed in either case. This is evidence that the Ladusaw-Fauconnier Generalization holds in Mandarin. We note, though, that although *renhe* behaves like English *any* in this respect, the usage of *renhe* is pragmatically conditioned in a way that *any* isn’t: it seems to require particular focus conditions.

Like *renhe*, existential *wh*-phrases in Mandarin can be licensed by negative environments (Lin, 2004) (and references therein).

- (78) Negation licenses existential *wh*-phrases
- a. shu-jia de shihou mei(you) xuesheng nian-le shenme
 summer-vacation DE time NEG student study-ASP what
 ‘During summer vacation no students studied anything.’
- b. *shu-jia de shihou xuesheng nian-le shenme
 summer-vacation DE time student study-ASP what
 ‘During summer vacation students studied something.’

12.2.4 Boolean Compounds

Mandarin can form Boolean compounds of determiners for both D-Quantifiers and A-Quantifiers as shown below.

- (79) Boolean compounds of D-Quantifiers
- a. ming-nian zhishao liang-ge dan bu chaoguo shi-ge xuesheng hui
 next-year at-least two-CL but NEG over ten-CL student will
 dedao jiangxuejin.
 win scholarship
 ‘At least two but not more than ten students will get scholarships next year.’

- b. dabufen dan bu shi suoyou de shiren dou zai xiawu shuijiao.
 most but NEG be all DE poet DOU at afternoon sleep
 ‘Most but not all poets sleep in the afternoon.’
- c. meiyou mei-ge xuesheng huo mei-ge laoshi dou lai
 NEG every-CL student or every-CL teacher DOU come
 canjia wuhui
 attend party
 ‘Neither every student nor every teacher came to the party.’

(80) Boolean compounds of A-Quantifiers

- a. Zhangsan chi-dao-le liang-ci danshi bu chaoguo wu ci
 John late-arrive-ASP two-time but NEG over five times
 ‘John was late at least twice but not more than five times.’
- b. ?Lisi changchang dan bu mei-ci toupiao gei minzhudang
 ?Lisi often but NEG every-time vote for democrats
 ‘Lisi frequently but not always votes for the democratic party.’
- c. suiran Lisi changchang toupiao gei minzhudang dan bu shi
 although Lisi often vote for democrats but NEG be
 mei-ci.
 every-time
 ‘Lisi frequently but not always votes for the democratic party.’

12.2.5 Exception Phrases

Exceptions to generalizations in quantificational expressions can be expressed in Mandarin using *chule ... (yiwai)* ‘except’ as in the examples below:

- (81) a. chule Zhangsan (yiwai) mei-ge xuesheng dou
 except John (except) every-CL student DOU
 zao-dao-le
 early-arrive-ASP
 ‘Every student but John arrived early.’
- b. chule Zhangsan (yiwai) mei(you) xuesheng zao-dao
 except John (except) NEG student early-arrive
 ‘No student except John arrived early.’

In Mandarin, adverbial clauses typically have to precede the main clause (Lin, 2006), so that the sentence structure with the exception phrase *chule ... (yiwai)* preceding the quantified NP is preferable in Mandarin. In English, though, the order with the adverbial clause preceding the main clause e.g. *Except John, every/no student arrived early*, seems to put focus on *John*.

In Mandarin, the order with the adverbial clause following the quantified NP is still possible, though:

- (82) a. mei-ge xuesheng chule Zhangsan (yiwai) dou
 every-CL student except John (except) DOU
 zao-dao-le
 early-arrive-ASP
 ‘Every student but John arrived early.’
- b. meiyou xuesheng chule Zhangsan (yiwai) zao-dao-le
 NEG student except John (except) early-arrive-ASP
 ‘Nobody except John arrived early.’

12.2.6 *Only*

‘Only’ + NP in Mandarin can be expressed as *zhiyou*, as shown below.

- (83) a. zhiyou Zhangsan choudao da jiang
 only Zhangsan draw big prize
 ‘Only Zhangsan drew the big prize.’
- b. zhiyou xuesheng canjia dianli
 only student attend ceremony
 ‘Only students attended the ceremony.’

Like English ‘only’, Mandarin *zhiyou* could be taken as a counterexample to the generalization that all determiners are conservative (Keenan and Moss, 2008; Keenan, 2011), as shown by the different truth conditions of the two statements below:

- (84) a. zhiyou nusheng shi landuo de
 only girl be lazy DE
 ‘Only girls are lazy.’
- b. zhiyou nusheng shi landuo de nusheng
 only girl be lazy DE girl
 ‘Only girls are lazy girls.’

12.2.7 *Partitives: D + of + NP_{def.pl}*

As in English, definite plural NPs provide a conservativity domain, presupposed non-empty. The determiner may be cardinal as in (85-a), interrogative as in (85-b), universal as in (85-c), or proportional as in (85-d) and (85-e). For more details on partitive constructions with proportional quantifiers, see Section 12.1.5.

- (85) a. zhenghao liang-ge {wo / Zhangsan}-de xuesheng tongguo-le kaoshi
 just two-CL {1sg / John}-DE student pass-ASP exam
 ‘Just two of {my/John’s} students passed the exam.’
- b. zhexie xuesheng na-ge tongguo-le kaoshi?
 these student which-CL pass-ASP exam
 ‘Which of these students passed the exam?’
- c. (bingfei) quanbu (de) xuesheng dou tongguo-le kaoshi
 (NEG) all (DE) student DOU pass-ASP exam
 ‘(Not) All of the students passed the exam.’
- d. chaoguo {baifenzhi-bashi / liufenzhiwu} *(de) xuesheng
 more-than {percent-eighty / five-sixths} DE student
 tongguo-le kaoshi
 pass-ASP exam
 ‘More than eighty percent/five-sixths of the students passed the exam.’
- e. dabufen (de) xuesheng dou tongguo-le kaoshi
 most (DE) student DOU pass-ASP exam
 ‘Most of the students passed the exam.’

The closest Mandarin counterpart to the English ‘of’ in partitive constructions as shown above is *de*. However, it is optional in most cases, except for some proportional quantifiers as in (85-d), cf. Section 12.1.5; in fact, in some cases, it cannot appear where English ‘of’ does, as in (85-a) and (85-b).

As can be seen in the examples above, Mandarin has syntactically complex NP partitives; in fact there are no monomorphemic determiners that can be used to express partitives such as English ‘most’ (cf. *da bu-fen*).

12.2.8 Quantificational Negative Polarity Items

Like English ‘any’, *renhe* in Mandarin does not occur in affirmative contexts; its presence requires a decreasing function, and it can have an existential reading when under the scope of a decreasing function. For instance, suppose the context is that you are looking for long skirts for costumes for a school play and you ask a friend who you believe to own many skirts:

- (86) ni you (yixie) chang-qun, dui ma
 2sg YOU (some) long-skirt, right Q
 ‘You have some long skirts, right?’

She can then reply:

- (87) wo mei(you) (renhe) chang-qun.
 1sg NEG (any) long-skirt.
 'I don't have any long skirts./It is not the case that I have some long skirts.'

12.2.9 Predicates

Predicate quantifiers in Mandarin include value judgment cardinals (88-a), cardinal numerals (88-b), and some modified cardinal numerals (88-c) but not others (88-d) as predicate quantifiers.

- (88) Predicate quantifiers
- a. Value judgment cardinals
 lai-de xuesheng (you) {henduo / henshao}
 come-DE student (YOU) {many / few}
 'The students who came are many/few.'
 - b. Basic cardinal numerals
 lai-de xuesheng *(you) shi-ge
 come-DE student YOU ten-CL
 'The students that came were ten.'
 - c. Modified cardinal numerals
 lai-de xuesheng {zhishao / ganghao / jiangjin} (you)
 come-DE student {at-least / just / approximately} YOU
 shi-ge
 ten-CL
 'The students that came were at least/just/approximately ten.'
 - d. Other modified cardinal numerals
 lai-de xuesheng (you) {*quanbu / *yixie / *mei(you) /
 come-DE student (YOU) {all / some / NEG /
 *daduoshu / *mei-ge chule yi-ge / *shi-ge you qi-ge}.
 most / all-CL but one / ten-CL YOU seven-CL}
 'Lit. The students that came were all/some/none/most/all but one/
 seven out of ten.'

12.2.10 NPs

Most quantifiers in Mandarin can function as NPs, unlike in English, where the distribution of quantifiers that can do so is more restricted. Some generalized existential quantifiers as in (89) must co-occur with the classifier appropriate for the antecedent. For generalized existential quantifiers with plurality, *xie* is used in (89-b), as discussed in Section 12.1.6. For generalized universal quantifiers,

dou must be used and the word order is restricted such that the quantifier appears before *dou*, which appears before the verb, *mai* ‘buy’ in (90); additionally classifiers are used only in some cases, e.g. if the quantifier is *mei* ‘every’, as in (90-b). Proportional classifiers can also function as NPs, as shown in (91).

(89) Generalized existential quantifiers as NPs

a. *naxie lingdai hen pianyi suoyi wo mai-le* {*yi* / *san* / *ji* /
those tie very cheap so 1sg buy-ASP {one / three / several /
henduo} -*tiao*
many} -CL

‘Those ties were very cheap so I bought one/three/several/many.’

b. *naxie lingdai hen pianyi suoyi wo mai-le yixie* -**tiao*
those tie very cheap so 1sg buy-ASP some -CL

‘Those ties were very cheap so I bought some.’

(90) Generalized universal quantifiers as NPs

a. *naxie lingdai hen pianyi suoyi wo quanbu*-**tiao dou mai le*.
those tie very cheap so 1sg all-CL DOU buy ASP
‘Those ties were very cheap so I bought them all.’

b. *naxie lingdai hen pianyi suoyi wo mei*-**(tiao) dou mai le*.
those tie very cheap so 1sg every-CL DOU buy ASP
‘Those ties were very cheap so I bought every one.’

(91) Proportional quantifiers as NPs

a. *naxie lingdai hen pianyi suoyi wo dabufen dou mai le*.
those-CL tie very cheap so 1sg most DOU buy ASP
‘Those ties were very cheap so I bought most of them.’

b. *naxie lingdai hen pianyi suoyi wo mai-le baifenzhi*-*ershi*.
those tie very cheap so 1sg buy-ASP percent-twenty-CL
‘Those ties were very cheap so I bought twenty percent of them.’

12.2.11 Distribution

12.2.11.1 Mandarin QNPs Occur in all Major Grammatical Functions

Mandarin QNPs occur in all major grammatical functions, as illustrated below.

(92) a. *you san-ge xuesheng chi-bao le* (Subject)
YOU three-CL student eat-full ASP
‘Three students are full.’

b. *Zhangsan zhi huida-le san-dao wenti* (Direct object)
John only answer-ASP three-CL question
‘John only answered three questions.’

12.2.11.3 Scope Ambiguities

In Mandarin, two or more arguments of a given predicate can be bound simultaneously by QNPs, leading to scope ambiguities.

In Aoun and Li (1989, p. 7) and Aoun and Li (1993), it is stated that, unlike in English, in Mandarin, the interpretation of doubly quantified structures, e.g. (94), is unambiguous, with only the subject wide scope (SWS) every > one reading available. However, scope interpretation interacts with *wh*-operators like in English: if there is a subject *wh*-phrase then only a SWS and not an object wide scope (OWS) reading with who > every allowed, but if there is an object *wh*-phrase then either SWS or OWS readings are possible.

- (94) a. Every man loves a woman. (ambiguous)
 b. mei-ge ren dou xihuan yi-ge nuren
 every-CL man DOU like one-CL woman
 ‘Everyone loves a woman.’ (unambiguous SWS)
 SWS: for every person *x*, *x* loves a woman
 *OWS: one woman is such that every man loves her
- (95) a. Who bought everything for Max? (unambiguous SWS)
 b. shei gei Zhangsan mai-le mei-ge dongxi
 who for John buy-ASP every-CL thing
 ‘Who bought everything for John?’ (unambig. SWS)
- (96) a. What did everyone buy for Max? (ambiguous)
 b. mei-ge ren dou gei Zhangsan mai-le shenme?
 every-CL man DOU for John buy-ASP what
 ‘What did everyone buy for John?’ (ambiguous)

However, other work suggests that even doubly quantified sentences without *wh*-operators, such as (94), are ambiguous in Mandarin (Kuno et al., 1999; Zhou and Gao, 2009). Kuno et al. (1999, p. 96) states that there are speakers who in fact find (94) ambiguous, citing also Wu (1992). Zhou and Gao (2009) presents both off-line judgment task and on-line eyetracking data showing that doubly quantified sentences with interaction with *wh*-phrases like (94) can be ambiguous, with both SWS and OWS readings.

In general, the particular instantiation of a doubly quantified construction given the two quantifiers can affect the scope interpretation. For instance, (94) contains the quantifiers *mei-ge* ‘every-CL’ in subject position and ‘*yi-CL*’ in object position, and while the OWS reading is possible for some speakers, it is less marginal in the example below, which uses the same quantifiers:

- (97) mei-ge yinhangjia dou xiang-zhe yi-jian shi
 every-CL banker DOU think-ASP one-CL issue
 ‘Every banker is thinking of an issue.’
 SWS: For every banker *x*, *x* is thinking of an issue
 OWS: There is one issue, such that every banker is thinking of it.

In (98) with an existential and a universal quantifier in the subject and object position respectively, Mandarin only has a SWS reading: there is one editor x such that x read all the manuscripts, unlike English, which also has the OWS reading: each manuscript is such that at least one editor read it.

- (98) you (yi)-ge bianji du-le mei-pian (de) shougao
 YOU one-CL editor read-ASP every-CL DE manuscript
 ‘Some editor read every manuscript.’¹⁰

In (99-a) below with basic numeral quantifiers, Mandarin has both an OWS reading and group reading, but not a SWS reading, and the group reading is most prominent.

SWS: There are three instructors each one of which graded one hundred exams.

OWS: There are one hundred exams such that each instructor graded them.

Group: There is a group of three instructors and a group of one hundred exams and the group of instructors graded the group of exams.

Adding the distributive quantifier *ge* as in (99-b) forces the SWS reading. Adding *zonggong* ‘in total’ preverbally as in (99-c) yields both group and OWS readings, with the OWS reading more prominent; in either position, *zonggong* modifies the QNP *yi-bai-fen kaojuan* ‘one hundred exams’.

- (99) a. san-ge laoshi gai-le yi-bai-fen kaojuan
 three-CL teacher grade-ASP one-hundred-CL exam
 ‘Three instructors graded one hundred exams.’ (group, OWS)
- b. san-ge laoshi ge gai-le yi-bai-fen kaojuan
 three-CL teacher GE grade-ASP one-hundred-CL exam
 ‘Three instructors each graded one hundred exams.’ (SWS)
- c. san-ge laoshi zonggong gai-le yi-bai-fen kaojuan
 three-CL teacher total grade-ASP one-hundred-CL exam
 ‘Three instructors graded one hundred exams in total.’ (OWS, group)

As in English, modified numerals in object position tend to force narrow scope in Mandarin. In (100-a) below, as in English, the interpretation is ambiguous between SWS and OWS readings:

SWS: For every student x , x read three Zhang Ailing novels

OWS: Three Zhang Ailing novels were such that every student read them

However, in (100-b), the addition of *zhishao* ‘at least’ forces a SWS reading.

¹⁰ English ‘some’ as in (98) does not have a direct correspondent in Mandarin; the closest expression is *you yi-ge* ‘YOU one-CL’ or *mo-ge* ‘certain-CL’.

- (100) a. *mei-ge xuesheng zai shu-jia dou du-le san-ben*
 every-CL student at summer-vacation DOU read-ASP three-CL
zhang ailing de xiaoshuo
 Zhang Ailing DE novel
 ‘Every student read three Zhang Ailing novels over the summer
 vacation.’ (ambiguous)
- b. *mei-ge xuesheng zai shu-jia dou zhishao du-le*
 every-CL student at summer-vacation DOU at-least read-ASP
san-ben zhang ailing de xiaoshuo
 three-CL Zhang Ailing DE novel
 ‘Every student read at least three Zhang Ailing novels over the
 summer vacation.’ (SWS)

In Mandarin, a decreasing NP in subject position forces a SWS reading (101-a), and a decreasing NP in object position forces a SWS reading still: as in English, decreasing NPs are just interpreted in situ. In Mandarin, *mei(you)* ‘NEG’ negation of NPs is not felicitous in object position, but other decreasing NPs can be in object position (101-b).

- (101) a. {*mei(you) (yi-ge) / budao san-ge*} *zhengke zai yimaihui*
 {NEG one-CL / fewer-than three-CL} politician at fair
bajie mei-ge laoban
 fawn every-CL boss
 ‘No/fewer than three politicians fawned over every boss at the fair.’
- b. *mei-ge zhengke zai yimaihui bajie* {**mei(you) / budao*
 every-CL politician at fair fawn {NEG / fewer-than
san-ge} *lao-ban*
 three-CL} boss
 ‘Every politician fawned over fewer than three bosses at the fair.’

Here is one more pair of examples illustrating NPs interpreted in situ. In (102-a), the decreasing object NP *shi-ge bu chaoguo qi-ge de wenti* ‘not more than seven out of ten questions’ is interpreted in situ (SWS reading), and in (102-b), the subject NP *quanbu chule yi-ge xuesheng* ‘all but one-CL student’ is also interpreted with an in situ (SWS) reading.

- (102) a. *zhiyou yi-ge xuesheng huida-le shi-ge bu chaoguo*
 only-YOU one-CL student answer-ASP ten-CL NEG over
qi-ge de wenti
 seven-CL DE question
 ‘Just one student answered not more than seven out of ten
 questions.’

- b. *quanbu chule yi-ge xuesheng huida-le zhishao yi-ge*
 all except one-CL student answer-ASP at-least one-CL
wenti
 question
 ‘All but one student answered at least one question’

D-quantifiers that are near synonyms can result in different scope interpretation. For example, in the sentences with universal quantifiers below in (103-a) and (103-b), the sentences with the quantifiers *mei-pian* ‘every-CL’ and *ge-pian* ‘GE-CL’ in (103-a) have scope ambiguity between SWS and OWS readings. However, the sentences with the quantifiers *suoyou/quanbu* ‘all’ are unambiguous with only a SWS reading. Thus, Mandarin behaves like English, where ‘Some editor read all the manuscripts’ has just a SWS reading but ‘Some editor read every/each manuscript’ has scope ambiguity.

- (103) a. *you liang-ge bianji du-le {mei-pian / ge-pian} (de)*
 YOU two-CL editor read-ASP {every-CL / GE-CL} (DE)
baodao
 news-report
 ‘Two editors read every/each manuscript.’ (ambiguous)
- b. *you liang-ge bianji du-le {suoyou / quanbu} de baodao*
 YOU two-CL editor read-ASP {all / all} DE news-report
 ‘Two editors read all of the news-reports.’ (SWS)

In Mandarin, *suoyou (de) + N* ‘all the + N’ and *mei-ge + N* ‘every-CL + N’ occur naturally with symmetric predicates, allowing collective interpretations, but the distributive *ge-ge + N* ‘GE-CL + N’ does not. This is in contrast to English, where ‘all the + N’ occurs naturally with symmetric predicates, but ‘every/each + N’ does not.

- (104) a. *{suoyou (de) / mei-ge} xuesheng zuotian wanshang dou*
 {all DE / every-CL} student yesterday night DOU
ju zai yuanzi li
 gather at courtyard LOC
 ‘All the students / Every student gathered in the courtyard last night.’
- b. **ge-ge xuesheng zuotian wanshang dou ju zai yuanzi*
 GE-CL student yesterday night DOU gather at courtyard
li
 LOC
 ‘Lit. Each student gathered in the courtyard last night.’

In addition, Mandarin scope interpretations with universal quantifiers can be influenced by the presence of *dou*. In the example (105) below with *suoyou/*

quanbu ‘all’, the presence of *dou* results in a distributive reading, as discussed in Section 12.1.3.

- (105) {suoyou / quanbu} xuesheng de zhaopian dou zai zhuozi shang
 {all / all} student DE picture DOU at table LOC
 ‘For each student, a picture of that student was on the table.’
 (as many pictures as students)

However, if there’s no *dou*, then in addition to the meaning ‘as many pictures as students’, there is another possible collective meaning available where there is one picture with many students on the table. If *mei-ge/ge-ge* ‘every-CL/GE-CL’ are used for universal quantification instead, cf. (106), then *dou* is required and the distributive but not the collective reading is possible.

- (106) {mei / ge} -ge xuesheng *(de) zhaopian *(dou) zai zhuozi shang
 {every / GE} -CL student DE picture DOU at table LOC
 ‘For each student, a picture of that student was on the table.’
 (as many pictures as students)

As discussed above in (95) and (96), the interaction of QNPs and *wh*-phrases in Mandarin is the same as in English: if the subject in a sentence is a *wh*-phrase, *na-ge xuesheng* ‘which student’ (107), then the scope interpretation of the sentence is unambiguously a SWS reading, but if the object is a *wh*-phrase, *na-ge wen-ti* ‘which question’ (108), then the scope interpretation is ambiguous between SWS and OWS readings.

- (107) na-ge xuesheng huida-le {zuiduo / suoyou} de wen-ti
 which-CL student answer-ASP {the-most / all} DE question
 ‘Which student answered the most/all the questions?’ (SWS)
- (108) mei-ge xuesheng huida-le na-ge wenti
 every-CL student answer-ASP which-CL question
 ‘Which question did each student answer?’ (ambiguous)

However, if the subject is a QNP with the universal quantifier *suoyou* ‘all’, then only the OWS reading is available, as in English.

- (109) suoyou de xuesheng huida-le na-ge wenti
 all DE student answer-ASP which-CL question
 ‘Which question did all the students answer?’ (OWS)

In self-embedding of QNPs in Mandarin, the choices of determiners on the whole NP and on the embedded NP are fairly independent, e.g. {*mei-ge yiyuan de yi-ge/liang-ge/mei-ge*} *pengyou* ‘{one-CL/two-CL/every-CL} friend(s) of every senator’ and the expressions built from the embedding are ambiguous, as shown below with the expression *mei-ge yiyuan de liang-ge pengyou* ‘two friends of every senator’:

- (110) women bangjia-le mei-ge yiyuan de liang-ge pengyou
 1pl abduct-ASP every-CL senator DE two-CL friend
 'We abducted two friends of every senator.'

The two possible meanings are: (i) for every senator y , two friends of y have been abducted by us, and (ii) two people, each of whom is a friend of every senator, have been abducted by us.

Note however, that pragmatic considerations can restrict the possible readings, as shown below, where *pengyou* 'friend' has been replaced by *jiaren* 'family member.' In this case, it is implausible that two people could be family members of every senator. Thus, the only reading available is the one where, for every senator y , two family members of y have been abducted by us.

- (111) women bangjia-le mei-ge yiyuan de liang-ge jiaren
 1pl abduct-ASP every-CL senator DE two-CL family-member
 'We abducted two family members of every senator.'

As in English, Mandarin exhibits scope ambiguity between nominal and verbal quantifiers, as shown below:

- (112) liang-ge nan-sheng chang-le san-ci
 two-CL boy sing-ASP three-time
 'Two boys sang three times.'

Here, the two possible interpretations are the following:

SWS: There are two boys who sang three times each.

OWS: On three occasions, there were two boys who sang.

12.2.12 Distributivity

Mandarin has a distributive operator *ge*, discussed in Section 12.1.4. It usually occurs in preverbal position, as in (113-a), (113-b) and (113-c). In (113-a), without *ge* in the sentence, the sentence means that there are two spears in total being carried. When *ge* is added, it means that each person is carrying two spears. In (113-b), the sentence without *ge* means that the person put a flag in one place, then moved it to a second place, and then a third. With *ge*, three flags are involved, and there was one put at each of three places. Similarly, in (113-c), six books at a time are involved, and each man carried three at once.

In addition to expressing distributivity with *ge*, Mandarin can also use reduplication, as shown below in (113-d), in which students file two-by-two into two separate lines; (in Mandarin these two separate lines are considered one unit, *yi-pai*). Examples (113-e) and (113-f) compare distributivity expressed by *ge* and reduplication of the numeral + classifier. In (113-e) using *ge*, there were six suitcases in total, and John took three, and Lisi took the other three. In (113-f) using reduplication, there were many suitcases, at least three, and John

and Lisi carried three suitcases each time together (three in total each time) when they went into the hotel.

- (113) a. tamen ge na liang-zhi mao
3pl GE take two-CL spear
'They carry two spears each.'
- b. ta zai san-ge difang ge cha yi-zhi qizi
3sg at three-CL place GE stab one-CL flag
'He put one flag at each of the three places.'
- c. liang-ge ren ge na san-ben shu
two-CL men GE take three-CL book
'Two men carried three books each/*three books are such that each of two men carried them.'
- d. zhexie xuesheng liang-ge liang-ge paicheng yi-pai
those student two-CL two-CL form one-line
'Those students lined up two by two.'
- e. Zhangsan han Lisi ge ti san-ge xinglixiang jin luguan
John and Lisi GE carry three-CL suitcase into hotel
'John and Lisi moved three suitcases each into the hotel.'
- f. Zhangsan han Lisi ba xinglixiang san-ge san-ge ti jin
John and Lisi BA suitcase three-CL three-CL carry into
luguan
hotel
'John and Lisi moved suitcases three by three into the hotel.'

12.2.13 Indexing Function of Universal Quantifier

In Mandarin, the domain of the universal quantifier can be used as an index set for another set being enumerated. For example, in (114-a), as in the English translation, the interpretation is as follows: Write $\#(\text{Toyota}, n)$ for the number of Toyotas bought by people in year n . Then (114-a) means: for all years n , $\#(\text{Toyota}, n + 1) > \#(\text{Toyota}, n)$. In Mandarin, 'more' can be expressed as *yue-lai-yue-duo*, which specifies a monotonically increasing function. Note also that unlike in English, the domain of the universal quantifier *mei* 'every' but not the distributive *ge* (similar to English 'each') can be used as an index set. Like English, generalized existential quantifiers like *yixie* 'some', *xu* 'five' also cannot be used to index another set. Similarly, in (114-b), the domain of *mei-li* 'every-CL' is used to index the set of trees.

- (114) a. {mei / *ge / *yixie / *wu}-nian yuelaiyueduo (de) ren mai
every / GE / some / five}-year more-and-more (DE) man buy
Toyota
Toyota
'Every year more people buy Toyotas.'

- b. mei-li zhongzi zhang yi-ke shu
 every-CL seed grow one-CL tree
 ‘For every seed, a tree grows.’

Additionally, there is a well-known Chinese saying:

- (115) yi-li mi yang bai yang ren
 one-CL rice raise hundred kind man
 ‘From a grain of rice, a hundred kinds of people are raised.’

More figuratively translated, this means that even under identical nurturing conditions, people can become totally different. In the saying, rather than having a one-to-one mapping as in the cases where the domain of universal quantifiers are used to index another set, there is a one-to-many mapping.

12.2.14 Type (2) Quantifiers

Mandarin has type (2) quantifiers: functions that express a property of binary relations. For instance, (116-a) refers to a binary relation on the set of pairs (s, q) for s a student and q a question that s has answered. We give examples of type (2) quantifiers below.

- (116) a. naxie xuesheng huida-le naxie wenti
 which-CL student answer-ASP which-CL question
 ‘Which students answered which question?’
- b. suoyou (de) xuesheng huida-le xiangtong de wenti
 all (DE) student answer-ASP same DE question
 ‘All the students answered the same questions.’
- c. {mei / ge} -ge xuesheng huida-le bu tong de wenti
 {every / GE} -CL student answer-ASP NEG same DE question
 ‘Each student answered a different question.’
- d. bu tong (de) xuesheng huida-le bu tong de wenti
 NEG same (DE) student answer-ASP NEG same DE question
 ‘Different students answered different questions.’
- e. Zhangsan han Lisi zhu zai linjin de cunzhuang
 John and Lisi live at neighboring DE village
 ‘John and Lisi live in neighboring villages.’
- f. Zhangsan han Lisi zhichi didui de zheng-dang
 John and Lisi support opposing DE political-party
 ‘John and Lisi support opposing political parties.’

- g. tamen zhu zai tong yi-dong dalou de bu tong gongyu
3pl live at same one-CL building DE NEG same apartment
'They live in different apartments in the same building.'
- h. suoyou de fangke da-le tongyang yanse de lingdai
all DE visitor wear-ASP same color DE neck-tie
'All the visitors wore the same color necktie.'
- i. Zhangsan gen Mali tiaowu danshi mei(you) bie ren gen qita
John with Mary dance but NEG other man with other
ren tiaowu
man dance
'John danced with Mary but no one else danced with anyone else.'
- j. zhxie hua yinggai gua zai bu tong de fangjian huoshi
this-CL painting should hang at NEG same DE room or
tong yi-ge fangjian de bu tong de qiang shang
same one-CL room DE NEG same DE wall LOC
'These paintings should be hung in separate rooms or on opposite
walls of the same room.'
- k. bu tong de peishenyuan cong xiangtong de zhengju tuilun
NEG same DE juror from same DE evidence infer
chu bu tong de jielun
out NEG same DE conclusion
'Different jurors drew different conclusions from the same evidence.'

12.2.15 Type ((1,1),1) Quantifiers

12.2.15.1 Comparative D-Quantifiers

Like in English, Mandarin comparative D-quantifiers are built from two place adnominal determiners. However, they are not always constituents; thus, unlike in English, comparative D-quantifiers don't have the basic distribution of other NPs. Mandarin can build them in three ways: (i) NP₁ *bi* NP₂ *D_{adnominal}* (117-a), or (ii) NP₁ *D_{adnominal}* *yu* NP₂ (117-b), or (iii) NP₁ *gen* NP₂ *yi* *yang* *D_{adnominal}* (117-c). In the first and third case, the position where the *D_{adnominal}* is can also be filled by adjectives, e.g. *nianqing* 'young'; in the second case, the *D_{adnominal}* position can be filled only by *duo* 'many' or *shao* 'few'. The first and second ways are used to build unequal comparisons, cf. 'more/less than' while the third way is used to build equal comparisons, cf. 'as many as', 'as few as'.

- (117) a. lai canjia wuhui de xuesheng bi laoshi {duo / shao}
come attend party DE student COMP teacher {many / few}
'More/fewer students than teachers came to the party.'

- b. lai canjia wuhui de xuesheng {duoyu / shaoyu} laoshi
 come attend party DE student {more / fewer} teacher
 ‘More/fewer students than teachers came to the party.’
- c. lai canjia wuhui de xuesheng gen laoshi yiyang duo
 come attend party DE student with teacher same many
 ‘As many students as teachers came to the party.’

The sentences below with comparative quantification in direct objects can be ambiguous with respect to which sets are being compared: for instance, in both (118-a) and (118-b), the sets compared may be either ‘the students I know’ and ‘the teachers I know’ or ‘the students I know’ and ‘the students the teacher knows.’

- (118) a. wo renshi de xuesheng bi laoshi duo
 1sg know DE student COMP teacher many
 ‘I know more students than teachers./I know more students than the teacher does.’
- b. wo renshi de xuesheng duoyu laoshi
 1sg know DE student more teacher
 ‘I know more students than teachers./I know more students than the teacher does.’

In raising to object (119), passivizing to subject (120), or possessor constructions (121), the structure of comparative quantification in an object, subject, or possessor, respectively, must be altered from when it is the subject as in (117). These alterations have the result that, while comparative quantificational subjects and direct objects are not constituents – unlike in English – they *are* QNPs (and constituents), like in English, in the examples below:

- (119) a. wo xiangxin bi nansheng duo de nusheng qian-le
 1sg believe COMP man many DE woman sign-ASP
 tongyishu
 consent
 ‘I believe more women than men to have signed the consent form.’
- b. wo xiangxin duoyu nansheng de nusheng qian-le tongyishu
 1sg believe more man DE woman sign-ASP consent
 ‘I believe more women than men to have signed the consent form.’
- (120) a. bi laoshi duo de xuesheng bei yiwei qian le tongyishu
 COMP teacher many DE student BEI believe sign ASP consent
 ‘More students than teachers were believed to have signed the consent form.’

- b. duoyu laoshi de xuesheng bei yiwei qian-le tongyishu
 more teacher DE student BEI believe sign-ASP consent
 ‘More students than teachers were believed to have signed the
 consent form.’

- (121) ganghao gen laoshi yiyang duo de xuesheng de jiaotache bei
 exactly with teacher same many DE student DE bicycle BEI
 tou-le
 steal-ASP
 ‘Just as many students’ as teachers’ bicycles were stolen.’

- (i) NP₁ *bi* NP₂ D_{adnominal} (117-a) becomes *bi* NP₂ D_{adnominal} *de* NP₁ in (119-a)
 and (120-a).
 (ii) NP₁ D_{adnominal} *yu* NP₂ (117-b) becomes D_{adnominal} *yu* NP₂ *de* NP₁ in (119-b)
 and (120-b).
 (iii) NP₁ *gen* NP₂ *yi-yang* D_{adnominal} (117-c) becomes *gen* NP₂ *yi-yang* in
 D_{adnominal} *de* NP₁ (121).

12.2.15.2 Combinations with Conjunctions

As in English, type ((1,1),1) quantifiers can occur in combination with conjunctions, as shown below:

- (122) a. mei-ge nanren nuren {gen / huo} xiaohai dou tiao xia
 every-CL man women {and / or} child DOU jump LOC
 shui
 water
 ‘Every man, woman and child jumped overboard.’
 b. {YOU yixie / mei(you)} nanren nuren gen/huo xiaohai zai
 {YOU some / NEG} man woman and/or child at
 xingqitian gongzuo
 Sunday work
 ‘{Some/no} man, woman or child works on Sunday.’

In (122-a) and (122-b), the universal quantifier *mei-CL* and the existential quantifiers *yixie* ‘some’ and *mei(you)* ‘NEG’, respectively can be combined with both *gen* ‘with/and’ and *huo* ‘or’.

12.2.15.3 Type ((1,1),1)

Mandarin also has quantifiers of type (1,(1,1)), where there is a single conservativity domain but two predicate properties, as exemplified below:

- (123) a. lai canjia wuhui de xuesheng bi zhunbei kaoshi de duo
 come attend party DE student COMP prepare exam DE many
 ‘More students came to the party than studied for their exams.’
- b. tongyang de xuesheng chi dao zao tui
 same DE student late arrive early leave
 ‘The same students came late as left early.’

12.2.16 Floating Quantifiers

As in English, the universal quantifier in Mandarin can float, as shown below for *quanbu* ‘all’:

- (124) a. quanbu xuesheng dou lai canjia wuhui
 all student DOU come attend party
 ‘All students came to the party.’
- b. xuesheng quanbu dou lai canjia wuhui
 student all DOU come attend party
 ‘All students came to the party.’

Note that Mandarin has no direct counterpart to English ‘both’, though, so that there is no quantifier float for ‘both’, as shown below:

- (125) Zhangsan han Lisi liang-ge dou die xia shanpo
 John and Lisi two-CL DOU fall down hill
 ‘Both Zhangsan and Lisi fell down the hill.’

As in Hebrew and Japanese, numerals in Mandarin may float as well, as shown below for *liang-ge* ‘two-CL’:

- (126) a. (you) liang-ge xuesheng xiao de hen dasheng
 YOU two-CL student laugh DE very loud
 ‘Two students laughed loudly.’
- b. xuesheng liang-ge xiao de hen dasheng
 student two-CL laugh DE very loud
 ‘Two students laughed loudly.’

Like in Pima (Munro, 1984), subjects (126), direct objects (127), indirect objects/Ps (128), and possessors (129) can antecede floating quantifiers.¹¹

¹¹ While all the floating quantifier examples given here were accepted by our consultants, the reviewer notes to us, possibly referring to a different dialect of Mandarin, that (126-b) is grammatical only under a pragmatic context of contrast indicated in a following sentence (other students did not laugh loudly), (129-b) is grammatical only with a prosodic break after the object *laoshi* and (128-b) and (131-b) are ungrammatical.

- (127) a. wo kanjian liang-ge xuesheng
 1sg see two-CL student
 'I saw two students.'
- b. wo xuesheng kanjian liang-ge
 1sg student see two-CL
 'I saw two students.'
- (128) a. wo gei liang-ge xuesheng yixie hua
 1sg give two-CL student some flower
 'I gave two students some flowers.'
- b. wo gei xuesheng liang-ge yixie hua
 1sg give student two-CL some flower
 'I gave two students some flowers.'
- (129) a. wo kanjian wo-de haizi de liang-ge laoshi
 1sg see my child DE two-CL teacher
 'I saw the two teachers of my child.'
- b. wo kanjian wo-de haizi de laoshi liang-ge
 1sg see my child DE teacher two-CL
 'I saw the two teachers of my child.'

Similar to Pima, in cases where a subject and a non-subject are both possible antecedents for a floated quantifier, the non-subject takes precedence:

- (130) a. wo-de yixie pengyou juan yixie shu gei tushuguan
 1sg-DE some friend donate some book to library
 'Some of my friends donated some books to the library.'
- b. wo-de pengyou juan shu yixie gei tushuguan
 my friend donate book some to library
 'My friends donated some books to the library.'
 *'Some of my friends donated books to the library.'

Unlike in Pima, in Mandarin, if a sentence has two quantifiers and both quantifiers are floated simultaneously, each floated quantifier follows its antecedent so no crossing dependencies can occur in the determination of antecedence. This is exemplified below: in the example of double quantifier float in (131-b), *liang-ge* 'two-CL' follows its antecedent *xuesheng* 'student' and *yixie* 'some' follows its antecedent *liwu* 'gift'.

- (131) a. xiaozhang song liang-ge xuesheng yixie liwu
 principal give two-CL student some gift
 'The principal gave the two students some gifts.'

- b. xiaozhang song xuesheng liang-ge liwu yixie
 principal give student two-CL gift some
 ‘The principal gave the two students some gifts./*The principal
 gave some students two gifts.’

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Chapter 13

Pima Quantifiers

Marcus Smith

13.1 Introduction

This chapter discusses quantification in Pima, a Uto-Aztecan language spoken in central and southern Arizona.¹ It is mutually intelligible with the better studied dialect Tohono ‘O’odham (Zepeda, 1983). Few studies of quantification in this language have been undertaken, the most readily available being the description of quantifier float in Munro (1984).

Before describing the quantifier patterns, some basic familiarity with the language is necessary. Pima is a quintessential ‘non-configurational’ language. Indeed, its sister dialect Tohono ‘O’odham was one of the original languages used by Hale (1982) and Jelinek (1984) to argue for this class of languages. I point this out, not to make a claim about the proper theoretical analysis of the data to come, but to give some typological expectation of the patterns to be encountered. All six logical permutations of subject, object, and verb are possible, with interpretive differences (if any) lying largely in the information structure (Hale, 1992; Payne, 1992). The sentences in (1) are adaptations of those given by Hale (1992) for a different dialect. Flexibility of word order extends into the major constituents, so both possessor-possessum and possessum-possessor orders occur (2, 3). Also, both prepositional and postpositional structures are possible for the same adposition (8, 9). (In some cases, adpositions split the object phrase, creating a kind of ‘impositional’ structure.) There appears to be little to no effect on relative scope

¹ I’d like to thank my Pima language consultant, Virgil Lewis, for sharing his language with me. Any mistake in here is my own fault. I also thank Pam Munro, Jena Barchas-Lichtenstein, Edward Keenan, and other regular attendants of the American Indian Seminar at UCLA for helpful comments and suggestions. The orthography used here was developed by the Pima Working Group at UCLA.

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or binding possibilities based on different orderings of the major syntactic constituents. This flexibility among the lexical constituents is not reflected as strongly in the functional constituents, where the ordering of elements is more strict. The most consistent word order pattern is the presence of a second position auxiliary, which encodes subject agreement, aspect, and modality. Only constituents can appear in pre-auxiliary position. The second position pattern can be seen in each permutation in (1).²

- (1) a. Vakial 'o heg vipsilo ha-cecposid (SOV)
 cowboy aux det p,calf 3p-p,brand
 'The cowboy is branding the calves.'
- b. Vipsilo 'o ha-cecposid heg vakial. (OVS)
 c. Ha-cecposid 'o heg vakial heg vipsilo. (VSO)
 d. Vipsilo 'o heg vakial ha-cecposid. (OSV)
 e. Ha-cecposid 'o heg vipsilo heg vakial. (VOS)
 f. Vakial 'o ha-cecposid heg vipsilo. (SVO)
- (2) a. heg John kalit
 det John car
 'John's car'
- b. heg kalit-aj heg John
 det car-3poss det John
 'John's car'

Null anaphora is pervasive: independent pronouns are optional as arguments of a verb, possessors, and objects of adpositions.³ It is not uncommon for a sentence in a narrative to lack any nouns whatsoever. Person and number (to a lesser extent) are usually recoverable via agreement morphemes found on the auxiliary and verb (compare 3 against 1), possessum (4 against 2), and adposition (5).

² The following abbreviations are used in this paper: 1 – first person, 2 – second person, 3 – third person, adj – adjective, ana – anaphor, aux – auxiliary, c – complementizer, cop – copula, cont – continuous, det – determiner, dist – distributive, dub – dubitative modal, fr – deictic particle 'away from center', gfr – greater distal deictic, hab – habitual, hrsy – hearsay evidential, inc – inceptive, intr – introducer, ints – intensifier, irr – irrealis, nr – deictic particle 'towards' center, p – plural, part – partitive, pf – perfective, pos – possessor, prt – particle, pst – past, s – singular, q – polar question marker, stat – stative, unposs – unpossessed object. When an abbreviation is set off by a comma, it is morphologically represented by reduplication. The glossing of perfective on verbs is put in parenthesis to represent truncation or suppletion. Verbs that are unmarked for aspect are imperfective.

³ Independent pronouns are virtually non-existent as a possessor in natural discourse. Under elicitation, my consultant judges the structures as grammatical, but 'why would you want to [say that]?'

(3) ha-cecposid 'a-ñ
 3p-p,brand aux-1s
 'I am branding them.'

(4) heg kalit-aj
 det car-3poss
 'his/her car'

(5) heñ-wui
 1s-to
 'to me'

13.2 Quick Overview of Quantifier Patterns

13.2.1 Overview of D-Quantifiers

The d-quantifiers in Pima are not determiners; they are adnominal expressions that may occur within the determiner phrase. The form of the DP is strongly influenced by where in the larger syntactic structure the phrase appears. There are four elements that distribute as determiners: the demonstratives 'iida 'this' and *hega'i* 'that', a specific indefinite (with some unclear semantic issues) *ge*, and a 'default' determiner *heg*. While the first three determiners appear according to the meaning, the presence or absence of *heg* appears to be mostly determined by syntactic position.⁴ *Heg* is used when the DP is not in certain syntactic configurations, including sentence initial, before a selecting adposition, before a selecting possessum, and when serving as a main or secondary predicate. In most other cases, *heg* is required to be present. There is no apparent change to the meaning regardless of whether or not *heg* is present (Hale, Jeanne, and Platero, 1977; Fitzgerald, 1994).

(6) **Keli** 'a-t 'am hii
 man aux-pf fr see(pf)
 'The man went there.'

(7) M-a-t hii **heg** **keli**
 fr-aux-pf see(pf) det man
 'The man went there.'

⁴ Fitzgerald (1994) argues the distribution is based on the prosody of the sentence rather than syntactic positioning. While there is much to recommend this analysis, there are additional complexities she did not consider that need a syntactic analysis.

(8) **Kii** 'amjed:
house from
'from the house'

(9) 'amjed **heg kii**
from det house
'from the house'

Definite, indefinite, and generic DPs are not morphosyntactically well-differentiated. Generics must be plural, but that appears to be the sole restriction placed on one of the three but not the others (10, 11). The addition of demonstratives or quantifiers can make definiteness or indefiniteness more explicit, but there are no words or patterns to explicitly mark generics. In all three types of DP, the determiner *heg* can be used if the word order allows it.

(10) Gogogs 'o totok
p,dog aux p,bark
'The dogs are barking.', 'Some dogs are barking.', 'Dogs bark.'

(11) Gogs 'o totk
dog aux bark
'The dog is barking.', 'A dog is barking.', *'Dogs bark.'

This means that in negative sentences, a simple DP can be definite and scope out, or indefinite and (possibly) scope under negation.

(12) Pi 'a-ñ ha-ñeid heg 'u''uhig
not aux-1s 3p-see det p,bird
'I don't see the birds.', 'I don't see any birds.'

D-quantifiers are usually added into the DP before the noun and after a determiner, if any (10). This changes in partitives, which will be discussed below (Section 13.6.4). However, the language prefers to float quantifiers whenever possible (13, 14). The lack of *heg* in a wide range of cases and the frequency of floating means that it is rare to see a d-quantifier clearly in the middle of a determiner phrase.

(13) Suzanne 'a-t 'am 'i ha-gi'ig **heg gook 'i'iks**
Suzanne aux-pf fr inc 3p-shake(pf) det two p,blanket
'Suzanne shook (the) two blankets.'

- (14) Suzanne 'a-t 'am **gook** 'i ha-gi'ig **heg** 'i'iks
 Suzanne aux-pf fr two inc 3p-shake(pf) det p,blanket
 'Suzanne shook (the) two blankets.'

13.2.2 Overview of A-Quantifiers

A-quantifiers function as adverbs, generally appearing before the verb, but with significant flexibility. (15) shows a typical pattern. (16) shows an adverb fronted before the auxiliary.

- (15) Gogogs 'o **gokko** tototk
 p,dog aux twice p,bark
 'The dogs barked twice.'
- (16) **Shel** 'a-ñ hem-veehejed: hihidod:
 always aux-1s 2s-for cook
 'I always cook for you.'

13.3 Existential Quantifiers

13.3.1 Existential D-Quantifiers

Momentarily setting aside the indefinite pronouns, there are four words with existential semantics: *hema* 'one, a, some (singular)', *ha'i* 'some (plural)', *mu'i* 'many', and the specific indefinite *ge*. The first three distribute like standard d-quantifiers, the last more like a determiner. For the examples below, recall that the default determiner *heg* is missing from sentence initial contexts.

- (17) **Hema** gogs 'o totk
 a dog aux bark
 'A dog is barking.'
- (18) **Ha'i** gogogs 'o tototk
 some(p) p,dog aux p,bark
 'Some dogs are barking.'
- (19) **Mu'i** gogogs 'o tototk
 many p,dog aux p,bark
 'Many dogs are barking.'

The most frequently encountered context for *ge* is to introduce unique and significant individuals into a narrative.

- (20) Gam-hu sha'i na'a m-a-sh **ge** **ce'ul** 'am o hebii keek
 gfr-far intns extent c-aux-hrsy certain willow fr irr where stand
 'Long ago, where there stood a willow tree,...'

13.3.1.1 Cardinal Quantifiers

The native monomorphemic cardinal quantifiers cover the numbers from 'one' to 'nine'. The words *siant* 'hundred' and *miil* 'thousand' are borrowed from Spanish. The word for 'ten', *vest-maam*, is derived from the phrase *vees maam* 'all fingers'. Multiples of tens, hundreds, and thousands, are expressed using the frequentative form of a number (= frequency adverb, see Section 13.3.2), and the ones place is added using *gami*, a shortened form of the distal locative adverb *gama'i* 'over there'.

- (21) gokko vest-maam gami gook
 twice ten over.there two
 'twenty-two' (lit: 'twice ten [and] two over there')

13.3.1.2 Indefinite Pronouns

Counting interrogatives as a type of indefinite, the indefinite pronouns come in three parallel sets (Table 13.1). The exact syntactico-semantic distinctions between the sets are unclear at times, but there are some generalizations to be made. The two sets that occur in declarative sentences seems to correlate best with specificity, or identifiability. I therefore refer to them as the specific and non-specific indefinite pronouns. The non-specific indefinite pronouns can also be used as alternatives to the interrogative pronouns in constituent questions (Section 13.3.1.3).

Consider the following two cases. Both are existential questions, differing only in which set the indefinite pronoun is drawn from. There may be a greater suggestion that one could identify the individual in (22) but not (23); but this is not strictly necessary. (It is not at all clear whether the difference in the English translations reflects the same difference in the Pima.)

Table 13.1 Some indefinite pronouns in Pima

	Specific	Non-specific	Interrogative
Someone, who	hema	hed:a'i	doo
Something, what	hema, ha'icu	has, hascu	sha, shacu
Somewhere, where	hasko	heba'i	baa
Sometime, when	hekid	hekid	hekid

- (22) No 'am **hema** ha'icug kii c-'ed:?
 q-aux fr someone exist house unposs-in
 'Is there someone in the house?'
- (23) No 'am **hed:a'i** ha'icug kii c-'ed:?
 q-aux fr someone exist house unposs-in
 'Is there anybody in the house?'

The two sets are also used differently depending on the polarity of the sentence. In affirmative assertions, the specific set tends to be used (24), while in negative assertions the non-specific is used (25). Again, this is a tendency, not an absolute rule. The exact reasons for the choice between indefinite types are as yet unclear.

- (24) M-o **hema** ha'icug kii c-'ed:
 fr-aux someone exist house unposs-in
 'There is someone in the house.'
- (25) Pi 'am-hu **hed:a'i** ha'icug kii c-'ed:
 not fr-far someone exist house unposs-in
 'There isn't anybody in the house.'

13.3.1.3 Interrogatives

As mentioned above, interrogatives come in two sets: the wh-words and the non-specific indefinites. The choice of which to use appears to be largely syntactic. Wh-words are obligatorily fronted to sentence initial position. In such cases, the second position auxiliary usually encliticizes to the wh-word (26, 27).

- (26) **Doo**-p-t naam?
 who-2s-pf meet
 'Who did you meet?'
- (27) **Baa**-t hii heg Rebecca?
 where-pf go(pf) det Rebecca
 'Where did Rebecca go?'

The non-specific pronouns are used when the constituent is not fronted. They may occur sentence initially, but they are not moved there by obligatory wh-movement. The most common occurrence of a non-specific pronoun as

interrogative is when wh-movement is blocked. In one common pattern, the pre-auxiliary position is filled by a complementizer *ku-*, which serves to connect the sentence to the broader discourse. In such a case, there is no empty initial position to move a wh-pronoun into, so the indefinite is used (28). Similarly, in embedded questions the initial position is filled with a complementizer, so the indefinite appears in-situ (29). Movement is blocked when part of a conjunction (30). Echo questions (31) and multiple wh-questions (32) also appear to lack wh-movement, though these patterns are less well understood.⁵

- (28) Ku-s **hascu** ha-nolav heg Melissa
 c-dub something 3p-buy(pf) det Melissa
 'I wonder what Melissa bought.'
- (29) S-maac 'a-ñ m-a-p **hed:a'i** ñeid tako
 stat-know aux-1s c-aux-2s someone see yesterday
 'I know who you saw yesterday.'
- (30) Jason c **hed:a'i** 'am heñ-ñeid?
 Jason and someone fr 1s-see
 'Jason and who see me?'
- (31) **Hed:a'i** ha-nolav heg komkjed:
 someone 3p-buy(pf) det turtle
 'Who bought a turtle?'
- (32) **Hascu** **hed:a'i** ha-'ees?
 something someone 3p-steal(pf)
 'Who stole what?'

If there is a difference in meaning between questions with wh-pronouns and non-specific indefinite pronouns, it is one of how the questioned constituent relates to the broader discourse, not the semantics of the question form itself. The following pairs of examples are reported to be synonymous.⁶

- (33) **Doo-t** o mua heg kooji?
 who-pf irr kill det pig
 'Who will kill the pig?'

⁵ The ha- clitics in examples (28), (31), and (32) are impersonal 'them', filling in for the source role of the verb 'buy' or 'steal'.

⁶ The expressions for 'why' in (35) and (36) are derived from the phrase 'saying what'. The variation seen regarding the presence or absence of final -c is as of yet not understood.

- (34) Ku-t **hed:a'i** o mua heg kooji?
 c-pf someone irr kill det pig
 'Who will kill the pig?'
- (35) **Shacu-p-t 'aagc** o mua heg kooji?
 what-2s-pf saying irr kill det pig
 'Why are you going to kill the pig?'
- (36) Ku-p-t **hascu 'aag** o mua heg kooji?
 c-2s-pf what saying irr kill det pig
 'Why are you going to kill the pig?'

13.3.2 Existential A-Quantifiers

There are three existential a-quantifiers that are not productively constructed: *hekid* 'some time', *hebicuc* 'sometimes', and *hemho* 'once'. All others are derived. 'Never' is produced by negating *hekid* 'some time'.

- (37) **Pi 'a-ñ hekid** hoohid heg John.
 not aux-1s some.time like det John
 'I never liked John.'

Frequency adverbs are derived by suffixing *-ko* to a d-quantifier, e.g., *gokko* 'twice' (< *gook* 'two') and *vaikko* 'thrice' (< *vaik* 'three'). This pattern is fully productive. Even syntactically complex numbers can take the *-ko* suffix, e.g., *gokko vest-maam gami vaikko* 'twenty-three times' (< *gokko vest-maam gami vaik* 'twenty-three, lit. twice ten over there three'). Non-numerals also feed the pattern: *mu'iko* 'many times' (< *mu'i* 'many').

13.4 Universal Quantifiers

13.4.1 Universal D-Quantifiers

There is only a single universal d-quantifier, *vees* 'all'. It can be used with either a singular or plural restriction. If used with a singular, it quantifies over the totality of the object (38); if used with a plural, it quantifies over members of the set (39). The number of the object in the following examples can be seen from the agreement morphology on the verb.

- (38) **Vees** huu 'a-t **heg pas-tiil.**
 all eat(pf) aux-pf det pie
 'He ate the whole pie.'

- (39) **Vees** ha-huu 'a-t **heg** **pas-tiil**.
 all 3p-eat(pf) aux-pf det pie
 'He ate all the pies.'

The restriction can also be a coordinated expression, in which case the range covers all members of each conjunct. So, in the following example, every man, woman, and child vacated the city; nobody remained.

- (40) **Vees kekel**, 'o'oki, **c** 'a'al 'a-t daagto heg kiihim.
 all p,man p,woman and p,child aux-pf leave det town
 'All men, women, and children left the city.'

Non-specific indefinite pronouns can receive a universal interpretation when the head of a free relative clause. The relative clauses in the following examples begin with *m-*, the complementizing proclitic to the auxiliary. The non-specific indefinite pronouns are in the first position syntactically available, given that the auxiliary has to be the second constituent and the complementizer takes the first position.

- (41) 'Am g cindat m-a-p **hed:a'i** ñeid!
 fr imper kiss c-aux-2s someone see
 'Kiss whoever you see!'

- (42) 'Am g ha-nolav m-a-p **hascu** 'i-tatcua!
 fr imper 3p-buy(pf) c-aux-2s something inc-want
 'Buy whatever you want!'

13.4.2 *Universal A-Quantifiers*

Just as there is only a single universal d-quantifier, but universal interpretations can be assigned to other constructions, so it is also with the a-quantifiers. The single universal a-quantifier is *shel* 'always'. Like the English translation, this word is frequently used hyperbolically, so that translating it as 'most of the time' or 'often' more accurately reflects the real usage.

- (43) **Shel** 'a-ñ ha'icu s-maac.
 always aux-1s something stat-know
 'I always know something.'
- (44) **Shel** 'a-ñ 'absh 'am 'i-keishpa.
 always aux-1s just fr inc-walk
 'I always just walk.'

Other universals can be built from the indefinite *hekid* ‘some time’. This can either be done through prefixing with *vees* ‘all’ or *cum* ‘any’. Both phrases seem to have the same meaning as *shel* ‘always’, though it is likely subtler shades of meaning could come to light with further research.

- (45) **Cum hekid** ’a-ñ ha’icu s-maac.
 any some.time aux-1s something stat-know
 ‘I always know something.’
- (46) **Vees hekid** ’a-ñ ha’icu s-maac.
 all some.time aux-1s something stat-know
 ‘I always know something.’

Clauses can get a universal reading if the verb is in the habitual with no temporal adverbs. The first sentence below (47) shows a sentence with an implied specific time reference, the second (48) a more universal reading. This universal interpretation is an implicature, though, not an entailment, as can be seen in (49), where a temporal adverb cancels the implicature.

- (47) **Heñ-hiksh** ’a-ñ m-a-n-t ’am heñ-kihiviu.
 1s-cut aux-1s c-aux-1s-pf fr 1s-shave(pf)
 ‘I cut/was cutting myself when I shaved.’
- (48) **Heñ-hikkash** ’a-ñ m-a-ñ ’am heñ-kihivium.
 1s-cut(hab) aux-1s c-aux-1s fr 1s-shave
 ‘I (always) cut myself when I shave.’
- (49) **Hebicuc** ’a-ñ heñ-hikkash m-a-ñ ’am heñ-kihivium.
 sometimes aux-1s 1s-cut(hab) c-aux-1s fr 1s-shave
 ‘Sometimes I cut myself when I shave.’

13.5 Proportional Quantification

13.5.1 Proportional D-Quantifiers

Pima has no monomorphemic proportional d-quantifiers. It does, however, have an idiomatic expression *’ed:a hukkam* ‘half’, literally ‘within the edge’. This expression distributes like a partitive d-quantifier (50), except that it has not been observed to float. (Grammaticality judgments on floating of *’ed:a hukkam* are not available.) Note that if one uses a non-partitive construction (see Section 13.6.4 for details), ‘half’ appears to modify the type of individual, rather than the quantity, even if that meaning does not make much sense (51).

- (50) **'Ed:a hukkam heg 'a'al 'a-t 'am ñei.**
 inside edge det p,child aux-pf fr sing(pf)
 'Half of the children sang.'
- (51) **#'Ed:a hukkam 'a'al 'a-t 'am ñei.**
 inside edge p,child aux-pf fr sing(pf)
 'The half-children sang.'

13.5.2 Proportional A-Quantifiers

There are no basic proportional a-quantifiers in the language. Proportional interpretations are generally created productively through modification of the universal and existential quantifiers. There is one idiomatic expression composed of a complementizer and particle, *ku-...hiva*, that together are interpreted as 'usually'.

- (52) **Ku-ñ hiva 'ii'e heg kavhii sisalmad.**
 c-1s prt drink det coffee p,morning
 'I usually drink coffee in the morning.'
- (53) **Ku-p hiva memd:a Cuk-shon wui.**
 c-2s prt drive Tuscon to
 'You usually drive to Tuscon.'

13.6 Complex Quantifiers

Pima productively constructs complex quantificational phrases based around the core quantifiers.

13.6.1 Approximate Values

The most straightforward cases of complex quantifier constructions involve adding an adverb to slightly modify the value. *Sha* 'about' indicates that the value expressed next is an approximate figure (54). *Cemalo* 'almost' means that the quantity falls just short of expectation (55).

- (54) **Sha vees 'a'al 'o ñe'e.**
 about all p,child aux sing
 'Just about all children sing.'

- (55) **Cemalo vest-maam** 'a'al 'o ñe'e.
 almost ten p.child aux sing
 'Almost ten children are singing.'

These same modifiers can be applied to a-quantifiers.

- (56) **Cemalo shel** 'a-ñ memlicud cikpan wui.
 almost always aux-1s drive(hab) work to
 'I almost always drive to work.'
- (57) **Sha hebicuc** 'a-ñ memlicud cikpan wui.
 about sometimes aux-1s drive(hab) work to
 'I mostly drive to work.'

Imprecise quantities can be intensified, for example with *si* 'very' (58). The more emphatic *shi* 'very (emphatic)' often carries judgmental undertones (59). The judgmental tone can be emphasized by further adding *'absh* 'just' (60).

- (58) John 'a-t **si mu'i** hemajkam ha-wui ñe'o.
 John aux-pf very many person 3p-to speak(pf)
 'John spoke to very many people.'
- (59) John 'a-t **shi mu'i** hemajkam ha-wui ñe'o.
 John aux-pf very(emph) many person 3p-to speak(pf)
 'John spoke to too many people.'
- (60) John 'a-t **'absh si mu'i** hemajkam ha-wui ñe'o.
 John aux-pf just very many person 3p-to speak(pf)
 'John spoke to too many people.'

Cum 'any' precedes non-specific indefinite pronouns, serving as a domain widener.

- (61) Va-n-t o **cum hascu** ha-nolav.
 fut-1s-pf irr any something 3p-buy
 'I'll buy anything-at-all.'
- (62) **Cum hebai** daash!
 any somewhere put
 'Put it anywhere!'

13.6.2 Comparative Quantities

Quantities can be compared using the standard comparative construction. The comparative meaning ‘more/greater than’ is formed with the adposition *ba’ic* ‘in front of’ and the proximate locative proclitic *’i* (63). ‘Less/fewer than’ is expressed with *veeco* ‘under’. Equality in the comparison is expressed with *maasma* ‘like, the same as’. In all three subtypes, the standard of comparison is introduced with *mam* ‘than’.

- (63) Eric ’o **ba’ic** ’i-cuatk mam ’aani’i.
 Eric aux in.front pr-tall than I
 ‘Eric is taller than I.’

The only feature unique to comparing quantities is that a quantifier or quantified noun is used. The compared value is usually given as *mu’i* ‘many’, though *ha’i* ‘some (plural)’ is also acceptable. The standard can be either a simple individual (64, 65, 67) or a quantified individual (66). Note that in (64) and (65) the entire complex quantifier expressions *ba’ic ’i-mu’i* ‘more’ and *maasma mu’i* ‘as many as’, respectively, have been floated from the restrictions. In (66) and (67), the entire construction, including the standard of comparison, may precede the auxiliary, indicating that it is one large constituent. That is, the particle *mam* ‘than, as’ is not a conjunction introducing a clause with ellision. If it were introducing a clause, the standard of comparison would have to be sentence final.

- (64) Homer ’a-t **ba’ic** ’i-mu’i ha-huu heg pas-tiil mam
 Homer aux-pf in.front pr-many 3p-eat(pf) det pie than
 ’aapi.
 you
 ‘Homer ate more pies than you.’
- (65) B-a-n̄ ’ab sha’i **maasma mu’i** s-ha-maac heg kekel
 nr-aux-1s nr at.all like many stat-3p-know det p,man
mam heg ’o’oki.
 than det p,woman
 ‘I know just as many men as women.’
- (66) **Ba’ic ’i-mu’i mam hetasp hemajkam** ’a-t ’am dada.
 in.front pr-many than five person aux-pf fr come(p)
 ‘More than five people came.’
- (67) **Ba’ic ’i-mu’i heg kekel mam heg** ’o’oki ’at ’ii
 in.front pr-many det p,man than det p,woman aux-pf here
 dada piasta wui.
 come(p) party to
 ‘More men than women came to the party.’

Maximum values can be given by using the negative to introduce the comparative construction, replacing the usual alternatives *ba'ic* 'i' 'in front, more than' or *maasma* 'like, as'. This usually implies 'less than'.

- (68) **Pi sha'i mu'i mam hetasp hemajkam** 'a-t 'am dada.
 not at.all many than five person aux-pf fr come(p)
 'Not as many as five people came.', 'Less than five people came.'

13.6.3 Boolean Compounds

There are few boolean compounds of quantifiers, though they do exist. Cases generally involve the negation of the quantifier with *pi* 'not'. Such boolean compounds are restricted to sentence initial position, and are among the few cases where word order and scope interact. In particular, note that negation is expressed twice in these examples, once with the quantifier and again following the auxiliary. This will be covered in depth in Section 13.7.8.

- (69) **Pi vees-ij** heg 'a'al 'o pi hoohid heg John.
 not all-part det p.child aux not like det John
 'Not all of the children like John.'
- (70) **Pi ha'i** kekel 'a-t pi 'am dada piasta wui.
 not some p,man aux-pf not fr come(p) party to
 'No men came to the party.'

Even though bare nouns can be interpreted as indefinite, they cannot be negated like a quantifier can. In such cases, the negation applies to the type of individual, not the quantity.

- (71) **Pi hemajkam** 'a-t pi 'am dada piasta wui.
 not person aux-pf not fr come(p) party to
 'A non-person didn't come to the party.' (*'No person came to the party.')

13.6.4 Partitives

Partitives are distinguished by a change in word order and, with some quantifiers, an additional morpheme. While typically quantifiers occur between determiner and noun, in partitives the quantifier appears outside the determiner. *Vees* 'all', *mu'i* 'many', and *ha'i* 'some (plural)' also take the suffix *-(i)j*.⁷ Recall that the default determiner is not expressed when it would otherwise be sentence initial; in partitives, since the determiner follows the quantifier, the determiner is present.

⁷ Saxton, Saxton, and Enos (1983) suggest this suffix converts the quantifier into a pronoun.

- (72) **Vees** 'o'oki 'o 'e-vaila.
 all p,woman aux ana-dance
 'All women dance.'
- (73) **Vees-ij heg** 'o'oki 'o 'e-vaila.
 all-part det p,woman aux ana-dance
 'All of the women are dancing.'

Partitives can float, just like other quantifiers (74, 75). These cases are unambiguous where the quantifier takes a suffix, but otherwise they are ambiguous. *Mu'i* in (74) is unambiguously non-partitive, because the partitive form of the quantifier, *mu'ij*, can also float (75). A quantifier that does not have a distinct partitive form, such as *gook* 'two', does not provide any clues about partitivity when floated.

- (74) **Mu'i** 'a-ñ ha-ñeid **heg ceceoj**.
 many aux-1s 3p-see det p,boy
 'I see many boys.'
- (75) **Mu'-ij** 'a-ñ ha-ñeid **heg ceceoj**.
 many-part aux-1s 3p-see det p,boy
 'I see many of the boys.'

13.6.5 Exception Phrases

All exception phrases I have elicited have been built off of the partitive construction, though there may be other patterns available in the language. The exception phrase is introduced with *shaba* 'but', and appears at the end of the quantified expression. The entire phrase can be placed before the auxiliary, showing that the quantified expression and the exception phrase are a single constituent. Exception phrases can be added to expressions lacking a specified restriction (76) or one with an explicit restriction (77). That is, in (76) the larger group may or may not contain people that are not students, but in (77) everyone under consideration is a man.

- (76) **Vees-ij shaba ga'i gook ha-mamshcamdam** 'a-t 'am ñei.
 all-part but only two 3p-p,student aux-pf fr sing(pf)
 'All of them except two students sang.'
- (77) **Vees-ij heg kekel shaba pi heg John** 'a-t 'am dada
 all-part det p,man but not det John aux-pf fr came(p)
 piasta wui.
 party to
 'All of the men except John came to the party.'

13.6.6 Proportional Quantities

The only solid proportional quantity expression in the language appears to be the quantifier *'ed:a hukkam* 'half' (Section 13.5.1). Nevertheless, expressions referring to sub-quantities of a larger quantity can be expressed in a few different ways. Such constructions always indicate an exact number, not a mere proportion. That is, expressions like *gook heg vaik* 'two of three' refer to two objects out of three, and cannot be used for proportionally similar amounts like 'four of six' or 'twenty of thirty'.

Such expressions follow a partitive pattern containing two quantifiers. The numerator is the initial, partitive quantifier; and the denominator is expressed within the restricting determiner phrase.

- (78) **Gook heg vaik pas-til hikkmiaka 'a-n-t ha-huu.**
 two det three pie p,slice aux-1s-pf 3p-eat(pf)
 'I ate two of three pie slices.'

Another strategy is to express the larger quantity via the adposition *amjed:* 'from, out of'. This adpositional phrase is attached to the end of the quantified expression.

- (79) **Veevkam 'a'al 'ab vest-maam 'amjed: 'a-t 'am ñei.**
 seven p,child nr ten from aux-pf fr sing(pf)
 'Seven children out of ten sang.'

13.7 Selected Topics

13.7.1 Type (2) Quantifiers

Type (2) quantifiers are possible in the language to the extent the vocabulary is present to create them. There is a specific word *go'ol* 'different' (80, 81), but no specific words for 'each' or 'same'. 'Same' is expressed using the demonstratives, thus are actually deictic references to a particular individual (82). There are no special constructions or patterns for this kind of quantification.⁸

- (80) **Vees ceceoj 'o go'ol 'uvi s-hoohid.**
 all p,boy aux different girl stat-like
 'All the boys like a different girl.'

⁸ The *s-* on *hoohid* 'like' in (80) is a positive polarity morpheme that attaches to certain lexically specified stative predicates. Earlier examples involving *hoohid*, such as (37) and (69), have been negative, so the *s-* was suppressed.

- (81) Go'ol kiik c-'ed: 'o kii 'am kiihim c-'ed:
 different p,house unposs-in aux live fr town unposs-in
 'They live in different houses in the town.'

- (82) Vees-ij heg ceceoj 'o s-hoohid hega'i 'uvi.
 all-part det p,boy aux stat-like that girl
 'All of the boys like that (the same) girl.'

13.7.2 Distributive Numerals and Binominal Each

Pima lacks an equivalent of English 'each', but it has a distinct morphological distributive plural pattern used with quantifiers and nouns. While collective plurality is indicated by reduplication, distributive plurality is indicated by a form of 'double reduplication' (with a lot of complicating phonology, see examples in Table 13.2). While some quantifiers have distinct distributive forms, the extent of this pattern is still unknown.

Distributive forms of the cardinal quantifiers get translated as groups of the base value.

- (83) **Go'ogok kekkel** 'a-t 'am dada.
 two(dist) dist,man aux-pf fr come(p)
 'The men came in pairs/twos.'

- (84) **Vavaik kekkel** 'a-n-t 'am ha-naam.
 three(dist) dist,man aux-1s-pf fr 3p-meet
 'I met the men three at a time.'

The same meanings can be achieved using distributive adverbs. These are constructed by suffixing *-pa* to one of the cardinal numbers.

- (85) Ha-mamshcamdam 'a-t **gook-pa** 'e-vaav.
 3p-p,student aux-pf two-dist ana-line
 'The students lined up in pairs/twos.'

Table 13.2 Examples of singular, collective, and distributive forms

	Singular	Collective	Distributive
Child	'ali	'a'al	'a"al
Pet	shoiga	shoshiga	shoshshiga
Chair	daikud:	dadaikud:	daddaikud:
Ear	naak	naank	naa'ank
Two		gook	go'ogok
Three		vaik	vavaik

13.7.3 Mass Quantifiers and Noun Classifiers

Vees ‘all’ and *’ed:a hukkam* ‘half’ can quantify either count or mass nouns (86, 87). Most if not all other quantifiers are strictly reserved for either count or mass. The three strictly mass quantifiers I am aware of are *he’es* ‘how much’ and the re-purposed adjectives *ge’e* ‘big, a lot, much’ and *al ha’as* ‘little, a little’. All others quantify count nouns. For example, *mu’i* ‘many’ can modify a count noun (88), but not a mass noun (89). The correct way to express ‘much’ with a mass noun is with *ge’e* ‘big, a lot, much’ (90).

- (86) *vees* *kiiki*
all p,house
‘all houses’
- (87) *vees* *shuudagi*
all water
‘all the water’
- (88) *mu’i* *kiiki*
many p,house
‘many houses’
- (89) **mu’i* *shuudagi*
many water
‘many/much water’ (intended)
- (90) *ge’e* *shuudagi*
big water
‘a lot of water’

The language does not seem to have any noun classifiers, though there are plenty of container and measure words. These expressions immediately follow the quantifier. The container/measure word can float along with the quantifier (91–94). Container words are treated like count nouns and appear in the singular or plural form as appropriate (91, 92); measure words are treated like mass nouns and are singular (93, 94).

- (91) John *’a-t* **hetasp** **haha’a** *ha-’ii* **heg** **navait.**
John aux-pf five p,bottle 3p-drink(pf) det beer
‘John drank five bottles of beer.’
- (92) **Oreos** *’a-tt* **gook** **kokstal** *ha-nolav.*
Oreos aux-1p:pf two p,bag 3p-buy(pf)
‘We bought two bags of Oreos.’

- (93) **Hetasp** **pisal** 'a-n-t ha-nolav **heg** **pilkañ.**
 five pound aux-1s-pf 3p-buy(pf) det wheat
 'I bought five pounds of wheat.'
- (94) **Gi'ig** **novi** **cev** 'a-t tatcua **heg** **vijna.**
 four arm long aux-pf want det rope
 'I need four arm-lengths of rope.'

13.7.4 Existential Constructions

There are two common existential constructions. One is a typical intransitive sentence with one of a small number of existential verbs. The most semantically vague of these is *ha'icug* 'exist', but others include *shuudagi* 'exist (liquid)', *kuubs* 'exist (smoke)', and *kaac* 'exist (lots of small particles)'. If the subject is inanimate, it is common to leave the verb implied (95), but a verb is almost always present with an animate subject (97). Often, the subject will take the determiner *ge* 'a certain', but this is not always the case.

- (95) **Ge** **hahag** 'o 'am miish veeco **(ha'icug).**
 certain leaf aux fr table under exist
 'There is a leaf under the table.'
- (96) **Ge** 'o'od 'o 'am kooba c-'ed: **kaac.**
 certain sand aux fr cup unposs-in exist
 'There is sand in the cup.'
- (97) **Gook** **kekel** 'o kii c-'ed: ***(ha'icug).**
 two p,man aux house unposs-in exist
 'There are two men in the house.'

The other pattern is to convert the noun denoting the individual into a predicate adjective (98). The noun is almost always in the plural form, though in some elicited examples the singular has been found. This construction always has a locative phrase in it, and there does not appear to be any subject.⁹ That the denominal adjective is the predicate can be shown by affixing tense/aspect morphology to it (99).

- (98) **Kui** **veeco** 'o **s-totobi-g.**
 tree under aux stat-p,rabbit-adj
 'There are rabbits under the tree.'

⁹ It is possible the locative phrase is the subject, but I am not aware of any syntactic tests that would decide the issue.

- (99) Kui veeco 'o s-totobi-g-kahim.
 tree under aux stat-p,rabbit-adj-pst:cont
 'There used to be rabbits under the tree.'

The same derivational suffix is used to derive characteristic adjectives from nouns.

- (100) S-kui-g 'o heg 'oid:ag.
 stat-tree-adj aux det field
 'The field is tree-y [full of trees].'
- (101) S-jevd:a-g 'o heg cevho kii.
 stat-dirt-adj aux det gopher house
 'Gopher's house is dirt-y [made of dirt].'

Despite the adjectival morphology, the underlying nouns still behave as nouns in some respects: they can be quantified and they can antecede a pronoun (102, 103). In these constructions, the quantifier is in the typical quantifier float position before the predicate adjective.

- (102) M-o mu'i s-totobi-g kui veeco. N-a-p ha-ñeid?
 fr-aux many stat-p,rabbit-adj tree under q-aux-2s 3pl-see
 'There are lots of rabbits under the tree. Do you see them?'
- (103) M-o vees s-totobi-g kui veeco. N-a-p ha-ñeid?
 fr-aux all stat-p,rabbit-adj tree under q-aux-2s 3pl-see
 'All of the rabbits are under the tree. Do you see them?'

Both types of existential constructions behave like typical intransitive predicates. There are no significant differences regarding negation or question formation.

13.7.5 Floating Quantifiers

All d-quantifiers can be floated to pre-verbal position, forming a loose constituent with the verb, as discussed in depth by Munro (1984). The rules for resolving which noun the quantifier was floated from get complex, and the patterns exhibited by my consultant differ from those of Munro's consultant. It should be noted that Munro's consultant and mine were from different generations and different communities, so this is likely a dialectal difference. Indeed, it

seems likely that my consultant's dialect simply has stricter resolution rules, not a completely different set of them.

In the case of a simple transitive sentence, the floated quantifier is interpreted with the object.

- (104) 'O'oki 'a-t vees 'i ha-daad:sh heg 'e-'a'al.
 p,woman aux-pf all inc 3p-p,make.sit det ana-p,child
 'The women sat all their children down.'
 *'All the women sat their children down.'

Munro (1984) reports that her consultant would allow the quantifier to associate with the subject, if the object was semantically incompatible. For example, in a case where the quantifier requires a plural noun, but the object is singular, the quantifier can associate with a plural subject. My consultant rejects such sentences.

- (105) %Hegam ceceoj 'o vees ñeid heg Alice.
 those p,boy aux all see det Alice
 'Those boys all saw Alice.' (intended)

Either object of a ditransitive verb can float a quantifier. There are differences between Munro's consultant and mine here as well, though there are also some telling similarities. The main difference is that Munro's consultant allowed both objects to float quantifiers at the same time. Both move to the standard pre-verbal position, and which object each quantifier is associated with is determined by linear precedence: the first quantifier quantifies over the first object, the second quantifier the second object. This is irrespective of which is the direct object or indirect object. Word order is free amongst arguments, so this is a pure linear order issue.

- (106) Rina 'a-t gook ha'i ha-maa heg 'e-'o'ohan hegam
 Rina aux-pf two some 3p-give(pf) det ana-p,book those
 mamakai.
 p,doctor
 'Rina gave two of her books to some of the doctors.'
- (107) Rina 'a-t gook ha'i ha-maa hegam mamakai heg 'e-'o'ohan.
 Rina aux-pf two some 3p-give(pf) those p,doctor det ana-p,book
 'Rina gave some of her books to two of the doctors.'

My consultant only permits one quantifier to be floated, but it can float from either object. There is a preference for the quantifier to modify the linearly closest object, but this is only a preference, not a requirement. Thus, though

there are different syntactic patterns between these two varieties of Pima, there appears to be a core similarity at work.

- (108) Heñ-nawpuj 'a-t **ha'i** ha-maa hegam ceceoj heg 'o''ohan.
 1s-p,friend aux-pf some 3p-give(pf) those p,boy det p,book
 'My friends gave the books to some of the boys.' (preferred) or
 'My friends gave some of the books to the boys.'

Munro reports that intransitive verbs allow quantifier float from their subject. She makes no reference to distinctions between different types of intransitive verb. With my consultant, whether or not floating is possible depends on the lexical class of the verb. There is a three way distinction: Unaccusative verbs allow float from the subject (109, 110). Verbs with incorporated objects allow float from that underlying object (111, 112).¹⁰ Unergative verbs generally do not permit floating at all, though the data here are noisy: occasionally my consultant judged (113) and (114) as acceptable.

- (109) Kekel 'a-t **gook** 'ii dada.
 p,man aux-pf two here come(p)
 'Two men arrived.'
- (110) Gogogs 'a-t **gook** ko'ok.
 p,dog aux-pf two die(p,pf)
 'Two dogs died.'
- (111) Kekel 'o **gook** kii-t.
 p,man aux two house-make
 'The men are building two houses.'
- (112) 'O'oki 'o **gook** paan-t.
 p,woman aux two bread-make
 'The women are making two loaves of bread.'
- (113) *Gogogs 'o **gook** tototk.
 p,dog aux two p,bark
 'Two dogs are barking.' (intended)
- (114) *'A'al 'o **gook** shoañ.
 p,child aux two cry
 'Two children are crying.' (intended)

¹⁰ Munro (1984) does not discuss this sort of verb, so it is unknown how her consultant would have interpreted them.

There is one further difference in floated quantifiers between the two consultants: Munro reports that quantifiers can be floated from possessors of objects. My consultant can only interpret such sentences with the quantifier modifying the object, not the object's possessor. In the following example, the object is singular and therefore not an acceptable restriction for *vees* 'all'. Munro's consultant accepted it, but mine does not.

- (115) %**Vees** ñei 'a-n-t heg heñ-nawpuj ha-maakai-ga.
 all see(pf) aux-1s-pf det 1s-p,friend 3p-doctor-poss
 'I saw the doctor of all my friends.' (intended)

The patterns observed from Munro's consultant and my own differ in many crucial respects, but not in random ways. It appears that my consultant's variety has a reduced syntactic distribution of floated quantifiers by disallowing them in all contexts where the restriction is not a syntactic object in some sense. This extends into the intransitive domain, where arguments that are standardly accepted to be object-like (the subject of unaccusatives and incorporated nouns) permit floating, but arguments that are more subject-like (the subject of unergatives) do not.

13.7.6 *Bare Quantifiers as Arguments*

It is possible that all quantifiers can be used as bare arguments, though the data are not convincing. The issue is that virtually any argument can be zero pronominalized; thus it could be difficult if not impossible to determine if the quantifier is the sole element of the argument, or if it is modifying a silent pronoun. It is worth pointing out, though, that adjectives and postpositional phrases cannot be stranded by zero pronominalization. Thus, if quantifiers can be, the rules for zero pronominalization apply different to them than any other adnominal modification. The two examples below are about as clear evidence as you can find. Still, (116) could alternatively be analyzed as 'They are two women' (with quantifier float), and (117) could be 'She kissed them all' (with pro-drop):

- (116) **Gook** 'o-d: 'o'oki.
 two aux-cop p,woman
 'Two are women.'
- (117) **M-a-t** **vees** ha-cindat.
 fr-aux-pf all 3p-kiss
 'She kissed everyone.'

13.7.7 *Bare Quantifiers as Predicates*

In certain cases, a quantifier can serve as the main predicate. Cardinal numbers cannot serve as a predicate on their own. However, they are acceptable with the copula. This suggests they are functioning like a predicate nominal in these cases. Verbal, adjectival, and adpositional predicates do not co-occur with the copula.

- (118) **Iidam* *'o* **gook.**
 these aux two
 'They are two (in number).' (intended)

- (119) *Iidam* *'o-d:* **gook.** (Mark 16:12; Papago and Pima
 Translators, et al. 1975)
 these aux-cop two
 'They are two (in number).'

The partitive forms *veesij* 'all of', *ha'ij* 'some of', and *mu'ij* 'many of' can be predicates, but the non-partitive forms cannot. Evidence that they are predicates comes from the presence of tense/aspect morphology. (It is worth pointing out that quantifiers as main predicates have only been observed under direct elicitation. They have not been spontaneously produced.)

- (120) *Kui* *veeco* *'o* **mu'i-j-kahim** *heg* *totobi.*
 tree under aux many-part-pst:cont det p,rabbit
 'There were many rabbits under the tree.'

- (121) *Totobi* *'o* *'am* **vees-ij-kahim** *kui* *veeco.*
 p,rabbit aux fr all-part-pst:cont tree under
 'All the rabbits were under the tree.'

Mu'ij 'many of' can serve as a predicate by itself (122). *Veesij* 'all of' is ungrammatical without a locative phrase (123 vs. 121). The acceptability of *ha'ij* 'some of' in such a context is unknown.

- (122) *Totobi* *'o* **mu'-ij.**
 p,rabbit aux many-part
 'The rabbits are many.'

- (123) **Kekel* *'o* *vees-ij.*
 p,man aux all-part
 'The men are all.' (intended)

13.7.8 *Scope Ambiguities*

When more than one quantificational expression appears in a single clause, they can usually scope in either order. There is no correlation between scope and word order, part of speech, or floating status. There may be some preferences for one reading over another in certain environments, but these have not been successfully teased apart at this point.

- (124) **Hema** 'ali 'a-t **vees** ha-ñeid heg 'o''ohan.
 a child aux-pf all 3p-see det p,book
 'A child read all the books.' (some > all, all > some)

- (125) **Hema** 'o'idam 'a-t **gook** ha-kokkeda heg huahi.
 a hunter aux-pf two 3p-kill(p) det p,deer
 'A hunter killed two deer.' (some > two, two > some)

While this is the general case, there are times when scope is judged to be unambiguous. It is not clear when or why this is true. In the following case (126), each hunter killed a separate deer. The reading where a single deer is killed by all the hunters collectively is reported to be impossible.

- (126) **Vees-ij** heg 'o''idam 'a-t **hema** mua heg huai.
 all-part det p,hunter aux-pf a kill det deer
 'All of the hunters killed a deer.'

Quantified subjects scope over or below sentential negation based on relative word order. When the quantifier is to the left of negation, it scopes over the negation (127). When the quantifier is to the right, negation scopes over it. This is regardless of whether the quantifier is floated (129) or not (128).

- (127) **Hema** keli 'a-t **pi** 'am jivia piasta wui.
 a man aux-pf not fr arrive party to
 'A man didn't come to the party.' (some > not)

- (128) **Pi** 'a-t 'am jivia heg **hema** keli piasta wui.
 not aux-pf fr arrive det a man party to
 'No man came to the party.' (not > some)

- (129) **Pi** 'a-t 'am **hema** jivia heg keli piasta wui.
 not aux-pf fr a arrive det man party to
 'No man came to the party.' (not > some)

If the quantified noun phrase needs to scope under negation, but needs to be to the left of it for discourse reasons, both the quantifier and the sentence are negated (130). The quantifier cannot be modified by negation if it is already under the scope of sentential negation (131).

(130) **Pi hema** keli 'a-t **pi** 'am jivia piasta wui.
 not a man aux-pf not fr arrive party to
 'No man came to the party.'

(131) ***Pi** 'at 'am jivia heg **pi hema** keli piasta wui.
 not aux-pf fr arrive det not a man party to
 'No man came to the party.' (intended)

Quantified objects are reported to be scope ambiguous when they occur before negation.

(132) **Hema** keli 'a-ñ **pi** ñeid.
 a man aux-1s not see
 'I didn't see a man.' (some > not, not > some)

There is still much work to be done before scope in Pima is understood, but the above gives some idea of the patterns observed thus far.

13.7.9 *Only*

The syntax and semantics of 'only' are not well understood at this point. There are two apparent morphemes that translate as 'only'. *'Absh* 'just, only' distributes as an adverb and restricts predicates. This includes verbal and nominal predication.

(133) 'Iiya 'a-c 'absh dad:he.
 here aux-1p just p,sit
 'We just sat here. (We did not do anything else.)'

(134) D-a-ñ 'absh 'o'odham.
 cop-aux-1s just human
 'I'm only human.'

Individuals are restricted via a series of words that all seem to include a suffix *-a'i*: *va'i*, *ma'i*, and *ga'i*. There may be others. These words are typically

found very close in front the verb. They can modify either the subject (135) or object (136, 137); and the noun modified can precede (137) or follow (136) the particle.

(135) Hega'i 'uvi 'o va'i cikpan.
 that young.woman aux only work
 'Only that young woman is working (nobody else).'

(136) M-a-ñ ga'i ñeid heg John.
 fr-aux-1s only see det John
 'I saw only John.'

(137) Pam 'a-ñ ma'i s-maac.
 Pam aux-1s only stat-know
 'I only know Pam.'

Ga'i 'only' is occasionally found at the beginning of a determiner phrase, before demonstratives (138) or quantifiers (139). The other two forms do not appear inside determiner phrases.

(138) ga'i hegam cecej
 only those p,boy
 'only those boys'

(139) ga'i hemako cej
 only one boy
 'only one boy'

The most obvious analysis of these forms would be so segment off the *-a'i* as meaning 'only', attaching to common adverbial particles: *va* a certain future, *'am* the 'behind' deictic, and *ge* the specific indefinite, respectively. This may be true; however, the words meaning 'only' appear at times in sentences where the particles would not normally be found, suggesting they may have an independent existence. For example, *ge* does not appear before demonstratives, but *ga'i* appears before one in (138); and the aspectual particle *va* only appears in futures and in certain modal contexts, but appears in an imperfective sentence in (135). The details of distribution have not been worked out yet.

There is no clear difference in meaning between any of these three forms. All three can modify a subject or an object (135 vs. 136). However, they are not interchangeable in all contexts. For example, *ga'i* and *ma'i* are judged interchangeable in (140) and (141), but *va'i* in the same context is unacceptable (142). The conditions governing the distribution are as yet unknown.

- (140) Pam 'a-ñ ga'i s-maac.
 Pam aux-1s only stat-know
 'I only know Pam.'
- (141) Pam 'a-ñ ma'i s-maac.
 Pam aux-1s only stat-know
 'I only know Pam.'
- (142) *Pam 'a-ñ va'i s-maac.
 Pam aux-1s only stat-know
 'I only know Pam.' (intended)

13.8 Conclusion

The description of quantifiers in Pima presented in this paper is far from a complete accounting of the patterns in the language, but it shows that the topic is a rich one, with much still to explore. Nevertheless, it seems clear that quantification is complex and productive.

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Chapter 14

Quantification in Standard Russian

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14.1 Introduction: Elements of Russian Grammar

14.1.1 Grammatical Relations

Russian is among the most conservative modern Indo-European languages when it comes to grammatical structure. I refer the reader to the reference grammar (Timberlake, 2004) for a detailed discussion; below I will mention just several features of immediate relevance for quantifier structures. Russian grammar traditionally lists six cases with the following major functions:

- **nominative** is the case of subjects and predicate nouns;
- **genitive** marks possessors in noun phrases;
- **dative** is the case of indirect objects;
- **accusative** marks direct objects and time intervals;
- instruments and passive subjects, and sometimes nominal predicates, are marked with **instrumental**;
- nouns in **prepositional** case are always governed by certain prepositions; historically this is locative case that lost independent uses.

(The name *prepositional case* might be misleading; any nominal case except nominative and not just prepositional can be assigned by a preposition.)

While syntactic roles of NPs are coded by case, they do not constrain word order, which is relatively free and is reserved for expressing information structure, if anything. In what follows, I will gloss case only where the syntactic roles of NPs may be otherwise unclear. Examples of NPs in isolation are given in nominative case, unless marked otherwise.

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14.1.2 Paucal Forms

In general, numerals, like adjectives, agree with head nouns^{1, 2}:

- (1) *tremja šarami; třem šaram; třex šarov*
 three.INSTR balls.INSTR three.DAT balls.INSTR three.GEN balls.GEN
 ‘with three balls; to three balls; of three balls’

However, when the NP with a numeral is in nominative or accusative, the head noun does not show nominative or accusative case marking. Instead, the noun assumes one of two forms depending on the numeral; these are called ‘smaller’ and ‘greater’ paucal forms. The former combines with numerals that end in 2, 3, or 4; the latter with numerals ending in bigger simple numerals. The smaller paucal form usually equals genitive singular, the greater paucal form genitive plural, but a handful of words show a contrast, cf. the suppletive genitive plural form *ljudej* and greater paucal *čelovek* ‘people’; genitive singular *rjada* and smaller paucal *rjadá* ‘rows’. Even in cases of contrast like these, there is considerable variation with regard to the usage of a dedicated paucal form vs. conventional genitive (Timberlake, 2004); intervention of different kinds of modifiers between the numeral and the noun affect the choice of genitive vs. paucal in different ways (Mel’čuk, 1985, 431ff). Paucal forms will be marked in glosses only when morphology is in focus of the discussion. They are glossed as genitive when the forms are identical.

The greater and the smaller paucal forms are not simply variants occurring with different numerals. A further syntactic difference between them needs to be mentioned. The smaller paucal form is found only in direct cases, i.e. in nominative and accusative NPs. The greater paucal form also occurs in genitive NPs, in addition to the direct cases. The question is, of course, if the greater paucal form is generally identical to genitive plural, how can we distinguish which form combines with a genitive numeral? Nouns that differentiate the two forms use the large paucal form in this context: *ot pjati čelovek* (paucal), not [?]*ot pjati ljudej* (genitive) ‘from five people’; *ot pjati kilogramm* ‘from five kilograms’ (paucal). The fact that the greater paucal form extends to genitive is known (cf. (Mel’čuk,

¹ I am using the standard scholarly transliteration system for Cyrillic, as accepted e.g. by the *Slavic and East European Journal*.

² In this paper I tried to keep glosses for grammatical morphemes minimal, using them only when the relevant category is under discussion or contributes a non-trivial meaning component. Glosses used here include: NOM – nominative case, GEN – genitive case, DAT – dative case, ACC – accusative case, INSTR – instrumental case, PART – partitive case, LARGEPAUCAL – large paucal form, SMALLPAUCAL – small paucal form; SG – singular, PL – plural; M – masculine, F – feminine, N – neuter; ADJ – adjectivizing suffix; COLL – collective numeral, CARD – cardinal numeral; EXIST – indefinite pronoun series, LIBO – marker of NPI pronoun series, KOE – marker of specific indefinite pronoun series, NI – marker of negative concord pronoun series, also functions as a negative concord conjunction; PO – preposition *po*, functions as a marker of distributive numerals; INF – infinitive, FUT – future tense, SUBJ – subjunctive mood; PONA, NA – prefixes with quantificational meanings, REFL – reflexive verbal suffix.

1985, 431)) but often ignored (e.g. elsewhere in the same monograph Mel'čuk mentions the greater paucal form in relation to just nominative and accusative (Mel'čuk, 1985, 254–255)).

14.1.3 Partitive Case

Russian is sometimes analyzed as having a special case called Partitive, or Second Genitive. Normally, it has exactly the same form as ordinary Genitive, except for some masculine mass nouns (not including abstract nouns) which have a special form for it. The special Partitive form has the ending *-u* (vs. Genitive *-a*) and is homophonous with Dative. For many speakers, the ordinary Genitive form can be substituted for the special Partitive form in any context. Uses of Partitive include:

- as direct object or intransitive subject, meaning ‘unspecified quantity of X;’
- combinations with quantifiers;
- use as Genitive of Negation, including the subject of negative existential statements.

While it has been argued that Genitive of Negation needs to receive a separate analysis from partitive uses (Neidle, 1982, 134ff), a specialized partitive form can occur in both contexts, cf. (2c) and (2a). See Partee and Borschev (2007), Borschev et al. (2008) for references and discussion of Genitive of Negation in Russian. Examples:

- (2) a. Ja nalila sebe čaj = u.
 I poured self.DAT tea = PART
 ‘I poured myself some tea.’ (NCRL³)
- b. Ko mne obraščaetsja celaja kuča narod = u.
 to me address whole heap people = PART
 ‘A whole lot of people address me.’ (NCRL)
- c. No tot ne dal im xod = u.
 but that not gave them movement = PART
 ‘But he didn’t set them [the documents about corruption] in motion.’
 (NCRL)

14.1.4 Direct Case Condition

Certain classes of quantifiers have a restricted distribution in Russian and are found only as subjects or direct objects, and as predicates. These quantifiers include numerals modified by prepositions (*okolo* ‘about’, *za* ‘over’) or comparatives (*bolee* ‘more’), distributive NPs with the preposition *po*, *mnogo* ‘much’

³ National Corpus of Russian Language, <http://www.ruscorpora.ru/>

(at least with mass terms), *malo* ‘few/little’, and (*ne*)*dostatočno* ‘(in)sufficiently many’. Babby (1985) relates this restriction to three other case-related facts: (1) that only direct cases assign a paucal form to the noun, and (2) that partitive and (3) genitive of negation are also limited to NPs that would otherwise be in a direct case. It must be noted though that these phenomena do not have exactly the same distribution. In fact, the four all have different distributions, suggesting that ‘Direct Case’ restrictions may not constitute a unified phenomenon.

Numerals in nominative and accusative NPs have nouns in paucal forms in any syntactic position, while the other phenomena are restricted to subject and direct object positions, excluding accusative NPs as objects of prepositions: *čerez dva časá* ‘in two hours’ (paucal form), but *čerez okolo dvux časov* ‘in about two hours’. Further, as discussed above, (large) paucal forms are also found in genitive NPs, thus not even restricted to direct cases.

QNPs with nouns in paucal forms and numerals modified with prepositions can be predicates or transitive subjects; partitive and genitive of negation do not occur in these positions.

Partitive can occur outside the ‘direct case’ environments as objects of certain genitive-assigning prepositions (e.g. *radi, dlja* ‘for’) and with measure phrases (*čашka čaju* ‘a cup of tea’); genitive of negation alternation preposition-modified numerals and *malo* are disallowed in these contexts.

14.1.5 Types of Numerals

Traditional Russian grammar distinguishes three orders of numerals: cardinal, ordinal, and collective. Cardinal numerals are the basic kind, used in combination with nouns (except *pluralia tantum*) as in *dva stula* ‘two chairs’. Ordinal numerals like *vtoroj* ‘second’, *pjatnadcatyj* ‘fifteenth’ pattern with adjectives morphologically as well as syntactically. When deriving an ordinal from a complex numeral, only the last word of the numeral assumes adjectival morphology, and preceding numeral components have invariable nominative form. For an illustration, consider the dative singular feminine form of ordinal numerals:

- (3) sot = oj; sto pjatidesjat = oj; sto pjat’desjat četver = t = oj
 100 = DATSGF 100.NOM 50 = DATSGF 100.NOM 50.NOM 4 = ADJ = DATSGF
 To the one hundredth; to the 150th; to the 154th

Ordinal numerals are the basis for proportional quantifiers of the patterns ‘cardinal numeral + ordinal numeral_{Feminine}’ (*odna pjataja* ‘one fifth’, *tri dvadcat’ vtoryx* ‘three twenty thirds’), as well as ‘každyj + ordinal numeral’ (*každyj pjatyj* ‘every fifth’).

Collective numerals like *dvoe* ‘two’, *pjatero* ‘five’ have several uses. They compete with ordinary numerals when combining with nouns denoting people or young animals: *dva studenta* / *dvoe studentov* ‘two students’, *pjat’* / *pjatero*

teljat ‘five calves’. Collective numerals are also used with *pluralia tantum* like *vorota* ‘gate’, which lack the smaller paucal form, cf. **dva* / ^{OK}*dvoe vorot* ‘two gates’, and with (plural) personal pronouns **pjat’* / ^{OK}*pjatero nas* ‘five us’ (see (Mel’čuk, 1985, 376ff) for lexical restrictions and further discussion).

Finally, collective numerals are freely used on their own without a noun, while cardinal numerals require a noun, unless used as predicates or in elliptical contexts. The following example illustrates the contrast:

- (4) V komnatu zašli dvoe / *dva.
 in room entered two.COLL two.CARD
 ‘Two people entered the room.’

Here the variant with cardinal *dva* is not acceptable unless a clearly elliptical context is provided, e.g. ‘hundreds of policemen surrounded the crime scene but **just two entered the room.**’ Numerals 2–20, 30, 50, 60, 70, and 80 have collective forms, but for 8 and up these forms are almost never used, except in derived adverbs like *vpjatidesjaterom* ‘as a group of 50’.

14.1.6 Selection of D-Quantifiers

The selection properties of D-quantifiers in Russian are very elaborate. The morphosyntax of numerals is probably the most complicated part of Russian grammar along with aspect / Aktionsart; for a careful discussion see Timberlake (2004), Mel’čuk (1985), Corbett (1978). Simplifying slightly, the following types of D-quantifiers can be distinguished based on their selection properties:

A. Ones that select for (singular) mass nouns.

- i. Agreeing with the noun in case and gender, e.g. *ves’* ‘all the’: *vsë* [NOMSGN] *moloko* [NOMSGN] ‘all (the) milk’.
- ii. Selecting for the genitive (partitive) case.
 - a. quantifiers used only in (homophonous) nominative and accusative: *skol’ko* ‘how much,’⁴ *malo* ‘little,’ (*ne*)*dostatočno* ‘(in)sufficiently much,’ e.g. *skol’ko* [NOM] *čaju* [PART] ‘how much tea’, but **skol’ki* [DAT] *čaju* [PART] ‘to how much tea’
 - b. measure phrases and proportional quantifiers which are used in any case (essentially these are nouns syntactically): *dva litra* ‘two liters’, *gorst’* ‘a handful’, *polovina* ‘half,’ *dve treti* ‘two thirds of’, cf. *polovina* [NOM] *čaju* [PART] ‘half of the tea’, *polovine* [DAT] *čaju* [PART] ‘to half of the tea’. Partitive case proper (*čaju*), unlike genitive (*čaja*), sounds less natural with proportional quantifiers like *polovina* than with other mass noun quantifiers, yet it is well attested in usage.

⁴ *Skol’ko* is used in cases other than nominative and accusative only when combined with count nouns.

B. Quantifiers that select for count nouns.

- i. Agreeing with the noun in case and gender. a. Selecting for singular: *každyj* ‘every,’ *vsjakij* ‘all,’ *kotoryj* ‘which,’ *odin* ‘one,’ *tridcat’ odin* ‘thirty one,’ *n + 1* (read as *èn plus odin*), and all other numerals ending in *odin*, cf. *odno* [NOMSGN] *jabloko* [NOMSGN] ‘one apple’, *odnomu* [DATSGN] *jabloku* [DATSGN] ‘to one apple’. b. Selecting for plural: *vse* ‘all,’ (*ne*) *mnogie* ‘(not) many,’ e.g. *vse* [NOMPL] *jabloki* [NOMPL] ‘all (the) apples’, *vsem* [DATPL] *jablokam* [DATPL] ‘to all (the) apples’.
- ii. Selecting for the genitive plural form. (a) quantifiers used only as a subject and direct object: *malo* ‘few,’ (*ne*) *dostatočno* ‘(in)sufficiently many,’ *bol’she vsego* ‘the most.’ (b). quantifiers used in any case (essentially they behave like nouns): *polovina* ‘half,’ *bol’sinstvo* ‘most.’
- iii. Core numerals 5–20, tens, and hundreds, number variables like *n* (read *èn*) and *k* (read *ka*), and any complex numerals ending in these, as well as *skol’ko* ‘how many’ and *stol’ko* ‘this many’ when in nominative, accusative, or genitive, select for the so called larger paucal form, usually identical to genitive plural but for some nouns identical to nominative singular: (*odin*) *kilometr* ‘(one) kilometer’ (nominative singular) vs. (*číslo* / *pjat’*) *kilometrov* ‘(the number of / five) kilometers’ (genitive plural / large count) but (*odin* / *pjat’*) *kilogramm* ‘(one / five) kilogram(s)’ (nominative singular / large count) vs. (*číslo*) *kilogramm*ov ‘(the number of) kilograms’ (genitive plural). The formal difference is most obvious in the case of the noun *čelovek* ‘person’ which has a suppletive plural: (*odin* / *pjat’*) *čelovek* ‘one person / five people’ (nominative singular / large count) vs. (*číslo*) *ljudej* ‘(the number of) people’ (genitive plural). In other oblique cases such numerals do not select for the noun’s case but agree with the noun in case: (*o*) *pjati šarax* ‘(about) five balls’ (prepositional), *pjat’ju šarami* five balls’ (instrumental) etc.
- iv. Nouns denoting numbers select for large paucal forms no matter what the case of the DP is: ‘thousand people’ is *tysjača čelovek* in nominative, *tysjači čelovek* in genitive, *tysjače čelovek* in dative etc. This group includes *noľ / nuľ* ‘zero,’ *tysjača* ‘thousand,’ *million* ‘million,’ *milliard* ‘billion,’ *trillion* ‘trillion,’ etc. Hundreds (200 and up) also tend to behave like this, although in the literary norm they are attributed to the previous group.
- v. Some numerals, when in nominative case, select for a special form of the noun, called the (small) paucal form,⁵ which generally equals genitive singular, but sometimes has a different place of stress: *razmer šára* ‘size of the ball’ but *tri šará* ‘three balls.’ In oblique cases such numerals do not select for the noun’s case but agree with the noun in case: *trëx šarov* ‘three

⁵ This morphological form, traced back to the Old Russian nominative-accusative dual, is gradually fading out as a separate form. Many speakers accept ordinary genitive singular form wherever the paucal form is used, as in *tri šára* ‘three balls,’ *polšára* ‘half of a ball,’ *poltora šára* ‘one and half of a ball.’

balls' (genitive), *tremja šarami* 'three balls' (instrumental) etc. In genitive, however, the large paucal form is often used instead of genitive plural even with small numerals: (*ot*) *trěx čelovek* '(from) three people' (large paucal form) along with (*ot*) *trěx ljudej* '(from) three people' (genitive plural).

Three subgroups of this class can be further distinguished:

- a. the clitic *pol* 'half' selects for a singular noun when in oblique cases: *polušaru* 'to half of a ball.' In accusative, DPs with *pol* are always the same as in nominative: *polšara* 'half of a ball' or *polženščiny* 'half of a woman' can be either nominative or accusative.
- b. the numeral *poltora* 'one and a half' selects for a plural noun when in oblique cases: *poltora šaram* 'to one and half of a ball.' The accusative form of DPs with *poltora* is always the same as nominative: *poltora šara* 'one ball and a half' or *poltory ženščiny* 'one and a half women' can be either nominative or accusative.
- c. Numerals *dva* 'two,' *oba* 'both,' *tri* 'three,' *četyre* 'four,' and any complex numerals ending in these, select for a plural noun when in oblique cases: *dvum šaram* 'to two balls,' *uravnenie s n + 2 (èn pljus dvumja) kornjami* 'equation with n + 2 roots.' The accusative form of DPs with these numerals depends on the animacy of the noun. If the noun is inanimate, accusative is the same as in nominative, otherwise it is the same as genitive: *dva šara* 'two balls' is either nominative or accusative, *dvux ženščin* 'two women' is either genitive or accusative.

Numerals *poltora* 'one and a half', *dva* 'two,' and *oba* 'both' are also unique in Russian because they are the only grammatically plural words that formally distinguish gender. All of them have separate feminine and masculine/neuter forms in nominative (and accusative whenever it is equal to nominative): *poltora* / *dva* / *oba šara* / *okna* 'one and half of / two / both balls (M) / windows (N),' but *poltory* / *dve* / *obe ženščiny* 'one and half of / two / both women (F)'.⁶ *Oba* 'both' is doubly unique in having distinct feminine and masculine/neuter stems in oblique cases: *oboim šaram* / *oknam* 'to both balls (M) / windows (N),' but *obeim ženščinam* 'to both women (F)'.

14.1.7 Series of Pronouns

Many pronominal elements in Russian are organized into morphologically regular series,⁷ mostly based on interrogatives. These include several series of

⁶ Notice the gender agreement here in the absence of case agreement: the numerals express the nominative of the whole DP and assign paucal form to the noun, but agree with the noun in gender.

⁷ The series of quantificational pronouns and pronominal adverbs in Russian and other European languages should not be conflated with series of personal pronouns in many African languages, a phenomenon more akin to case than to quantificational force.

Table 14.1 Series of pronouns

vse 'everyone'	vsegda 'always'	vsjakij 'all kind of'
kto 'who'	kogda 'when'	kakoj 'what kind of'
kto-to 'someone'	kogda-to 'sometime'	kakoj-to 'some'
malo kto 'few people'	malo kogda 'rarely'	malo kakoj 'a rare'
kto ugodno 'anyone'	kogda ugodno 'at any time'	kakoj ugodno 'any'
nikto 'noone'	nikogda 'never'	nikakoj 'no'
nekto 'a certain person'	nekogda 'once upon a time'	nekij 'a certain'

indefinites but also quantifiers with various semantic contributions (see Haspelmath (1997) for a discussion of Russian indefinites and a typological perspective; Yanovich (2005) for a closer look at some of the series). Table 14.1 illustrates seven series, each instantiated by three kinds of pronouns (there are of course many more series and pronominal stems).

When prepositions combine with quantified NPs with series markers preceding the pronominal stem, the series marker comes before the preposition. In these examples, series markers are *ni* for the negative concord series and *koe* for an indefinite series:

- (5) a. Ni o čëm ne sprašivaj!
 NI about what not ask
 'Don't ask about anything!' (NCRL)
- b. ja k nemu tut koe po kakim delam zabegal
 I to him here KOE for which business ran by
 'I stopped by his place with some business' (NCRL)

14.1.8 Agreement

Predicates agree with subjects in number and either person (non-past verb forms) or gender (past tense verbs and nominal predicates). Adjectives within noun phrases agree with nouns in case, number, and gender. Russian possesses the three Indo-European genders: masculine, feminine, and neuter. Nouns are also cross-categorized by animacy; whenever gender agreement takes place, so does animacy agreement. Technically, one should speak of two agreement classes within each gender, distinguished by animacy. The sole expression of animacy is the form of accusative case. In the plural, animate nouns' accusative case form is the same as the genitive, and inanimate nouns' accusative form equals the nominative (the same distinction holds in the singular, but only in some types of paradigms). *Pluralia tantum* can be treated as a separate gender (Zaliznyak, 1967).

Quantified NPs have special agreement properties if the quantifier assigns case to the NP (be that genitive, partitive, or a paucal form). With nouns in paucal forms, adjectives and determiners are in nominative plural (usually when they precede the quantifier + NP combination; this is an option only with

numerals) or in genitive plural (usually when they intervene between the numeral and the common noun):

- (6) a. vse èti smelye pjat' čelovek
all.NOMPL these.NOMPL brave.NOMPL five person.LARGEPAUCAL
'all these brave five people'
- b. tri ètix smelyx človeka
three these.GENPL brave.GENPL man.SMALLPAUCAL
'these three brave people'

(as mentioned, for a vast majority of nouns the larger paucal form = genitive plural, the smaller paucal form = genitive singular).

Verbal agreement can default to 3rd person neuter singular if the subject is a QNP which bears no nominative morphology other than that of the quantifier word (Švedova, 1970, 554). If the QNP contains a determiner or an adjective in nominative plural, this forces standard plural agreement, cf.:

- (7) a. Prišli / prišlo pjat' studentov
came.PL / came.SGN five student.GENPL
'Five students came.'
- b. Prišli / prišlo dva studenta
came.PL / came.SGN two student.GENSG
'Two students came.'
- c. Javilis' / javilos' bol'šinstvo studentov
show up.PL / show up.SGN most student.GENPL
'Most students showed up.'
- d. ^{OK}Javilis' / *javilos' vse pjat' studentov
show up.PL / show up.SGN all.NOMPL five student.GENPL
'All five students showed up.' (overt nominative blocks default agreement)
- e. ^{OK}Javilis' / *javilos' novye pjat' studentov
show up.PL / show up.SGN new.NOMPL five student.GENPL
'Five other students showed up.' (overt nominative blocks default agreement)

14.1.9 Definiteness of NPs

Russian does not have grammaticized articles, neither definite nor indefinite. Bare noun phrases can be interpreted as either definite or indefinite. But semantic (in)definiteness can be expressed. For instance, definiteness is signaled by demonstratives:

- (8) Èta ženščina, tot kot, te studenty
this woman that cat those students
'this woman', 'that cat', 'those students'.

Russian demonstrative determiners include *ètot* ‘this’, *sej* ‘this’ (obsolete or bookish) and *tot* ‘that.’ In some contexts, the demonstratives have no deictic meaning at all but only express definiteness. In such cases, *tot* and *ètot* express different kinds of definiteness. *Ètot* (and *sej*) is typical in NPs referring to an object from the preceding discourse. In contrast, *tot* accompanies NPs with restrictive relative clauses. The numeral *odin* ‘one’ is used to express indefiniteness, usually to introduce a new protagonist into the discourse.

- (9) a. My vstretili **odnogo** čeloveka. **Ètot** čelovek okazalsja dekanom.
 We met **one** man **this** man turned out to be dean
 ‘We met **a** man. **The** man turned out to be the dean.’
 b. Vot **tot** čelovek, o ktorom ja govoril.
 Here **that** man about which I talked
 ‘Here’s **the** man I talked about.’

Definite NPs include proper names. Russian first name stems can typically be treated as monomorphemic, although their compound etymology is sometimes transparent as in Slavic names *Vladimir*, *Vladislav*, *Vjačeslav*. Last names are mostly derived from nouns with suffixes *-ov-*, *-in-*, *-sk-*, *-ovič-*, or from adjectives with suffixes *-ov-* or *-yx* (e.g. *čěrnyj* ‘black’ > *Černov*, *Černyx*).

14.1.10 Generic Noun Phrases

Generic NPs in Russian, both singular and plural, do not have an overt determiner:

- (10) a. Sobaki kusajutsja.
 dogs bite
 ‘Dogs bite.’
 b. Krolík razmnožaetsja bystro.
 rabbit reproduces rapidly.
 ‘The rabbit reproduces rapidly.’
 c. Dinozavry vymerli.
 dinosaurs died out
 ‘Dinosaurs are extinct.’

14.1.11 Negation and Negative Concord

Sentence negation is expressed by *ne* prefixed to the predicate. The same marker *ne* can also mark constituent negation (11c); negated constituents, like other focused constituents, tend to be sentence-final. Russian is a strict negative concord language: negative quantification is expressed by a combination of

the *ni*-words (*negative concord items*) with sentential negation. *Ne* is obligatory in the presence of negative concord items, except in elliptical contexts:

- (11) a. On ni=čego *(ne) znaet.
He NI=what *(not) knows
'He doesn't know anything.'
- b. On krasiv kak ni=kto ~~ne~~ ~~krasiv~~.
he handsome like NI=who not handsome.
'He is handsome like nobody is handsome.'
- c. Prišël ne Petja
came not Peter
'It was not Peter that came'

14.1.12 Quantificational NPIs

Russian *ni*-quantifiers have sometimes been analyzed as NPIs. However, *ni*-quantifiers are licensed only by the same-clause sentential negation but not other decreasing operators. *libo*-quantifiers are a better match to English NPIs since they are used in a wide variety of contexts, including decreasing contexts and polar questions, e.g. (cf. Pereltsvaig (2006a) for a discussion of the contexts in which *libo*-words are licensed):

- (12) a. Devočka ne xotela polučat' kakoe-libo / ni=kakoe obrazovanie voobščë.
Girl not wanted get.INF which-LIBO / NI=which education at.all
'The girl did not want to get any education at all.'
- b. Ja ne verju, čto ona polučit kakoe-libo / *ni=kakoe obrazovanie.
I not believe that she get.FUT which-LIBO / *NI=which education
'I do not believe that she will get any education.'
- c. Polučit li ona kakoe-libo / *ni=kakoe obrazovanie?
get.FUT whether she which-LIBO / *NI=which education
'Will she get any education?'

(see also the examples 66b–66d)

14.2 Generalized Existential Quantifiers

14.2.1 D-Quantifiers

In Russian, bare noun phrases can be interpreted as existentially quantified, but there is also a range of overt intersective determiners:

- (13) a. Nad kaminom ja uvidel (odin) portret Puškina
above fireplace I saw (one) picture Pushkin.GEN
'I saw a /one picture of Pushkin above the fireplace'

- b. Na ulice pojut (kakie-to) morjaki
 on street sing (which-EXIST) sailors
 ‘Some sailors are singing in the street’
- c. V Xakasii za novogodnie prazdniki pogiblo neskol’ko ženščin
 in Khakasia during the winter holidays died several women
 ‘Several women died in Khakasia during the winter holidays.’
 (actual news headline)

14.2.1.1 Existential Quantifiers

- a. Existential quantifiers can be formed from question words by means of prefix *koe-* and postfixes⁸ *-to*, *-libo*, *-nibud’*.

- (14) a. kto -to; kakoj -to portret Puškina
 who -EXIST; what -EXIST picture Pushkin.GEN
 ‘someone’; ‘some picture of Pushkin’

- b. Negative existential quantifiers are non-existent. They are expressed through a combination of negation with negative concord items, built from interrogatives with the prefix *ni-*.

- (15) ni = kto; ni = kakoj portret Puškina
 NI = who; NI = which picture Pushkin.GEN
 ‘nobody’; ‘no picture of Pushkin’

14.2.1.2 Numerals

Russian numerals are based on the decimal system. Table 14.2 gives the list of one-word cardinal numerals between 1 and 999. Names for other numbers below 1,000 are sequences of these one-word numerals, in the descending order of powers of 10, e.g. *sto sem’* ‘107,’ *trista pjat’nadcat’* ‘315,’ *dvadcat’ devjat’* ‘29.’ Note the one-word expressions for numerals 11–19, also found in compound numerals like *šest’sot devjatnadcat’* ‘619.’ Names of numbers larger than 1,000 list the powers of ten in decreasing order using nouns⁹ *tysjača* ‘1,000,’ *million* ‘1,000,000,’ *milliard* ‘1,000,000,000,’ *trillion* ‘trillion,’ *kvadrillion* ‘quadrillion,’ *kvintillion* ‘quintillion,’ etc., potentially *ad infinitum*. Here are some examples of numeral use:

⁸ Both of these have a special linear status. *Postfixes* are placed after case, number, and gender inflections (*k = ogo-to* : who = acc-Existential ‘someone’), and *prefixes* can be separated from the question word stem by prepositions (*koe na k = ogo* : Existential on who = acc ‘on someone’). *Koe-* marks specific indefinites, *-libo* and *-nibud’* non-specific.

⁹ See discussion of their noun status in Mel’čuk (1985).

Table 14.2 Cardinal numerals

1	odin	10	desjat'	11	odinnadcat'	100	sto
2	dva	20	dvadcat'	12	dvenadcat'	200	dvesti
3	tri	30	tridcat'	13	trinadcat'	300	trista
4	četyre	40	sorok	14	četyrnadcat'	400	četyresta
5	pjat'	50	pjat'desjat	15	pjatnadcat'	500	pjat'sot
6	šest'	60	šest'desjat	16	šestnadcat'	600	šest'sot
7	sem'	70	sem'desjat	17	semnadcat'	700	sem'sot
8	vosem'	80	vosem'desjat	18	vosemnadcat'	800	vosem'sot
9	devjat'	90	devjanosto	19	devjatnadcat'	900	devjat'sot

- (16) a. odin million trista pjatdesjat četyre tysjači sto vosemnadcat'
 1 million 300 50 four thousand 100 18
 '1,354,118'
- b. V klasse (est') (rovno) pjat' / bol'se pjati studentov.
 in class is (exactly) five more five students
 'There are (exactly) five / more than five students in the class.'
- c. V klasse net ni odnogo studenta.
 in class is.no NI one student
 'There are no students in the class.'

The noun *nul'* or *nol'* 'zero' is not found within compound numerals. By their syntactic and morphological properties, the interrogative word *skol'ko* 'how many, how much' and its derivatives like *neskol'ko* 'several,' *skol'ko-to* 'some quantity of' are close in distribution to (larger) numerals. *Mnogo* 'many,' *malo* 'few,' *beskonečno mnogo* 'infinitely many,' are similar to numerals but have slightly different properties and are traditionally classified as adverbs (see Mel'čuk (1985) for an extensive discussion of the properties of *mnogo*, *skol'ko* etc.). Determiners *nekotorye* 'some,' *nikakoj/ni odin* 'no,' *praktičeski/počti nikakoj/ni odin* 'practically/almost no' (all but the first negative concord items) are not numerals. See Section 14.5.1.1 on modified numerals.

Some theoretical issues of the syntax and semantic composition of numerals in Russian (and other languages) are discussed by Ionin and Matushansky (2006).

14.2.1.3 Negative Existential Quantification

The meaning of 'no' is expressed by a combination of sentential negation *ne* and negative concord items *nikakoj/ni odin*, consisting of the particle *ni* and either the interrogative determiner or the numeral 'one;' of these two, only *nikakoj* is used with mass nouns. No Russian determiner at all might correspond to *no* in some English sentences, especially in sentences with Genitive of Negation:

- (17) Otveta ne prišlo.
 answer.GEN not arrived
 'No answer arrived.'

14.2.1.4 Value Judgment Cardinals

Value judgment cardinals come in many syntactic flavors. The two core monomorphemic ones, *mnogo* ‘many, much’ and *malo* ‘few, little,’ can function as adverbs or like numerals (assigning partitive = 2nd genitive case). Some are adjectives (*(ne)mnogočislennyj* ‘(non-)numerous,’ *maločislennyj* ‘innumerable’). *(Ne)mnogie* ‘(not) many’ is an adjective morphologically but occupies strictly the leftmost position in their NP, i.e. patterns with determiners. *Mnogo* and *mnogie*, though related, are semantically different. The former, *mnogo*, gravitates toward collective readings, and the latter, *mnogie*, toward distributive readings (Mel’čuk, 1985, 309). Mel’čuk also notes that *mnogie* is more readily construed as restricting the domain of quantification to a contextually relevant set. This observation goes in line with Barbara Partee’s characterization of *mnogie* as a strong and *mnogo* as a weak quantifier (Partee, 2010, 10). There are also pronominal series with *mnogo* and *malo* as series markers, e.g. *malo kogda* ‘rarely’ (lit. ‘few when’), *mnogo kto* ‘many (people)’ (lit. ‘many who’).

- (18) a. My oprosili (ves'ma) mnogix / nemnogix / mnogočislennyx kandidatov.
we interviewed (very) many / few / numerous candidates
‘We interviewed (very) many / few / numerous candidates.’
- b. Sliškom mnogo / malo / nedostatočno kandidatov učastvovalo v vyborax.
too many / few / insufficient candidates participated in elections
‘Too many/few / Not enough candidates participated in the elections.’
- c. Udivitel'no mnogo / malo kandidatov učastvovalo v vyborax.
surprisingly many / few candidates participated in elections
‘Surprisingly many / few candidates participated in the elections.’

14.2.2 Interrogative D-Quantifiers

Russian possesses interrogative determiners, both cardinal (*skol'ko* ‘how many, how much’) and non-cardinal (*kakoj* ‘which’, *kotoryj* ‘which of the’):

- (19) a. Skol'ko studentov prišlo na lekciju?
how.many students came to lecture
‘How many students came to the lecture?’
- b. Kakie studenty sdali èkzamen?
which students passed exam
‘Which students passed the exam?’

14.2.3 Boolean Compounds of D-Quantifiers

Russian can apply some boolean operations to D-quantifiers, including disjunction (*ili* ‘or’ and the negative concord item *ni...ni* ‘(n)either...(n)or’) and negation (*ne*) but not conjunction (*i* and *a* ‘and’, *no* ‘but’):

- (20) a. Na lekciju prišlo ne bolee pjati studentov.
to lecture came not more five students
'Not more than five students came to the lecture.'
- b. Na lekciju prišlo četyre ili pjat' studentov.
to lecture came four or five students
'Four or five students came to the lecture.'
- c. Na lekciju ne prišlo ni četyre, ni pjat' studentov.
to lecture not came nor four nor five students
'Neither four nor five students came to the lecture.'

14.2.4 A-Quantifiers

One-word adverbs with the meaning 'n times' exist for numbers 2 through 4: *dvaždy*, *triždy*, *četyreždy*; there are also archaic adverbs of the same morphological model *odnaždy* 'once'¹⁰ and *mnogaždy* 'many times.' The productive way to express the meaning 'n times' is to combine a numeral with the noun *raz* 'time.' This latter strategy is applicable even when a one-word adverb exists, e.g. *dva raza* 'two times.' Here are some examples of existential A-quantifiers:

- (21) a. inogda; dvaždy; n raz; mnogo raz; ne očen' mnogo raz
sometimes; twice; n times; many times; not very many times
- b. často; počti ni-kogda; ni-kogda.
often; almost NI-when; NI-when.
'often', 'almost never', 'never'

A-quantifiers typically, but not always, express temporal quantification:

- (22) a. Inogda rodingity soderžat ksenolity vmeščajuščix serpentinitov.
sometimes rodingites contain xenolyths enclosing.GENPL serpentinite.GENPL
'Some rodingites contain inclusions of enclosing serpentinites.' (NCRL)
- b. Ja inogda xožu v školu peškom
I sometimes go to school by.foot
'I sometimes go to school by foot.'
- c. Dovol'no často èti cepočki daek raspolagajutsja soglasno zonam
quite often these arrays dikes.GEN are.located according.to zones
rasslancevaniya serpentinitov.
foliation.GEN serpentinites.GEN
'Quite often, these arrays of dikes are located according to the zones of serpentinite foliation.' (NCRL)

¹⁰ This adverb is nowadays more widely used in the meaning 'once upon a time' than in the original 'one time.'

- d. ...laktona, v častice ktorogol laktonnaja funkcija povtorjalas'
 ...lactone.GEN in particle which.GEN lactone function repeated
 by dva raza.
 SUBJ two times
 '...of a lactone in whose particle the lactone function would repeat twice.' (NCRL)
- e. Ja (počti) nikogda ne xožu v školu peškom
 I (almost) never not go to school by.foot
- f. Vanja byl v Taškente dvaždy / četyreždy / mnogo raz
 John was in Tashkent twice / four times / many times
 John visited Tashkent twice / four times / many times

Verbal morphology, e.g. prefixes *na-*, *po-*, or their combination *pona-*, can sometimes contribute quantificational meanings; with such verbs, the argument quantified, which can be either an intransitive subject or a direct object, can be marked with (partitive) genitive, cf.:

- (23) a. Bežali tarakany.
 ran roaches.NOM
 '(The) cockroaches were running.'
- b. Pona = bežalo tarakanov.
 PONA = ran roaches.GEN
 'A lot of cockroaches came running.'
- c. Nataša tut blinčikov na = lepila.
 Natasha here pancakes.GEN NA = modeled
 'Natasha made a lot of pancakes.' (NCRL)

Russian A-quantification also features adverbs derived from collective numerals (see Section 14.1.5). These come in three morphological models: *v-...-om* produces 'in a group of *x*': *vdvoëm* 'in a group of two', *vpjaterom* 'in a group of five' (see examples below in the Section 14.11 on quantifier float). Adverbs in *v-...-o* modify predicates of quantity change: *uveličit' vdvoe* 'to increase (something) twofold', *sokratit'sja vpjatero* 'to shrink fivefold'. Adverbs in *na-...-o* combine with verbs of division: *razbit' nadvoe* 'to break in two', *delit' natroe* 'divide in three'. The last type is very unproductive, represented only by *nadvoe* 'in two', *natroe* 'in three', *napopolam* 'in halves', and *nacelo* 'in equal integer parts'.

14.3 Generalized Universal (Co-intersective) Quantifiers

14.3.1 D-Quantifiers

Here are some co-intersective D-quantifiers of Russian: *vse* 'all', *každyj* 'every, each', *vsjakij* 'every, each', *vse, krome pjati* 'all but five', *počti vse* 'nearly/almost

all', *vse*, *krome konečnogo čisla* 'all but finitely many', *ne vse* 'not all', *každyj ... i ...* 'every...and...' As in English, *vse* 'all' differs from *každyj* 'each', *ljuboj* 'any', and *vsjakij* 'all, any' in allowing collective or group level interpretations. For example *vse* + N occurs naturally with symmetric predicates, *každyj*, *ljuboj*, and *vsjakij* + N do not:

- (24) a. Vse studenty sobralis' včera vo dvore.
all students gathered yesterday in courtyard
'All the students gathered/met in the courtyard last night.'
- b. *Každyj / *Vsjakij / *Ljuboj prepodavatel' sobraljsja včera vo dvore.
Every / all / any instructor gathered yesterday in courtyard
'*Each instructor gathered/met in the courtyard last night'

Quantifiers with the meaning 'all but n', including 'all but finitely many,' have the following syntactic property. They can be used as a syntactic unit as in [*vse*, *krome dvux*], *roli* 'all but two roles,' but this usage is marginal (although attested: *vse*, *krome dvux*, *roli* occurred naturally). It is preferable, however, to place *krome n* 'but n' after the noun phrase restrictor, as in *vse roli*, *krome dvux* 'all but two roles.'

- (25) a. Vse poety mečtajut.
all poets daydream
'All poets daydream.' (*POET* – *DAYDREAM* = \emptyset)
- b. Každyj učeník v klasse napisal stixotvoreníe.
every / each student in class wrote poem
'Every / Each student in the class wrote a poem.'
- c. Ne vse koški sery.
not all cats grey
'Not all cats are grey.'
- d. Vse studenty v klasse, krome dvux, sdali èkzamen.
All students in class except two passed exam
'All but two students in the class passed the exam.'
- e. Vse čisla, krome konečnogo (ix) količestva, bol'se sta.
All numbers except finite (their) quantity greater 100
'All but finitely many numbers are greater than 100.'
(In this example *číslo* 'number' in the second occurrence was replaced with *količestvo* 'quantity' to avoid using *číslo* in two different meanings in one sentence. This repetition would make the sentence awkward. A naturally occurring example of 'all but finitely many', from a description of the Turing machine, is given below.)
- f. Vse jačejki, krome konečnogo (ix) čisla, zanjaty pustymi simvolami.
All cells except finite (their) number occupied empty symbols
'All but finitely many cells are occupied by empty symbols.'
- g. Každyj mužčina, ženščina i rebėnok pokinuli gorod.
every man woman and child left city
'Every man, woman and child left the city.'

14.3.2 A-Quantifiers

Co-intersective A-quantifiers can be syntactically simple or complex

Vsegda ‘always’, *počti vseгда* ‘almost always’, *vsjakij raz, kak / vsjakij raz, kogda* ‘whenever’, (*počti*) *každyj raz* ‘(almost) every time.’

- (26) a. Ja vseгда / počti vseгда ezžu v školu na avtobuse.
I always / almost always go to school on bus
‘I always / almost always ride the bus to school’
- b. Vanja režetsja vseгда, kogda breetsja / vsjakij raz, [kogda / kak] breetsja.
John cuts himself always when shaves / every time when / as shaves
‘John cuts himself when(ever) he shaves / every time he shaves’

For a semantic analysis of major adverbial quantifiers in Russian, see Padučeva (1989b).

14.4 Proportional Quantifiers

14.4.1 D-Quantifiers Agreeing with Nouns

One proportional quantifier that agrees with plural nouns in case is the universal quantifier *vse* ‘all.’ Another variety of agreeing proportional determiners is based on *každyj* ‘every’. Such determiners combine with singular count nouns and have the structure *každyj* + ordinal numeral, e.g. *každyj pjatyj* ‘every fifth.’

The construction *X iz Y* ‘X out of Y’ combines with the restrictor noun as its numeral component that stands before the noun would. The noun can follow either numeral, as in *sem’ studentov iz desjati* ‘seven students out of ten’ vs. *sem’ iz desjati studentov* ‘seven out of ten students’. Correspondingly, numerals that end in *odin* ‘one’ combine with singular nouns and agree with them in case and gender, those ending in units 2 through 4, when in nominative, genitive or accusative, combine with the small paucal form, others with the large paucal form, and when in other cases, combine with plural nouns and agree with them. If the numeral ends in *odin*, it combines with a singular noun and agrees with it in case and gender in all cases, e.g. in *liš’ odin ... iz desjati* ‘just one ... in ten,’ *ni odin ... iz desjati* ‘not one ... in ten,’ *tridcat’ odin ... iz sta* ‘thirty one ... in one hundred.’

14.4.2 Quantifiers Assigning Genitive Case: $D + N_{Gen}$

Many proportional determiners are syntactically nouns that take a genitive (partitive) complement¹¹: *bol’sinstvo* ‘most’, *vosemdesjat procentov* ‘eighty percent of’, *dve treti* ‘two thirds of’, (*značitel’noe*) *bol’sinstvo* ‘a (large)

¹¹ Case assignment is a major reason to consider them nouns; they contrast with nounlike large numerals and value judgement cardinals that combine with the paucal form.

majority of’,¹² (*neznačitel’noe*) *men’šinstvo* ‘an (insignificant) minority of.’ These can freely combine with modifiers *bolee* ‘more than,’ *menee* ‘fewer than,’ *do* ‘up to’, etc. (see Section 14.5.1.1): *bolee dvadcati procentov* ‘more than twenty per cent of’, *menee četverti* ‘less than one quarter of’, *ot dvadcati to tridcati procentov* ‘between twenty and thirty percent of’, no direct Russian equivalent for *all but a tenth of*, (*liš’*) *nebol’šoj procent* ‘(just) a small percentage of’, *kakoj procent* ‘what percentage of?’, *kakaja dolja* ‘what fraction of?’, (*rovno*) *polovina* ‘(exactly) half (of)’, *bolee / menee poloviny* ‘more / less than half (of).’ Examples of sentences with proportional quantifiers:

- (27) a. Bol’šinstvo poetov mečtajut.
Most poets daydream
‘Most poets daydream.’
- b. Šest’desjat procentov amerikanskix podroستkov stradajut izbytočnym vesom.
sixty percent American teenagers suffer redundant weight
‘Sixty percent of American teenagers are overweight.’
- c. Menee odnoj pjatoj časti amerikancev dvujazyčny.
less one fifth part Americans bilingual
‘Less than a fifth of Americans are bilingual.’

14.4.3 A-Quantifiers

Russian has a variety of proportional A-quantifiers. Those lacking a one-word expression can be constructed from D-quantifiers with the noun *slučaj* ‘case’ and preposition *v* ‘in.’ Here are some examples: (*ne*) *často* ‘(in)frequently, (not) often’, *v osnovnom* / *v bol’šinstve slučaeв* ‘mostly’, *obyčno* ‘usually’, *redko* ‘sel-dom, rarely’, *v celom* ‘generally,’ *v dvux tretjax slučaeв* ‘two thirds of the time.’

- (28) a. Ženščiny v osnovnom golosovali za Rejgana.
women in basic voted for Reagan
‘Women mostly voted for Reagan.’
- b. V bol’šinstve slučaeв ženščiny golosovali za Rejgana
In most cases women voted for Reagan
‘For the most part women voted for Reagan.’
- c. Obyčno, kogda prestupniki ubegajut ot policii, oni ne
usually when outlaws flee from police they not
ostanavlivajutsja vypit’ kofe.
stop drink.INF coffee
‘Usually when outlaws flee the police they don’t stop for coffee.’

¹² I am not sure whether *podavljajuščee bol’šinstvo* ‘the vast majority of,’ meaning roughly the same as *počti vse* ‘almost all,’ must be treated as a proportional or as a co-intersective quantifier.

- d. Vanja često ezdit v školu na avtobuse.
John often goes to school on bus
'John often / frequently rides the bus to school.'
- e. Vanja redko xodit v muzei po voskresen'jam
John rarely goes to museums on Sundays
'John seldom / rarely visits museums on Sundays.'

14.5 Morphosyntactically Complex Quantifiers

14.5.1 Complex D-Quantifiers

14.5.1.1 Modified Numerals

Mel'čuk (1985) classifies the specialized numeral modifiers, which he calls markers of approximateness, into three syntactic groups:

- adverbials, e.g. *priblizitel'no, ètak* 'approximately,' (*ne menea čem* '(not) less than,' *s gakom* 'and more,' *rovno* 'exactly'; under this rubric, we may also consider promiscuous ('focus') particles *počti (čto)* 'almost,' *tol'ko* 'only,' *liš'* 'just.'
- prepositions, e.g. *okolo* 'about,' *ot ... do* 'between ... and,' *za* 'over' (*emu za pjat' desjat let* 'he is over 50');
- comparatives *bolee, bol'se* 'more (than),' *menea, men'se* 'less (than).'

These modifiers, except for the adverbials, are taken (Mel'čuk, 1985) to syntactically govern the noun phrase with the numeral and assign case to it (genitive, with the exception of prepositions *pod* and *za* which assign accusative); an alternative is to treat such prepositions as governing the numeral only, so that the noun combines with the preposition-numeral complex (Babby, 1985). The whole quantified NP with the prepositional modifying item does not exhibit the surface case normally associated with its surface position, and is used only in the contexts for nominative or accusative case (cf. Sections 14.1.4 and 14.1.6), or (more rarely) whatever surface case the QNP's form is homophonous with, usually genitive or dative. Comparative modifiers generally pattern with prepositions, but when they include the comparative particle *čem* (*bolee čem* 'more than', *menea čem* 'less than') they exhibit the behavior of adverbial modifiers and combine with all case forms. Examples of modified numerals: *men'se pjati* 'fewer than five,' *rovno/tol'ko/liš' pjat'* 'exactly/only/just five,' *men'se pjati* 'less/fewer than five,' *ne men'se/menea pjati* 'at least five,' *ne bol'se/bolee pjati* 'at most five,' *okolo desjati* 'about ten,' *priblizitel'no desjat'* 'approximately ten,' *počti sto* 'nearly/almost a hundred,' *ot pjati do desjati* 'between five and ten.'

The meaning 'approximately' can be expressed not only by overt modifiers, but also by the inversion of the numeral-noun order (Billings, 1995). There are no case or positional restrictions on this construction, unlike with the modifiers

discussed above. This inversion has been treated as head movement since only the noun is generally inverted but not its modifiers (Pereltsvaig, 2006b). If the QNP is an object of a preposition, the head noun precedes the preposition:

- (29) a. Javilos' čelovek tridcat'.
 showed up people thirty
 'About thirty people showed up.' (NCRL)
- b. Javilos' tridcat' čelovek.
 showed up thirty people
 'Thirty people showed up.'
- c. čerez pjatnadcat' minut.
 after fifteen minutes
 'fifteen minutes later'
- d. minut čerez pjatnadcat'
 minutes after fifteen
 'about fifteen minutes later'

14.5.1.2 Modified Value Judgment Cardinals

As in English, *mnogo* 'many, much' and *malo* 'little, few' combine with adverbs building complex quantifiers: *osobenno mnogo* 'especially many or much', *sliškom mnogo* 'too many or much', *dovol'no mnogo* 'quite many or much', *sovsem malo* 'altogether little or few', *udivitel'no malo* 'surprisingly little or few', cf. also sentence examples (all examples come from NCRL):

- (30) a. V ètot raz na festivale bylo udivitel'no malo zritelej.
 in this time on festival was surprisingly few viewers
 'This time there were surprisingly few people in the festival's audience.'
- b. Odnako ètot organ zrenija ulavlivaet sliškom malo sveta.
 but this organ vision.GEN catches too little light
 'But this vision organ catches too little light.'
- c. U nas neverojatno mnogo talantlivyx ljudej.
 at us incredibly many talented people
 'We have incredibly many talented people.'

14.5.1.3 Exception Phrases

Exception phrases are introduced by the preposition *krome* or complex preposition *za isključeniem* 'with the exception of'.

- (31) a. Vse studenty, krome Vani, prišli na urok rano.
 all students except John came to class early
 'Every student but John came to class early.'

- b. Ni odin student, krome Vani, ne ušel s večerinki pozdno.
 NI one student except John not left from party late
 ‘No student but John left the party late.’

Exception phrases normally combine with universal quantifiers, including negative concord items like *ni odin* above, which are also likely to be interpreted universally (Abels, 2005). However, one can find examples with other quantifiers (examples below come from NCRL), where *krome* can be translated either as *except* or as *besides*:

- (32) a. Krome Èterpy bylo eščë vosem' muz.
 except Euterpe was more eight muses
 ‘There were eight more Muses not counting Euterpe.’
- b. Komu, krome tebjja, ja mogu eščë byt' nužna?
 who except you I can still be necessary
 ‘Who can need me if not you?’
- c. Pošli za neju mnogie, krome professorov i vrača.
 went after her many except professors and doctor
 ‘Many people followed her, with the exception of the professors and the doctor.’
- d. ... – u mnogix, krome edinstvennogo!
 at many except the only
 ‘{many of them show suffering and doubt on their faces} – many, with a single exception!’
- e. Ne znaju, zametil li ètu strannost' kto-to eščë, krome menja
 not know noticed whether this strangeness who-to else except me
 ‘I don’t know if anyone else besides me noticed this strange thing.’

14.5.1.4 Proportional Quantifiers

Proportional quantifiers are generally structurally complex, under both productive constructions: ‘*každyj* + ordinal numeral’ (*každyj pjatyj* ‘every fifth’) and ‘cardinal numeral + fraction’ (*dve desjatyx* ‘two tenths’, *tri procenta* ‘three percent’); exceptions are fraction names used on their own (including just *polovina* ‘half’, *tret'* ‘one third’, *četvert'* ‘quarter’). Proportional quantifiers can be modified by focus particles and adverbs: (*liš'*, *rovno*, *tol'ko*) *sem' iz desjati* ‘(just, exactly, only) seven out of ten.’ Comparative and prepositional modifiers as in *ne menee* / *bolee semi iz desjati* ‘at least / more than seven out of ten’ are almost never used with proportional quantifiers; if modified this way, such quantifiers are interpreted as partitive (‘seven of the ten’) rather than proportional. A rare example of such a modifier in a proportional usage comes from a 19th century text (33b). Examples:

- (33) a. Sem' iz desjati poetov mečtajut.
 Seven from ten poets daydream
 ‘Seven out of ten poets daydream.’

- b. Iz celoj armii ostalos' ne bolee dvux iz desjati čelovek.
 from whole army remained not more two from ten people
 'At most two in ten people survived from the whole army.' (NCRL)
- c. Ni odin učitel' iz desjati ne znaet otvet na vopros.
 NI one.NOM teacher.NOM from ten not knows answer on question
 'Not one teacher in ten knows the answer to that question.'¹³

14.5.1.5 Boolean Compounds of Determiners

Russian forms boolean compounds of determiners, except for conjunctions of determiners ('and') whose meanings are preferably expressed by other means (e.g. *ot X do Y* 'between X and Y' rather than *ne menee X no ne bolee Y* 'at least X but not more than Y'); sentences with conjoined determiners are improved if the shared common noun phrase is supplied with the preposition *iz* 'out of'. Boolean compounding may simply make the sentence grammatical if the selection properties of the quantifiers are otherwise incompatible, as in (34d):

- (34) a. Ot dvux do desjati studentov polučat stipendii v sledujuščem godu.
 From two till ten students get.FUT scholarships in next year
 'At least two but not more than ten students will get scholarships next year'
 is preferable over
- b. Ne menee dvux, no ne bolee desjati (iz) studentov polučat stipendii v sledujuščem godu.
 not less two but not more ten of students get.FUT scholarships in next year
 'At least two but not more than ten students will get scholarships next year.'
- c. Bol'sinstvo poetov, no ne vse (iz nix), spjat dnëm.
 Most poets but not all (of them) sleep in.the.afternoon
 'Most but not all poets sleep in the afternoon.'
- d. Bol'sinstvo, no ne vse, *(iz) poetov spjat dnëm.
 Most but not all (of) poets sleep in.the.afternoon
 'Most but not all poets sleep in the afternoon.'
- e. Ni každyj student, ni každyj učitel' ne prišël na večerinku.
 Nor every student nor every teacher not came to party
 'Neither every student nor every teacher came to the party.'

14.5.1.6 Partitives: D + iz + NP_{Gen.pl}

Russian uses syntactically complex NP partitives with the preposition *iz* with cardinal, interrogative, universal, or proportional quantifiers. Quantifiers that

¹³ As discussed, the quantifier in the last example is not interpreted as proportional but as partitive. Instead, it reads as referring to a definite set of ten teachers, and can better translated as *Not one of the ten teachers knows the answer to that question.*

usually occur without a common noun restrictor (e.g. *kto* ‘who,’ *nikto* ‘nobody,’ *malo čto* ‘few things’) can still be used in partitive constructions. Determiners that typically combine with noun restrictors can be used in the partitive construction, but this is dispreferred (e.g. collective numerals are preferred over cardinal numerals). Partitive constructions with proportional determiners are slightly degraded, too. Personal pronouns, in contrast to full NPs, can freely occur in partitive constructions with any determiners:

- (35) a. *Liš' dvoe / ?dva iz studentov / tex / moix studentov /*
 Just two of students / those / my students /
studentov Vani sdali èkzamen.
 students John.GEN passed exam
 Just two of (the /those students / my / John’s students) passed the exam.
- b. *Kto iz studentov / tex studentov sdal èkzamen?*
 who of students / those students passed exam
 Which of the / those students passed the exam?
- c. *?Kakie iz studentov / tex studentov sdali èkzamen?*
 which of students / those students passed exam
 Which of the / those students passed the exam?
- d. *Ni = kto / ni odin / ?ni = kakoj iz studentov ne sdal èkzamen.*
 NI = who / NI one / NI = which of students not passed exam
 None/neither of the students passed the exam.
- e. *Oba iz nix / ?studentov sdali èkzamen.*
 both of them / ?students passed exam
 ‘Both of them / the students passed the exam.’
- f. *?Bolee vos'midesjati procentov / pjat' šestyx iz studentov ne sdali èkzamen.*
 more eighty percent / five sixths of students not passed exam
 ‘More than eighty percent / five sixths of the students passed the exam.’
- g. *Bol'sinstvo iz nix / ?studentov sdalo èkzamen.*
 majority of them / ?students passed exam
 ‘Most of them / the students passed the exam.’

Among the universal quantifiers, *každyj* ‘every’ is preferable over *vse* ‘all’ in partitive constructions:

- (36) a. *Každyj / ne každyj iz studentov sdal èkzamen.*
 every / not every of students passed exam
 ‘All / Not all of the students passed the exam.’
- b. *??Vse / ?Ne vse iz studentov sdali èkzamen.*
 all / not all of students passed exam
 ‘All / Not all of the students passed the exam.’

14.5.2 Complex A-Quantifiers

14.5.2.1 Modification

Russian A-quantifiers are generally modified in the same ways as D-quantifiers, cf.:

- (37) a. Vanja byl v Moskve rovno dvaždy / bolee pjati raz.
John was in Moscow exactly twice / more five times
'John has been to Moscow exactly twice / more than five times.'
- b. Vanja počti vseгда / liš' inogda ezdit na avtobuse.
John almost always / just sometimes rides on bus
'John almost always / just rarely takes the bus.'
- c. Vanja ezdit na avtobuse v dva raza čašče, čem ty.
John rides on bus in two times more often than you
'John takes the bus twice as often as you.'

14.5.2.2 Boolean Compounds

Adverbial quantifiers can be coordinated; in those built from NPs, syntactic complexity can be added by coordinating or modifying the determiners they include:

- (38) a. Vanja propuskal urok ot trëx do pjati raz.
John has missed class from two to five times
'John has missed class at least twice but not more than five times.'
- b. Na prezidentskix vyborax Marija často, no ne vseгда,
In presidential elections Mary frequently but not always
golosovala za demokrata.
voted for Democrat
'In presidential elections Mary has frequently but not always voted for a Democrat'

14.6 Comparative Quantifiers

14.6.1 Comparison of NP Extensions

Russian comparative constructions have largely the same structure as in English. The distribution of comparative D-quantifiers, however, is limited to the positions of the subject and direct object (cf. Section 14.1.4). Even in the case of subjects there is a strong tendency for such comparative noun phrases to be sentence final (postverbal if the sentence has a verbal predicate). (I could not illustrate any positions created by raising to object, due to the absence of clear cases of raising verbs in Russian.)

- (39) a. Na večerinku prišlo bol'she učnikov, čem učitelej.
 on party came more students than teachers
 More students than teachers came to the party
- b. Na večerinku prišlo ne men'she učnikov, čem učitelej.
 on party came not less students than teachers
 At least as many students as teachers came to the party
- c. Ja konsul'tirovala primerno stol'ko že mužčin, skol'ko i ženščin.
 I consulted approximately as many men as also women
 I consulted approximately as many men as women.
- d. Ja znaju bol'she učnikov, čem učitelej.
 I know more students than teachers
 I know more students than teachers (Direct Object)
- e. *Ja rabotal s bol'she učnikov, čem učitelej.
 I worked with more students than teachers
 I have worked with more students than teachers (Obj of Prep)
- f. *Byli ukradeny velosipedy stol'kix že učnikov, skol'ko i učitelej.
 were stolen bicycles as many students as also teachers
 Just as many students' as teachers' bicycles were stolen (Possessor)

14.6.2 Comparison of Predicate Extension (Type $\langle 1, \langle 1, 1 \rangle \rangle$)

Russian has counterparts of English quantifiers with just one conservativity domain but two predicate properties; these include *(ne) bol'she ... čem* '(not) more ... than,' *(ne) men'she ... čem* '(not) less ... than,' *te že ... čto/kotorye* 'the same ... as/which,' *stol'ko že ... skol'ko* 'as many ... as,' covering the whole range of comparative operators as in previous subsection. These, too, are generally clause-final in the main clause. Examples:

- (40) a. Na večerinku prišlo bol'she studentov, čem gotovilos' k èkzamenam.
 to party came more students than prepared for exams
 More students came to the party than studied for their exams
- b. Rano prišli te že studenty, čto / kotorye ušli pozdno.
 early came the same students that / which left late
 The same students came early as left late (\neq 'The students who came early left late' which is strictly weaker: one is a full equivalence and the other only a one-way implication)
- c. Tam rabotajut te že prepodavateli, čto i v institute.
 there work those EMPH professors that also in institute
 The same professors work there as in the institute.

14.7 Type ⟨2⟩ Quantifiers

Russian has exact counterparts of most English type ⟨2⟩ quantifiers (Keenan, 1992, Keenan, 1996) including those not reducible to the iterated application of two functions of type ⟨1, 1⟩:

- (41) a. *Kakie studenty otvetili na kakie voprosy?*
 which students answered on which questions
 Which students answered which questions?
- b. *Vse studenty otvetili na odni i te že voprosy*
 all students answered on one and the same questions
 All the students answered the same questions
- c. *Vse studenty otvetili na raznye voprosy*
 all students answered on different questions
 Each student answered a different question (for every two students, the sets of questions they answered were different)
- d. *Raznye studenty otvetili na raznye voprosy*
 different students answered on different questions
 Different students answered different questions (ambiguous between the reading of the sentence above and ‘for at least two students, the sets of questions they answered were different.’)
- e. *Vanja i Petja život v sosednix derevnjax.*
 John and Peter live in neighboring villages
 John and Peter live in neighboring villages
- f. *Oni život v raznyx kvartirax v odnom i tom že zdanii.*
 they live in different apartments in one and the same building
 They live in different apartments in the same building
- g. *Na vsex učastnikax byl galstuk odnogo cveta.*
 On all participants was necktie one.GEN color.GEN
 All the participants wore the same color necktie
- h. *Vanja tanceval s Mašej, no bol’she ni = kto*
 John danced with Mary but more NI = who
 ni s kem ne tanceval.
 NI with whom not danced.
 John danced with Mary but no one else danced with anyone else
 (Doesn’t sound right with a second *bol’she* ‘else’ after *nikto*)
- i. *Kartiny nado povestit’ v raznyx komnatax ili*
 paintings should hang in different rooms or
na protivopoložnyx stenax odnoj komnaty.
 on opposite walls one.GEN room.GEN
 The paintings should be hung in separate rooms or on opposite walls of the same room

- j. (Raznye) prisjažnye sdělali raznye vyvody iz odnix i
 (Different) jurors made different conclusions from one and
 tex že argumentov
 the same arguments
 The/Different jurors drew different conclusions from the same
 arguments

In addition to these, instances of Hybrid Coordination (Section 14.21.2) are type ⟨2⟩ (type ⟨*n*⟩, for *n* greater than 1) quantifiers which are expressed by a single syntactic constituent. Their meanings can always be paraphrased using a combination of some type ⟨1⟩ quantifiers, so the meanings expressed are Fregean (but still of type ⟨2⟩), with the possible exception of interrogative quantifiers.

14.8 Distributive Numerals and Binominal Each

In Russian the adverbial *v obščej složnosti* ‘in total’ forces group (collective) readings in pairs of QNPs, *každyj* ‘each,’ either as a determiner or as a floating quantifier, forces distributive readings:

- (42) a. Tri prepodavatelja proverili v obščej složnosti sto rabot.
 three instructors graded in total 100 exams
 Three instructors graded 100 exams between them / in total (just
 group/collective)
- b. Tri prepodavatelja proverili sto rabot každyj.
 three instructors graded 100 exams each
 Three instructors graded 100 exams apiece / each (just a distributive,
 SWS reading)

Russian forms distributive quantified phrases with numerals using the preposition *po* (so one could say that Russian has both binominal *each* and distributive numerals, albeit not morphologically marked). Distributive *po* shows peculiar selection properties. Numerals *tysjača* ‘thousand,’ *million* ‘million,’ *milliard* ‘billion,’ *odin* ‘one,’ and those ending in *odin* ‘one’¹⁴ are in the dative case when combined with the distributive *po*, while noun phrases with other numerals are used in the nominative. Numeral *odin* ‘one’ can be omitted after distributive *po* as in (44a). Here are some naturally occurring examples (all but the first one are taken from NCRL):

¹⁴ In colloquial Russian, *po* + Dative in examples like *po dvadcati odnomu* ‘twenty one each’ tend to be replaced with nominative like in *po dvadcat’ odin*. This use is restricted to inanimate masculine nouns, probably because the masculine form is underspecified for nominative vs. accusative. Such expressions, however, remain marginal. Cf. an actual example from fiction (Dmitrii Kurtsman, *Skazanie O Side*):

- (43) Nam po dvadcat’ odin god.
 Us.DAT PO twenty one year
 ‘We are twenty one year old each.’

- (44) a. Každýj govorit o predmete po (odnomu) predloženiju.
 every says about subject PO one.DAT sentence.DAT
 ‘Everybody says one sentence on the topic.’ (from a game description)
- b. Po dvadcati odnomu vagonu v každom sostave bylo.
 PO twenty.DAT one.DAT car.DAT in each train was
 ‘Every train had twenty one cars.’
- c. Každýj iz nix vložil v predpriatie po 245 tysjač dollarov.
 Each of them invested in enterprise PO 245 thousand dollars
 ‘Each of them invested 245,000 dollars into the enterprise.’

14.9 Mass Quantifiers and Count Classifiers

14.9.1 Count Noun Determiners

In Russian, numerals combine with count but not mass nouns: *desjat' domov* ‘ten houses’ / *#desjat' vodorodov* ‘ten hydrogens.’ But, as in English, numerals may induce a type reading with mass nouns: *dva neploxix vina* ‘two good wines’ = ‘two good types of wine,’ or a portion reading: *dva saxara* ‘two sugars’ = ‘two packs of sugar,’ *tri piva* ‘three beers’ = ‘three glasses of beer’. The determiners *(ne)mnoгие* ‘(not) many’ and the oblique cases of *skol'ko* ‘how many, how much’ are morphologically plural and do not combine with mass nouns: *ot skol'ki domov* ‘from how many houses?’ / *ot skol'ki *vodoroda/#vodorodov* ‘from how many *hydrogen / #hydrogens?’ (but OK *skol'ko vodoroda* ‘how much hydrogen’). *Nekotoryj* ‘(a) certain’ can be either plural or singular but is not used with mass nouns: *nekotoryj kod* ‘a certain code,’ but *#nekotoroe pivo* ‘a certain beer.’

Neskol'ko ‘several’ in the modern language also combines only with count nouns, although historically it used to mean ‘some’ and combined with both mass and count nouns as in obsolete expressions *neskol'ko vremeni* ‘some time,’ *neskol'ko deneg* ‘some money’.

14.9.2 Two-Way Determiners

Most Dets in Russian combine with both mass and count nouns. Most of these quantifiers assign genitive singular (or partitive) to mass nouns, and genitive plural (or the greater paucal form) to count nouns. This includes proportional determiners. Determiner *vs-* ‘all’ does not assign case to its NP but rather agrees with it; it selects for plural and is used in the plural when combined with count nouns, and selects for singular and has a singular form with mass nouns.

- (45) a. malo studentov / masla, desjat' procentov podroستkov / zolota
 few students.GEN / butter.GEN, ten per cent teenagers / gold
 few students / little butter, ten per cent of teenagers / ten per cent of gold

- b. vse doma / vsě pivo, mnogo okon / vina
 all.NOMPL houses.NOM / all.NOMSGN beer.NOM(N), a lot of windows / wine
 All (the) houses / all (the) beer, a lot of windows / a lot of wine
- c. skol'ko-to mašin / reziny, ni = kakie mašiny / ni = kakaja rezina
 some cars / rubber, NI = which cars / ni = which rubber
 (some/no) car(s) / (some/no) rubber,
- d. nedostatočno studentov / vina, malo studentov / vina
 not enough students wine, little students wine
 not enough students / not enough wine, few students / little wine

14.9.3 Mass Noun Determiners

There are no determiners in Russian that combine exclusively with mass nouns.

14.9.4 Numeral Classifiers

Classifiers are not grammaticized in Russian, but, as in English, there are nouns that convert mass terms into count ones, enabling us to combine them with numerals and mark plural: *sto golov skota* ‘100 head of cattle’, *pjat' počatkov kukuruzy* ‘five ears of corn’, *odin kusok myla* ‘a bar of soap’, *neskol'ko listov bumagi* ‘several sheets of paper’, *odna buxanka xleba* ‘a loaf of bread’. In addition to this, when counting people, the classifier *čelovek* ‘person’ can be used after numerals, followed by the noun phrase in genitive plural:

- (46) Sorok pjat' čelovek rjadovyx i odin lejtenant.
 forty five people soldiers and one lieutenant
 ‘Forty five soldiers and one lieutenant.’ (From Ju. Dombrovsky,
Obez'jana prixodit za svoim čerepom)

14.9.5 Containers and Measures

Container expressions are another way to convert mass to count terms, but they retain their meaning of a physical object. A distinction between dedicated *containers* and simple *vessels* which can accidentally be used as containers has been reported to find expression in Russian, see (Borschev and Partee, 2011, Partee and Borschev, In press). Syntactically container expressions are quantified noun phrases with a mass noun dependent in genitive or partitive:

- (47) dve butylki vina; paket moloka; mnogo korobok konfet
 two bottles wine.GEN bag milk.GEN many boxes candy.GEN
 ‘two bottles of wine, a carton of milk, many boxes of candy’

For example, buying a bottle of milk usually includes buying a bottle, but it could also refer to filling one's own bottle with milk. In other words, names of containers specify quantity (as measure phrases), but in addition to that require that the measured entity be in the specified container *at some moment*.

- (48) Petja vypil paket moloka
 Peter drank bag milk
 'Peter drank a bag of milk'

Measure phrases, specifying pure quantity, have the same structure as container expressions (Russian is in this respect similar to Romanian and different from Greek, cf. Brasoveanu (2008), Stavrou (2003)). They assign partitive (or genitive) case to the mass noun:

- (49) dva funta syra / syru; kilogramm soli; mnogo tonn nefti
 two pounds cheese.GEN/PART kilogram salt.GEN many tons oil.GEN
 'two pounds of cheese, a kilogram of salt, many tons of oil'

14.9.6 Space and Time Measures

Units of time and distance, like measure phrases, follow the metric system. Non-metric measure terms like *sažen'* (distance, ≈7 feet), *versta* (distance, ≈ 3,500 feet), *puđ* (weight, ≈36 lbs) are obsolete. A bare singular measure word can be used in the meaning of 'one', e.g. *za minutu* 'in one minute'. Certain verb prefixes (*pro-*, *ot-*, *do-*, *vy-*) can add a space or time measure argument as the direct object. Space and time measure phrases in accusative case can function as adverbials (translated into English with the preposition *for*). To a limited extent such accusative adverbials are subject to the case alternation known as genitive of negation (Erschler, 2007), although whether different instances of genitive under negation can be unified is controversial (Franks and Dziwirek, 1993).

- (50) a. Petja bežal tri kilometra.
 Peter ran three kilometers
 'Peter ran for three kilometers.'
 b. Ja prospal desjat' časov.
 I slept.for ten hours
 'I slept for ten hours.'
 c. Ja vernus' čerez sem' dneĵ.
 I return.FUT after seven days
 'I will return in seven days.'
 d. V nedele sem' dneĵ.
 in week seven days
 'There are seven days in a week.'

- (51) a. Novogradovka naxodit = sja v soroka kilometrax ot Donecka.
 Novogradovka finds = REFL in forty kilometers from Donetsk
 ‘Novogradovka is forty kilometers from Donetsk.’ (from world wide web)
- b. Vanja na tri santimetra vyše, čem Petja.
 John on three centimeters taller than Peter
 ‘John is three centimeters taller than Peter.’

14.10 Existential Construction

Existential sentences in Russian have the form ‘restricting prepositional phrase + copula + subject NP,’ and are a subtype of verbal sentences rather than a standalone construction. The present tense copula *est'*¹⁵ may be omitted in the presence of the restricting prepositional phrase.

- (52) a. V klasse sejčas (est') pjat' učenikov; v prošlom godu bylo desjat'.
 in class now (is) five students; in last year was ten
 ‘There are five students in the class now; last year there were ten
 (students in the class)’
- b. V klasse sejčas net učenikov; v prošlom godu bylo mnogo.
 in class now is.no students; in last year was many
 ‘There are no students in the class now; last year there were many
 (students in the class)’
- c. V dome kto-to est'
 in house who-EXIST is
 ‘There is someone in the house’
- d. Kto (est') v dome?
 who (is) in house
 ‘Who is in the house?’
- e. Est' li kto-libo v dome?
 is whether who-LIBO in house
 ‘Is there anyone in the house?’
- f. V dome ni = kogo net
 in house NI = who is.no
 ‘There isn’t anyone in the house.’

The meaning of existence can also be expressed with a special verb *suščestvovat'* ‘exist’ (examples from NCRL):

- (53) a. Suščestvuet tak nazyvaemaja Minskaja grupa OBSE.
 exists so called Minsk:ADJ group OSCE
 ‘There is the so-called OSCE Minsk Group’

¹⁵ *Est'*, glossed ‘is,’ does not distinguish number, person, or gender forms.

- b. Suščestvuet celyj rjad takix bibliotek.
exists whole row such libraries.GEN
'There is quite a number of such libraries.'

Russian does not exhibit English-like restrictions on the determiners in existential statements:

- (54) a. V klasse est' vse studenty.
in class is all students
'All students are in the class.'
- b. V klasse est' bol'sinstvo studentov.
in class is most students
'Most students are in the class.'
- c. V klasse est' Vanja.
in class is John
'John is in the class.'

Negative existential statements, as in the examples below, use the same negative particle *ne* as in simple declarative sentences. Present tense is exceptional, though: instead of **ne est'* Russian uses the special form *net* or (colloquial) *netu*.¹⁶ Pivot NPs are in the genitive case under negation.

- (55) a. V slovare net /netu risunkov.
in dictionary is.no pictures.GEN
'There are no pictures in the dictionary'
- b. V slovare ne bylo risunkov.
in dictionary not was pictures.GEN
'There were no pictures in the dictionary'
- c. V slovare ne budet risunkov.
in dictionary not be.FUT pictures.GEN
'There will be no pictures in the dictionary'

Existential copula *byt'* 'be' is also used as the default way to express possession, with the possessor expressed by a prepositional phrase with the preposition *u*:

- (56) a. U menja net /netu risunkov.
at I.GEN is.no pictures.GEN
'I have no pictures.'

¹⁶ As *est'*, the negative present-tense copulas do not distinguish number, person, or gender forms.

- b. U menja est' risunki.
 at I.GEN is pictures.GEN
 'I have (some) pictures.'
- c. U menja byli risunki.
 at I.GEN were pictures.GEN
 'I had (some) pictures.'

Barbara Partee identified one context in Russian in which the definiteness effect does manifest itself in existential statements (Partee, 2010, 10).

- (57) U nego est' ^{OK}odna / *každaja sestra.
 of he.GEN is one / *every sister
 'He has one / *every sister.'

This applies only to possessive statements with relational nouns in them; other cases may be analyzed as ambiguous between existential and locative (Partee and Borschev, 2007).

14.11 Floating Quantifiers

Russian, as English, allows *vse* 'all' and *oba* 'both' to be part of the predicate as well as of a noun phrase. Examples:

- (58) a. Eti studenty včera oba gotovilis' k èkzamenam.
 these students yesterday both prepared to exams
 'Yesterday these students both studied for their exams.'
- b. Oba studenta včera gotovilis' k èkzamenam.
 Both students yesterday prepared to exams
 'Yesterday both students studied for their exams.'
- c. Petja i Vanja včera oba gotovilis' k èkzamenam.
 Peter and John yesterday both prepared to exams
 'Yesterday Peter and John both studied for their exams.'
- d. Èti studenty včera vse gotovilis' k èkzamenam.
 these students yesterday all prepared to exams
 'Yesterday these students all studied for their exams.'
- e. Vse èti studenty včera gotovilis' k èkzamenam.
 all these students yesterday prepared to exams
 'Yesterday all these students studied for their exams.'
- f. Maša, Petja i Vanja včera vse gotovilis' k èkzamenam.
 Mary Peter and John yesterday all prepared to exams
 'Yesterday Mary, Peter, and John all studied for their exams.'

Numerals do not usually occur in the same form in predicates as within noun phrases; instead, special adverbial forms are used: *dvvoëm* 'two in quantity,' *vtroëm* 'three in quantity,' *včetverom* 'four in quantity,' etc. These adverbs,

however, not only specify quantity but also force a group reading; this component of their meaning may be translated as ‘together.’

- (59) a. Èti dva studenta včera gotovilis' k èkzamenam.
 these two students yesterday prepared for exams
 ‘Yesterday these two students studied for their exams.’ = ‘Yesterday these students both studied for their exams.’
- b. Èti studenty včera vdvoëm gotovilis' k èkzamenam.
 these students yesterday in.two prepared for exams
 ‘Yesterday these two students studied for their exams (together)’ ≠
 ‘Yesterday these students both studied for their exams.’

To the extent that floating numerals are acceptable, collective numerals (*troe* ‘3’, *četvero* ‘4’, *pjatero* ‘5’ etc.) are preferable compared to cardinal numerals (e.g. *tri*, *četyre*, *pjat'*)

- (60) a. Èti tri studenta včera gotovilis' k èkzamenam.
 these three students yesterday prepared for exams
 ‘Yesterday these three students studied for their exams.’
- b. Èti studenty včera *tri / ?troe (OK vtroëm)
 these students yesterday *three.CARD/?COLL (OK in.three)
 gotovilis' k èkzamenam.
 prepared for exams
 ‘Yesterday these three students studied for their exams.’

14.12 Quantifiers as Predicates

In Russian, not only cardinal numerals and value judgment cardinals can function as predicates but also measure phrases and container phrases. Count terms as subjects of quantifier predicates accept the genitive plural form, even if the numeral that functions as a predicate combines with the smaller count form, as *dva* does, or with nominative singular, as *dvadcat' odin* does. One exception to this is the predicate *odin* ‘one’, which combines with nominative subjects. Mass terms take partitive (singular) form:

- (61) a. Student byl odin.
 student.NOMSG was one
 ‘The student was one in number.’
- b. Studentov bylo dva.
 student.GENPL was two
 ‘The students were two in number.’

- c. Studentov bylo pjat'.
 student.GENPL was five
 'The students were five in number.'
- d. Studentov bylo dvadcat' odin.
 student.GENPL was twenty one
 'The students were five twenty one.'
- e. Studentov bylo pjat' vagonov.
 student.GENPL was five car
 'The students were five (train) cars in volume.'
- f. Muki bylo pjat' jaščikov.
 flour.GENSG was five cases
 'The flour was five cases in volume.'
- g. Vody bylo pjat' litrov.
 water.GENSG was five liters
 'The water was five liters in volume.'

14.13 Determiners Functioning as Arguments

All determiners can function as NPs in elliptical contexts, as seen in the following example:

- (62) Galstuki byli nedorogi, tak čto ja primeril
 ties were inexpensive so I fit
 tri, neskol'ko, bol'sinstvo, mnogo, vse, každyj
 three several many most all every
 'The ties were inexpensive so I tried on three, several, a few, many, most of them, them all, each one.'

14.14 Relations Between Universal, Existential, and Interrogative Pronouns

As mentioned in the beginning of this article, many pronouns and pronominal adverbs are organized in series. This means systematic formal relations between e.g. interrogative pronouns and universal pronouns: *kogda* 'when', *vsegda* 'always' (temporal adverb), *čego* 'of what', *vsego* 'of everything' (Genitive singular inanimate), *čemu* 'to what', *vsemu* 'to everything' (Dative singular inanimate), *gde* 'where', *vezde* 'everywhere' (locative adverb, with voicing of /k/ of the interrogative stem and /s/ of the universal stem). The formal relation of interrogatives with universals (and demonstratives) is a heritage of Proto-Slavic where this relation was very regular. But synchronically the formal correspondence has been obscured in many cases by morphological innovations and semantic shifts, cf. formal differences in *kak* 'how' and *vsjako* 'in all ways';

otkuda ‘whence’ and *otovsjudu* ‘from everywhere’; sometimes the universal counterpart to interrogatives is missing as with *skol’ko* ‘how many’, *začem* ‘what for.’

The derivation of various quantifiers which are formally based on interrogative pronouns by means of prefixes or postfixes is fully regular and productive. For instance, Russian can form certain (‘free choice’) quantifiers with the universal reading from interrogative ones using the postfix *ugodno*: *kto ugodno* ‘whoever’, *čto ugodno* ‘whatever’, *kogda ugodno* ‘whenever’, *gde ugodno* ‘wherever’, *kak ugodno* ‘however’, *počemu ugodno* ‘for any reason’. Their usage as universals is licensed by a modal operator, so that they can be rendered through English *any*-pronouns, cf. examples (from world wide web):

- (63) a. *Zdes’ možno otpravit’ čto ugodno za voznagraždenie.*
 Here possible send.INF what ever for reward
 ‘For a fee, one can send anything here.’ (= for all X, one can send X here for a fee)
- b. *Ja budu kem ugodno, liš’ by byt’ s toboj.*
 I be.FUT who ever just SUBJ be.INF with you
 ‘I will be anything just to be with you.’ (= for all properties X, if being X is required to be with you, I will be X)

Existential (‘indefinite’) pronouns are all based on interrogatives, derived with a prefix (*koe-*, *ne-*) or a postfix (*-libo*, *-to*, *-nibud’*).

14.15 Decreasing Quantifiers

14.15.1 Decreasing Determiners

Russian does have determiners which build decreasing NPs. Some intersective ones are problematic due to negative concord: any sentence with *ni odin* ‘not one’ or *nikakoj* ‘no’ has to contain a sentence-level negation *ne*, itself a decreasing operator, so that these quantifiers are preferably analyzed as denoting increasing determiners.¹⁷ Two options are open and have been advocated: existential quantifiers obligatorily interpreted under the scope of negation,¹⁸ and universal quantifiers obligatorily outscoping negation (Abels, 2005).

¹⁷ The structure of *ni odin* is transparent, a negative particle + ‘one’, similar to the Italian *nessuno*. However unintuitive this may sound, elements of this structure, along with other negative concord items, have been argued to denote increasing quantifiers (Giannakidou, 2006, Penka, 2011). *Ni* certainly is a negative element historically, related to the Proto-Indo-European negative root **n*. But with the development of strict negative concord, semantic negativity apparently bleached out of the meaning of *ni*.

¹⁸ This approach is explicit in many analyses of *ni*-items, e.g. Brown and Franks (1995); Pereltsvaig (2006a), and implicit in many others like Yanovich (2005) where quantifiers like *nikakoj* are interpreted as choice functions.

- (64) Ni odin student ne prišël na lekciju.
 NI one student not came on lecture
 ‘No students came to the lecture.’ (Intersective; negative concord)

Still, there are decreasing determiners that are not involved in negative concord. Examples:

- (65) a. Prisutstvovalo men’še pjati studentov.
 attended fewer five students
 ‘Fewer than five students attended.’
 b. Ne vse deti mnogo plačut.
 Not all children a lot cry
 ‘Not all children cry a lot.’ (Co-intersective)
 c. Men’še čtvrti studentov sdali èkzamen.
 Less quarter students passed exam
 ‘Less than a quarter of the students passed the exam.’ (Proportional)
 d. Ne bolee semi iz desjati morjakov kurjat sigary.
 not more seven from ten sailors smoke cigars
 ‘Not more than seven out of ten sailors smoke cigars.’

14.15.2 *Quantificational Negative Polarity Items*

The closest Russian correspondence to English quantificational NPIs are quantifier words with the postfix *-libo* (see also Section 14.1.12). They are licensed in decreasing contexts, with the exception that they usually do not co-occur with the same-clause sentential negation *ne* (in those contexts, a *ni*-word is used instead, as in (66a)). *-libo*-quantifiers are only possible in negative contexts if they are licensed by a different operator (e.g. the conditional operator) and take scope over negation, cf. (66b):

- (66) a. Ni Vanja, ni Petja nikogda ne byli v Moskve.
 Nor John nor Peter never not were in Moscow
 ‘Neither John nor Peter have ever been to Moscow.’
 b. Esli ni Vanja, ni Petja nikogda ne byli gde-libo...
 if nor John nor Peter never not were where-LIBO...
 ‘If there’s a place that neither John nor Peter have ever been to...’
 c. Ne bolee dvux uèenikov videli na progulke kakix-libo ptic.
 Not more two students saw on walk which-LIBO birds
 ‘Not more than two students saw any birds on the walk.’
 d. Men’še poloviny zdeš = nix studentov kogda-libo byli v Pinske.
 Less half here = ADJ students when-LIBO were in Pinsk
 ‘Less than half the students here have ever been to Pinsk.’

Indefinites of the *-nibud'* series are not NPIs but may be characterized as affective polarity items (Giannakidou, 1998). They are found in the scope of modals and distributive quantifiers (Pereltsvaig, 2006a, Yanovich, 2005).

14.16 Distribution of QNPs

14.16.1 Some Restrictions on QNP Distribution

QNPs in Russian can occur in all major grammatical functions, including subject, object, object of adposition, and possessor. This is constrained by the fact that some QNPs can only be used as nominative or accusative but not oblique case (as exemplified in (67d) by a QNP with the preposition *okolo* 'about'). Examples:

- (67) a. Vanja otvetil liš' na tri vopros = a na èksamene.
John answered just on three.ACC question = GENSG on exam
'John answered just three questions on the exam.'
- b. Ja otvetil na vse vopros = y, krome odnogo.
I answered on all.ACC questions = ACC except one
'I answered all but one question / all but one of the questions.'
- c. Maša otvetila na bol'sinstvo / tri četverti voprosov.
Mary answered on most / three quarters questions
'Mary answered most / three quarters of the questions.'
- d. Biblioteka poslala izveščenie neskol'kim / vsem
library sent notice several / all
studentam / primerno polovine / *okolo poloviny studentov.
students.DAT / approximately half.DAT / *about half.GEN students
'The library sent a notice to several students / all the students / about half the students.'
- e. Byli arestovany vrači dvux studentov.
were arrested doctors two.GEN students.GEN
'Two students' doctors were arrested.'
- f. Vrač každogo studenta vysoko kvalificirovan.
doctor every.GEN student.GEN highly qualified
'Every / Each student's doctor is well qualified.'
- g. Vanja oprosil vračej bol'sinstva studentov.
John interviewed doctors most.GEN students.GEN
'John interviewed most of the students' doctors.'
- h. Vanja oprosil okolo tysjači studentov.
John interviewed about thousand.GEN students.GEN
'John interviewed about a thousand students.'
- i. Vanja znakom s (*okolo) tysjačej studentov.
John acquainted with (*about) thousand.INSTR students.GEN
'John knows about a thousand students.'

- j. *Vanja znakom s okolo tysjači studentov.
 John acquainted with about thousand.GEN students.GEN
 ‘John knows about a thousand students.’ (s assigns instrumental case, and an *okolo*-modified QNP can only function as nominative, accusative, or genitive)

14.16.2 Dislocated QNPs

QNPs generally occupy the same positions as definite NPs. Wh-quantifiers, fronted to the sentence edge, are one natural class of exceptions. Overtly negated NPs occur either topicalized (sentence-initially) or in the sentence-final position; in the latter case, they always bear the nuclear pitch accent:

- (68) a. Ne každýj student otvetil na každýj vopros.
 not every student answered on every question
 ‘Not every student answered every question.’
 b. Vanja otvetil ne na každýj vopros.
 John answered not on every question
 ‘John answered not every question.’

14.17 Scope Ambiguities

In Russian, scope ambiguities do arise when two or more arguments of a given predicate can be bound simultaneously by QNPs, but the preferred scope follows the surface order of QNPs:

- (69) a. Nekotoryj redaktor pročel každuju rukopis'.
 some editor read everj manuscript
 Some editor read every manuscript (Scope ambiguous in Russian, like its English counterpart)
 b. Každuju rukopis' pročel nekotoryj redaktor.
 every manuscript read some editor
 Some editor read every manuscript (Scope ambiguous in Russian, as its English counterpart)

Two scope readings are available:

- Subject Wide Scope (SWS, much more readily available for (69a) than for (69b)): There is one editor *x* such that *x* read all the manuscripts.
- Object Wide Scope (OWS, much more readily available for (69b) than for (69a)): Each manuscript is such that at least one editor read it (possibly different editors read different manuscripts).

- (70) Tri prepodavatelja proverili sto rabot.
 three instructors graded 100 exams
 Three instructors graded 100 exams.

As in the English translation, both SWS and OWS readings are marginal; the group reading is the prominent one:

- SWS: There are 3 instructors each one of which graded 100 exams.
- OWS: There are 100 exams such that each instructor graded them.
- Group: There is a group of 3 instructors and a group of 100 exams and the group of instructors graded the group of exams.
- Cumulative: There is a group of 3 instructors and each of them graded some exams. The total number of graded exams is 100.

Modified numerals tend to force narrow scope with regard to a preceding QNP:

- (71) Každij student pročel odnu p'esu Šekspira na kanikulax.
 each student read one play Shakespeare.GEN on vacation
 Each student read one Shakespeare play over the vacation (Scope ambiguous;
 only SWS if *odin* receives a phrasal accent)
- (72) Každij student pročel ne menee odnoj p'esy Šekspira.
 each student read not less one play Shakespeare.GEN
 Each student read at least one Shakespeare play (Just SWS reading)

The scope of negative concord items, tied to the scope of sentential negation, follows the surface order of QNPs. The following examples are interpreted with SWS:

- (73) a. Ni odin politik ne poceloval každygo reběnka na jarmarke.
 nor one politician not kissed every baby on fair
 'No politician kissed every baby at the fair.' (Just SWS)
- b. Boľšinstvo politikov ne pocelovalo ni odnogo reběnka na jarmarke.
 Most politicians not kissed nor one baby on fair
 Most politicians kissed no baby at the fair (SWS; but focusing the object QNP makes inverse scope possible, as in the question-answer pair *How many babies did most politicians kiss at the fair? – Most politicians kissed NO babies at the fair.*)
- c. Liš' odin student ne otvetil ni na odin vopros na èksamene.
 just one student not answered nor on one question on exam
 Just one student answered no question on the exam (SWS only).
- d. Vse studenty, krome odnogo, otvetili po krajnej mere na odin vopros na èksamene.
 all students except one answered at ultimate measure on one question on exam
 All but one student answered at least one question on the exam. (SWS only; OWS somewhat facilitated by focusing the object QNP as expressed by pitch accent on *na odin*)

As in English, different choices of D-quantifier lend themselves to different judgments of scope (non-)ambiguity even when the Ds are otherwise near synonyms. Namely, among universal quantifiers, the distributive *každýj* more easily gets wide scope than the collective *vse*:

- (74) a. Nekotoryj / Kako-j-to redaktor pročel vse rukopisi.
 some editor read all manuscripts
 Some editor read all the manuscripts (Just SWS)
- b. Nekotoryj / Kako-j-to redaktor pročel každyju rukopis'.
 some editor read every/each manuscript
 Some editor read every/each manuscript (both scope ambiguous)
- (75) a. (Na stole ležala) fotografija vse studentov.
 (on the table lay) picture all students.GEN
 A picture of all the students (was on the table) [Meaning conveyed:
 one picture, many students]
- b. (Na stole ležala) fotografija každygo studenta.
 (on the table lay) picture every student.GEN
 A picture of each student (was on the table) [Possibly as many pictures
 as students; some but not all of them may have joint pictures]

14.17.1 Scope Ambiguity Asymmetries in Wh-Questions

Wh-quantifiers outscope all other quantifiers in the question, except for *každyj* 'every, each,' which can scope above the wh-quantifier, giving rise to pair list readings. For example, the first two questions below just have a SWS reading.

- (76) a. Kako-j student otvetil na bol'sinstvo voprosov (na èkzamene)?
 which student answered on most questions (on the exam)?
 Which student answered the most (the largest number of) questions
 (on the exam)?
- b. Kako-j student otvetil na vse voprosy (na èkzamene)?
 which student answered on all questions (on the exam)?
 Which student answered all the questions (on the exam)?
- c. Na kako-j vopros otvetil každyj student?
 on which question answered each student
 Which question did each student answer? (Both SWS and OWS)
 SWS: For each student x, identify the question x answered
 OWS: Identify a unique question y with the property that each student
 answered y.
- d. Na kako-j vopros otvetili vse studenty?
 on which question answered all students
 Which question did all the students answer? (Just OWS)

14.17.2 Self Embedding of QNPs

The choices of Dets on the whole NP and on the embedded NP are fairly independent:

- (77) (kako_j-to) drug každogo senatora, dva druga každogo
 (some) friend every senator.GEN, two friends every
 senatora, každyj drug každogo senatora
 senator.GEN, every friend every senator.GEN
 ‘a friend of every senator, two friends of every senator, every friend of
 every senator’

These expressions are in principle scope ambiguous. They are preferably interpreted with possessor wide scope ‘for every senator, two of his friends’ or ‘for every senator *y*, a/some/every friend of *y*;

possessor narrow scope readings ‘some *x* / every *x* such that *x* is a friend of every senator’ and ‘two people each of whom is a friend of every senator’ are also available in (77).

14.17.3 A- and D-Quantifiers

Scope ambiguity between nominal and verbal quantifiers is possible:

- (78) Dva mal’čika speli triždy.
 Two boys sang three times
 ‘Two boys sang three times.’

The preferable reading of the last example is the group reading ‘there were two boys who sang three times together.’ However, both the SWS reading ‘there are two boys who sang three times each’ and the OWS reading ‘on three occasions there were two boys who sang’ are available.

14.18 One to One Dependency: The Indexing Function of Universal Quantifier

Determiners *vsě bol’še* ‘more and more’ and *vsě men’še* ‘less and less’ involve quantification over times. Sometimes the domain of quantification is expressed in a prepositional phrase with the preposition *s* ‘with,’ e.g. *s každyj godom* ‘every year,’ *so vremenem* ‘over time,’ *s vozrastom* ‘with age’ = ‘as one grows up.’ Overt quantifiers other than the universal *každyj* do not appear in the domain of quantification:

- (79) S každyj godom vsě bol’še ljudej pokupajut Tojotu.
 with every year all more people buy Toyota
 ‘More people buy Toyotas every year’ (but not **s nekotoryj godom*
 ‘*some year’, **s pjat’ju godami* ‘*five years’)

Another construction that conveys a meaning similar to that of the preposition *s* is ‘*iz* + measure + *v* + measure’:

- (80) *Iz goda v god vsē bol’she ljudej pokupajut Tojotu.*
 from year to year all more people buy Toyota
 ‘More people buy Toyotas every year’

The usual way to use the domain of the universal *každyj* as an index set for another quantifier over individuals is to use construction *na* + NP_{Acc} + *prixodit’sja* + NP_{Nom}:

- (81) *Na každygo žitelja respubliki prixoditsja 31,5 hektara zemli.*
 on every resident republic.GEN corresponds 31.5 hectares of land
 ‘For each resident of the republic, there are 31.5 hectares of land.’

14.19 Rate Phrases

To indicate rate, a preposition *v* + measure_{Acc} is used:

- (82) a. *V nedelju ja probegaju pjat’desjat kilometrov.*
 In week.Acc I run fifty.Acc kilometers
 ‘I run fifty kilometers a week.’
 b. *V srednem v den’ prixodit pjat’- sem’*
 In average in day.Acc comes five.NOM - seven.NOM
 posetitelej.
 visitors
 ‘On average, 5–7 visitors come daily.’ (NCRL)

Rate phrases are constructed in the form ‘amount A + *v* + measure m_{Acc}’, e.g. *metr v sekundu* ‘a meter per second’. For adverbial usage, a rate phrase (in nominative) is subordinated to the phrase *so skorost’ju* ‘with a speed (of)’ or *na skorosti* ‘at the speed (of)’ when indicating motion speed, e.g.:

- (83) *Ètot poezd edet so skorost’ju četyresta kilometrov v čas*
 this train goes with speed 400.NOM kilometers.PAUCAL in hour.Acc
 ‘That train is traveling at 400 kilometers per hour.’

No preposition is required for rate phrases with *raz* ‘time’ or adverbs in *-ždy* (see Section 14.2.4):

- (84) *Vanja umyvaetsja dvaždy / dva raza v den’ / každyj den’.*
 John washes.face twice / two times in day / every day
 John washes his face twice a day / three times a day / every day

14.19.1 ‘Every *x* and *y*’

Russian, like English, uses combinations of determiners with conjunction *i* ‘and’ to form quantifiers out of multiple noun phrases. Russian uses *i* in negative contexts where English may use *or* in analogous constructions. Such coordination may be interpreted as boolean if the common nouns are assumed to be not of type (et) but of the more complex (lifted) type ((et,(et,t)),(et,t))¹⁹:

- (85) a. Každij mužčina i ženščina ... platjat po šest' šillingov v god
 every man and woman pay PO six shillings in year
 ‘Every man and woman pays six shillings a year’ (NCRL)
- b. Každij gubernator i mër soderžat ogromnoe množestvo ...
 Every governor and mayor support great set
 gazet
 newspapers.GEN
 ‘Every governor and mayor support an enormous number of
 newspapers.’ (adapted from NCRL, = ‘every governor and every
 mayor...,’ ≠ ‘everyone who is both a governor and a mayor...’)
- c. Nikakogo pistoleta i dubinki u nego net!
 no gun and truncheon at him is.not
 ‘He has no gun or truncheon!’ (NCRL)

14.20 Miscellaneous

14.20.1 Structural Complexity of Quantifiers

The following quantifier stems are synchronically monomorphemic: *k-* ‘who,’ *č-* ‘what,’ *vs-* ‘all,’ *každ-* ‘every,’ *ljub-* ‘any,’ numerals 0–10, 40, 100, 1000, *mnog-* ‘many, lots,’ *mal-* ‘few,’ *pol-* ‘half,’ *poltor-* ‘one and half,’ *ob-* ‘both.’

The following quantifiers, in addition to the ones with stems listed above, are just one phonological word. Note that prepositions, negative particle *ne*, and pronoun series markers do not form phonological words on their own but plausibly add more grammatical structure:

- *kakoj* ‘which,’ *skol'ko* ‘how many,’ *kogda* ‘when,’ *kak* ‘how,’ *gde* ‘where,’ *kuda* ‘to where,’ *otkuda* ‘from where,’ *dokuda* ‘till where,’ *začem* ‘for what purpose,’ *počemu* ‘why;’

¹⁹ This type lift may be motivated if we assume that *ili* ‘or’ is a positive polarity item (Szabolcsi, 2004). A positive polarity item could not be used in the contexts of determiners like *každyj* since these determiners create a downward entailing environment in their noun phrase. Note however that similar examples are found in English where *or* is arguably not a positive polarity item.

- *vsjakij* ‘every,’ *vsegda* ‘always,’ *vezde* ‘everywhere,’ *vsjudu* ‘to everywhere,’ *otovsjudu* ‘from everywhere;’
- *nikto* ‘nobody,’ *ničto* ‘nothing,’ *nikakoj* ‘no,’ *niskol’ko* ‘not a single,’ *nikogda* ‘never,’ *nikak* ‘no way,’ *nigde* ‘nowhere,’ *nikuda* ‘to nowhere,’ *niotkuda* ‘from nowhere,’ *nizačem* ‘for no purpose;’
- *kto-to* ‘somebody,’ *čto-to* ‘something,’ *kakoj-to* ‘some,’ *skol’ko-to* ‘some quantity of,’ *kogda-to* ‘sometime,’ *kak-to* ‘in some way,’ *gde-to* ‘somewhere,’ *kuda-to* ‘to somewhere,’ *otkuda-to* ‘from somewhere,’ *začem-to* ‘for some purpose,’ *dokuda-to* ‘till somewhere,’ *počemu-to* ‘for some reason;’
- other series of quantifiers formed from interrogatives with prefixal and postfixal clitics *koe-*, *-libo*, *-nibud’*, *ne-*²⁰;
- *bol’še* ‘more,’ *men’še* ‘less;’
- *ni odin* ‘not one,’ *nemnogo*, *nemnogie* ‘few,’ *mnogočislennyj* ‘numerous,’ (*ne*) *dostatočno* ‘(in)sufficiently many;’
- numerals 11–20, 30, 50, 60, 70, 80, 90, 200, 300, 400, 500, 600, 700, 800, 900;
- simple numerals with unaccented prepositional ‘modifiers’, including distributive *po*: *do pjati* ‘up to five’, *po dva* ‘two apiece’ etc.
- *inogda* ‘sometimes,’ *dvaždy* ‘twice,’ *triždy* ‘three times,’ *četyreždy* ‘four times;’ obsolete *odnaždy* ‘once’ and *mnogaždy* ‘many times;’
- *ne vse* ‘not everybody / not all,’ *ne vsě* ‘not everything / not all,’ *ne vsyakij* ‘not every,’ *ne vsegda* ‘not always,’ *ne vezde* ‘not everywhere,’ *ne vsjudu* ‘not to everywhere,’ *ne otovsjudu* ‘not from everywhere;’
- *bol’šinstvo* ‘a majority of,’ *men’šinstvo* ‘a minority of,’ *polovina* ‘half,’ *tret’* ‘third,’ *četvert’* ‘quarter;’
- (*ne*)*často* ‘(not) often,’ *v osnovnom* ‘mostly,’ *obyčno* ‘usually,’ *redko* ‘seldom,’ *v celom* ‘generally.’

- (1) Russian has a monomorphemic stem for ‘all’ in *vse* ‘everybody, all’ and *vsě* ‘everything, all.’
- (2) Russian has a monomorphemic stem *od(i)n-* for ‘one.’ While there is no special indefinite article and bare noun phrases can be interpreted as indefinite, *odin*, as in English, is sometimes used to express indefiniteness.
- (3) Russian has a monomorphemic proportional determiner *pol* ‘half’. However, it is a clitic rather than a separate phonological word. *Často* ‘often’ is not monomorphemic since it contains the adverb suffix *-o*.
- (4) Russian has two monomorphemic value judgment quantifier stems, *mnog-* ‘many’ and *mal-* ‘few.’
- (5) Russian lacks a monomorphemic determiner translating *no*.
- (6) Russian has at least four universal D-quantifiers: *každyj*, *vsjakij* ‘each, every,’ *vse* ‘all (the),’ *ljuboj* ‘any’. *Vse* is the only collective one. Determiner *vsjakij* is reported (Padučeva, 1989a) to quantify only over infinite sets. ‘Infinite’ here should be probably understood as ‘open-ended’. *Vsjakij* is

²⁰ All the prefixal clitics can be separated from the stem by a preposition.

thus similar to the free choice uses of English *any*. *Vsjakij* is somewhat archaic, restricted mostly to mathematical usage.

- (7) It is hard to tell whether A-quantifiers are morphosyntactically more complex than D-quantifiers in the case of *často* ‘frequently’ and *redko* ‘rarely,’ related to *častyj* ‘frequent’ and *redkij* ‘rare.’ Where adjectives have agreement markers (e.g. *-yj* for Nominative singular masculine) adverbs place a constant adverbial suffix *-o*. *Dvaždy* ‘twice,’ *triždy* ‘three times,’ *četyreždy* ‘four times’ are built from simpler *dva* ‘two,’ *tri* ‘three,’ *četyre* ‘four.’ *V osnovnom* ‘mostly’ has an internal structure of a prepositional phrase, and *n raz* ‘n times,’ *mnogo raz* ‘many times’ have the internal structure of an NP.

14.20.2 *Only*

The particle *tol’ko* ‘only’ functions like English *only*, except it cannot semantically combine with a proper subconstituent of its syntactic scope:

- (86) a. Tol’ko Vanja polučil priz.
 Only John got prize
 ‘Only John got a prize.’
- b. Tol’ko studenty prisutstvovali na ceremonii.
 Only students were on ceremony
 ‘Only students attended the ceremony.’
 (= everybody who attended the ceremony were students)
- c. Petja tol’ko pil pivo.
 Peter only drank beer
 ‘All Peter did was drink beer.’
 (not ‘All that Peter drank was beer,’ a possible meaning in English)

In addition to *tol’ko*, the meaning ‘only’ can be rendered by the particle *liš’* or the combination of the two *tol’ko liš’*

- (87) a. Botaniki priznajut liš’ 4 ‘xorošix’ vida astrofitumov.
 botanists recognize just 4 ‘good’ species astrophyta.GEN
 ‘Botanists recognize only 4 ‘true’ species of astrophyta.’ (NCRL)
- b. No vsë èto liš’ tol’ko raz v godu.
 But all this just only time in year
 ‘But all this happens only one time in a year.’ (NCRL)

Determiner *odin* ‘one’ is yet another way to express ‘only.’ Unlike the particles *tol’ko* and *liš’*, *odin* combines only with nouns and agrees with them in case, number, and gender:

- (88) a. Arestovali odnogo Andreja.
 Arrested one.ACCSGM Andrew.ACC.
 ‘Only Andrew was arrested.’ (NCRL)
- b. U nas v sem’e odni devčonki.
 at us in family one.NOMPL girl.NOMPL
 ‘There are only girls in our family.’ (NCRL)
- c. pitat’ = sja odnimi pel’menjami
 feed.INF = REFL one.INSTRPL dumpling.INSTRPL.
 ‘to eat only dumplings’ (NCRL)

14.21 Additions

14.21.1 *Obscene Quantifiers*

Some quantifier expressions in Russian are idioms based on words with emotional connotations, more specifically, on certain masculine stems. These include: *čërt* ‘devil,’ tabooed *xuj* ‘penis,’ and euphemisms of the latter: *xren* ‘horseradish,’ *xer* ‘letter X,’ *fig* ‘fig’ (*xer* and *fig* are obsolete in their literal meanings).

The following models freely combine with these words giving quantifiers: *ni Xá* ‘nothing,’ ‘not at all;’ *do Xá* or *do Xá* ‘plenty;’ *na Xá* ‘what for (usually in rhetorical questions);’ *kakogo Xá* ‘why (usually in rhetorical questions).’ In all these models the noun is in genitive singular but the stress placement is determined by the construction and may be different from the usual stress in genitive. Examples:

- (89) a. Kakogo xér = a ty pritaščila eë sjuda?
 which.GEN xer = GEN thou dragged her here
 ‘Why did you take her here?’ (NCRL)
- b. Ix tam v èto vremja do čërt = a.
 they there in this time till devil.GEN
 ‘There are plenty (of them) there at this time.’ (NCRL)
- c. Ni čërt = á on ot menja ne polučit.
 NI devil = GEN he from me not get.FUT
 ‘He won’t get anything from me.’ (NCRL)

Rarely, the feminine *pizda* ‘vulva’ is found in similar constructions: *ni pizdy* (genitive) ‘nothing,’ *kakoj pizdy* (genitive) ‘why.’

14.21.2 Hybrid Coordination

Russian allows coordination of constituents (arguments or adjuncts) of different categories given that they include the same type of quantifier. Semantically, they can be analyzed as resumptive quantifiers of that type (i.e. quantifiers over pairs or tuples):

- (90) a. Vsem, vezde i vse do lampočki
 everyone.DAT everywhere and everything.NOM don't care
 'nobody cares about anything anywhere'
 = for all triples (x,y,z) [x doesn't care about y in the place z]
- b. Kto-to i kogo-to obidel
 someoneNOM and someoneACC offended
 'someone offended somebody' = for some pair (x,y) [x offended y]
- c. Ni=kto i ni ot kogo ix ne skryvaet
 NI=who and NI from whom them not conceals
 'nobody conceals them from anyone'
 = for no pair (x,y) [x conceals them from y]
- d. Kto i kogda tebe skažet pravdu?
 who and when you tell truth
 'who will tell you the truth and when?'
 = for what pair (x,y) [x will tell you the truth at moment y]

See Chaves and Paperno (2007); Kazenin (2000), Paperno (2009) for more syntactic and semantic data.

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Chapter 15

Quantification in Telugu

Ravi Ponamgi

15.1 Introduction

Telugu is a Central Dravidian language spoken by some 70 million people, mostly from the South Indian state of Andhra Pradesh. Like other Dravidian languages it has a verb final (head final) typological profile, exhibiting significant pre-verbal word order freedom. (In our Romanized transcription, upper case T, D, L, R, N indicate the corresponding retroflex sounds, but proper names have their first letter capitalized regardless of whether they are retroflex or not. Also, ‘r’ in our usage is actually an alveolar tap everywhere except word-initially. Lastly, a colon indicates length after a vowel and gemination after a consonant. Abbreviations used in glosses are listed at the end of this article.) A brief typological profile of Telugu word order is presented below; for more background on Dravidian, see works by Andronov (1965), Caldwell (1856), Krishnamurti (1969), Purushottam (1996), and Subramanyam (1969).

SOV order

- (1) Ram pīl:ā-nī ču:s-e:-Rū
Ram.NOM girl-ACC see-PERF-3SG.MASC.FAM
‘Ram saw the girl.’

CP objects:

- (2) Sita Ram vāč:-e:-Rū ānī čēp:-īn-dī
Sita.NOM Ram.NOM come-PERF-3SG.MASC.FAM that tell-PERF-3SG.FEM.FAM
‘Sita said that Ram came.’

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Postpositions:

- (3) Ram tǎlŭpŭ vĕnāk:a:lǎ vĕtĭk-e:-Rŭ
 Ram.NOM door behind search-PERF-3SG.MASC.FAM
 ‘Ram searched behind the door.’

Prenominal Genitives:

- (4) Ram Sita-jŏk:ǎ car-nĭ dŏngĭlĭnč-e:-Rŭ
 Ram.NOM Sita-GEN car-ACC steal-PERF-3SG.MASC.FAM
 ‘Ram stole Sita’s car.’

Postverbal Auxiliaries:

- (5) Ram pĭl:ǎ-nĭ ču:Rǎ-gǎlǎ-Rŭ
 Ram.NOM girl-ACC see-can-3SG.MASC.FAM
 ‘Ram can see the girl.’

This paper is divided into three main sections:

1. A definition and survey of three basic classes of (1,1) quantifiers.
2. An illustration of a variety of notable quantifier phenomena.
3. A brief account of classes of quantifiers other than the (1,1) type.

15.2 Three Basic Classes of (1,1) Quantifiers

(1,1) quantifiers can be classified as . . .

- generalized existential (intersective) quantifiers
- generalized universal (co-intersective) quantifiers
- proportional quantifiers

. . . each group of which consists of both D-quantifiers and A-quantifiers.

15.2.1 Generalized Existential (Intersective) Quantifiers

Table 15.1 A few generalized existential (intersective) quantifiers

Monomorphemic	Multimorphemic or Phrasal	
<i>D-Quantifiers</i>	<i>D-Quantifiers</i>	<i>A-Quantifiers</i>
‘a’ [ōkā]	Where <i>n</i> represents any cardinal number: <i>n</i> kāNTe: ēk:ūvā <i>n</i> than more ‘more than <i>n</i> ’	āp:ūrū-āp:ūrū then-then ‘sometimes’
‘some/several’ [kōntā-māndī] – CT.HUM.PL [kōn:ī] – CT.NONHUM.PL [kōntā] – MS	Where <i>x</i> represents any count noun: kōn ī x-lū e: some.CT x-PL only ‘few <i>x</i> s’	Where <i>n</i> represents any cardinal quantifier, including numbers and ‘some’, ‘many’, etc.: <i>n</i> sa:rī-lū <i>n</i> time-PL ‘ <i>n</i> times’
‘many/much’ [ča:la:], [bōLDū], [ēk:ūvā]	Where <i>n</i> represents any cardinal number: <i>n</i> e: <i>n</i> only ‘only <i>n</i> ’	ēp:ūrū: +[verbal negation] always (negation) ‘never [verb]’
‘too many/much’ [ēk:ūvā]	Where <i>n</i> represents any cardinal number: kāni:sāmū <i>n</i> at least <i>n</i>	
‘little (mass sense)’ [kōñčāmū] – MS	Where <i>n</i> represents any cardinal number: <i>n</i> kāNTe: ēk:ūvā ... +[verbal negation] <i>n</i> than more ... negation] ‘[not more than]/[at most]’	
‘(too) few/little’ [tāk:ūvā] ‘how many’ [ēn:ī] ‘which’ [e:]		

Note the absence of monomorphemic existential *A-quantifiers*.

15.2.1.1 D-Quantifiers

The generalized existential D-quantifiers consist largely of cardinal quantifiers:

- (6) ne:nū bāl:ā-mi:dā Churchill-dī ōkā fōTo: ču:s-e-nū
 1SG.NOM table-SUP Churchill-GEN a (but specifically one) picture see-PERF-1SG
 ‘I saw a/one picture of Churchill on the table.’

- (7) kōntā-māndī pī:ā-lū īNTī-lo: pa:Rū-tūna:-rū
 some-HUM child-PL.NOM house-LOC sing-PROG-3PL.HUM
 ‘Some children are singing in the house.’
- (8) kōntā-māndī a:Rā-va:L-Lū ūd:jo:gāmū ti:s-kūn:-na:-rū
 several-HUM female-one*-PL.NOM job.ACC take-REFL-PERF-3PL.HUM
 ‘Several women took the job.’
- *Pronominal ‘one’ (+human) is not a cardinal number.

General Form of Existential Sentences

Existential sentences in Telugu have the following shape: restricting postpositional phrase + subject NP + ‘exist’ (inflected for polarity, tense, number, and animacy).

- (9) class-lo: īp:ūRū āīdū-gūrū a:Rā-va:L-Lū ūn-na:-rū
 class-LOC now five-HUM female-one-PL.NOM exist-PERF/IMP-3PL.HUM
 ‘There are five women in the class now;
- po:-īnā sāmvaṣṣārāmū pādī-māndī ūn-na:-rū/ūND-e:-rū//ūND-e:-va:-rū
 go-REL.PERF year ten-HUM exist-PERF-3PL.HUM
 last year there were ten (women in the class).’
- (10) īp:ūRū class-lo: a:Rā-va:L-Lū ēvārū:- le:-rū
 now class-LOCATE female-one-PL.NOM anyone-EMPH exist.NEG.IMP-3PL.HUM
- ka:ni: po:-īnā sāmvaṣṣārāmū ča:la:-māndī ūN-De:va:-rū
 but go-REL.PERF year many-HUM exist-PERF-3PL.HUM
 ‘There are no women in the class now, but last year there were many.’
- (11) īNTī-lo: ēvār-o: ūn-na:-rū
 house-LOC anyone.NOM-some be-PERF-3PL.HUM
 ‘There is someone in the house.’
- (12) īNTī-lo: ēvārū ūn-na:-rū
 house-LOC who.NOM be-PERF-3IND.HUM
 ‘Who is in the house?’
- (13) īNTī-lo: ēvārū āj:-īna: ūn-na:-rū a:
 house-LOC anyone.NOM happen-whether be-PERF-3IND.HUM QP
 ‘Is there anyone in the house?’

- (14) ĩNTĭ-lo: ěvāru: le:-rũ
 house-LOC anyone.NOM exist.NEG-3IND.HUM
 ‘There isn’t anyone in the house.’

Existential Sentence Characteristics

Affirmative

The pronominal part of the singular affirmative existential sentence, (15) is built morphologically from the interrogative, (16):

- (15) ěvār-o: ũn-na:-rũ
 anyone.NOM-some be-PERF-3IND.HUM
 ‘There is someone.’

- (16) ěvārũ ũn-na:-rũ
 who.NOM be-PERF-3IND.HUM
 ‘Who is there?’

But the plural, lacking such a pronoun, merely has in common the verb ‘exist-PERF/IMPF-3.IND’ (in its proper inflected form).

- (17) a:Ră-va:L-Lũ ũn-na:-rũ
 female-one-PL.NOM be-PERF-3IND.HUM
 ‘There are women.’

Negative

The pronominal part of the singular negative existential sentence, (18), is built morphologically from the interrogative, (19):

- (18) āk:ăRă ěvārũ:- le:-rũ
 there anyone.NOM-EMPH exist.NEG-3IND.HUM
 ‘There is no one there.’

- (19) āk:ăRă ěvārũ ũn-na:-rũ
 there who.NOM be-PERF-3IND.HUM
 ‘Who is there?’

It is the vowel lengthening of ěvārũ: in (18) which crucially distinguishes it from ěvārũ in (19).

The plural negative existential sentence features an NPI determiner which also functions as an interrogative:

- (20) e: a:Ră-va:L-Lũ-: le:-rũ
 any female-one-PL.NOM-EMPH exist.NEG-3PL.HUM
 ‘There are no women.’
- (21) e: a:Ră-va:L-Lũ ũn-na:-rũ
 which female-one-PL.NOM exist-PERF-3PL.HUM
 ‘Which women are there?’

It should be noted that negative existentials have a special negation form distinct from that in simple declarative sentences. Compare:

- (22) ĩNTĩ-lo: e: kũk:ă-lũ le:-vũ
 house-LOC any dog-PL.NOM exist.NEG-3PL.NONHUM
 ‘There aren’t any dogs in the house.’
- (23) ne:nũ ĩNTĩ-lo: e: kũk:ă-lă-nĩ çu:Ra-le:dũ
 1SG.NOM house-LOC any dog-PL-ACC see-NEG.PERF
 ‘I didn’t see any dogs in the house.’

Possession

The existence predicate in Telugu is also used to express possession, with an ADESSIVE postposition indicating the possessor:

- (24) ĩNTĩ-lo: Dăb:ũ ũn-dĩ
 house-LOC money.NOM exist.IMPV-3SG.NONHUM
 ‘There is money in the house.’
- (25) va:Rĩ-dăg:ĩră Dăb:ũ ũn-dĩ
 3SG.MASC.FAM-ADES money.NOM exist.IMPV-3SG.NONHUM
 ‘He has money.’

Pivot Position

- (26) class-lo: äĩdũ-gũrũ a:Ră-va:L-Lũ ũn-na:-rũ
 class-LOC five-HUM female-one-PL.NOM exist-PERF-3PL.HUM
 ‘There are five women in the class.’

- (27) *āḍḍū-gūrū a:Rā-va:L-Lū class-lo: ũn-na:-rū*
 five-HUM female-one-PL.NOM class-LOC exist-PERF-3PL.HUM
 ‘Five women are in the class.’

(27) specifies the location of the QNP subject, (26) an existential claim about it. Universal quantifiers are excluded as pivots in English but permitted in Telugu:

- (28) *class-lo: āṇḍārū vīdja:rthū-lū-: ũn-na:-rū*
 class-LOC all.CT.HUM.PL student-PL.NOM-EMPH exist-PERF-3PL.HUM
 *‘There are/exist all of the students in the class.’

- (29) *āṇḍārū vīdja:rthū-lū-: class-lo: ũn-na:-rū*
 all.CT.HUM.PL student-PL.NOM-EMPH class-LOC exist-PERF-3PL.HUM
 ‘All of the students are in the class.’

Similarly, proportional quantifiers are somewhat awkward in pivot position in English but permitted naturally in Telugu:

- (30) *class-lo: ča:la:-māṇḍī vīdja:rthū-lū ũn-na:-rū*
 class-LOC most.CT.HUM.PL student-PL.NOM exist-PERF-3PL.HUM
 ‘There are/exist most of the students in the class.’

- (31) *ča:la:-māṇḍī vīdja:rthū-lū class-lo: ũn-na:-rū*
 most.CT.HUM.PL student-PL.NOM class-LOC exist-PERF-3PL.HUM
 ‘Most of the students are in the class.’

Numerals and Modified Numerals

- (32) *class-lo: āḍḍū-gūrū a:Rā-va:L-Lū ũn-na:-rū*
 class-LOC five-HUM female-one-PL.NOM exist-PERF-3PL.HUM
 ‘There are five women in the class.’

- (33) *āḍḍū-gūrū a:Rā-va:L-Lū class-lo: ũn-na:-rū*
 five-HUM female-one-PL.NOM class-LOC exist-PERF-3PL.HUM
 ‘Five women are in the class.’

The numerical determiners may be modified:

Postpositional:

- (34) *āḍḍū-gūrū kāṅTe: ēk:ūvā/tāk:ūvā-māṇḍī a:Rā-va:L-Lū*
 five-HUM than more/fewer-HUM female-one-PL.NOM
 class-lo: ũn-na:-rū
 class-LOC exist-PERF/IMPF-3PL.HUM
 ‘More/fewer than five women are in the class.’

- (35) *āḍḍū-gūrū-kī-: pādī-māṇḍī-kī-: māḍ^hjā a:Rā-va:L-Lū*
 five-HUM-DAT-EMPH ten-HUM-DAT-EMPH between female-one-PL.NOM
 class-lo: *ūn-na:-rū*
 class-LOC exist-PERF/IMP-3PL.HUM

‘Between five and ten women are in the class.’

- (36) *kāč:ītaṅ-ga:/kāni:sāmū/īñčūmīñčū-ga: āḍḍū-gūrū a:Rā-va:L-Lū*
 exact-ly/at least/approximate-ly five-HUM female-one-PL.NOM
 class-lo: *ūn-na:-rū*
 class-LOCATE exist-PERF/IMP-3PL.HUM

‘Exactly/at least/approximately five women are in the class.’

The particle *e:* occurs postnominally:

- (37) *āḍḍū-gūrū a:Rā-va:L-Lū e:*
 five-HUM female-one-PL.NOM only/just
 class-lo: *ūn-na:-rū*
 class-LOC exist-PERF/IMP-3PL.HUM

‘Only/just five women are in the class.’

- (38) *kōntā-māṇḍī a:Rā-va:L-Lū class-lo: ūn-na:-rū*
 Several/some-CT.PL.HUM female-one-PL.NOM class-LOC exist-PERF/IMP-3PL.HUM
 ‘Several/some women are in the class.’

Monomorphemic *no*

Telugu does not have a monomorphemic ‘no’. Rather, the NPI ‘any’ co-occurs with verbal negation to denote ‘no’. Additionally, the vowel lengthening morpheme representing emphasis is required – appended to either the noun itself or the ACC morpheme (obligatory for animate beings) – in co-occurrence with ‘any’ [e:].

- (39) *e: a:Rā-va:L-Lū-: class-lo: le:-rū*
 any female-one-PL.NOM-EMPH class-LOC exist.NEG-3PL.HUM
 ‘No women are in the class.’

Value Judgment Quantifiers: ‘(Too) Many/Much’ and ‘(Too) Few/Little’

- ‘many/much’ [ča:la:]/[bōLDū]/[ėk:ūvā]:

(40) Ram ča:la:-māndī/bōLDū-māndī/ėk:ūvā-māndī
 Ram.NOM many-HUM
 māñčī vīdja:rthī-lā-nī interview če:s-e:-Rū
 good student-PL-ACC interview do-PERF-3SG.MASC.FAM
 ‘Ram interviewed many good students.’

ėk:ūvā ‘(too) many/much’ conveys both the sense of ‘many/much’ as well as ‘too many/much’, depending on the speaker’s intent:

(41) ěk:ūvā-māndī vīdja:rthū-lū nāv:-e:-rū
 (too) many-HUM student-PL.NOM laugh-PERF-3PL.HUM
 ‘(Too) many students laughed.’

Regarding the following sentences, the reader should bear in mind the significant semantic difference between ‘few/little’ and ‘a few/a little’, the former constituting a value judgment, but the latter merely an existential quantity. (The symbol ś is a ‘sh’, but more alveolar than the familiar palatal).

(42) Ram tāk:ūvā-māndī a:Rā-va:L-Lā-nī ču:s-e:-Rū
 Ram.NOM few-HUM female-one-PL.NOM-ACC see-PERF-3SG.MASC.FAM
 ‘Ram saw few women.’

(43) Ram tāk:ūvā sārūkū-lū kōn-kūn-na:-Rū
 Ram few-NONHUM thing-PL.ACC buy-REFL-PERF-3SG.MASC.FAM
 ‘Ram bought few things.’

(44) tāk:ūvā vārṣāmū pāR-īn-dī
 little.NONHUM rain.NOM fall-PERF-3SG.NONHUM
 ‘Little rain fell.’ OR ‘It rained little.’

Analogous to ‘(too) many/much’ *ėk:ūvā*, *tāk:ūvā* conveys both the sense of ‘few/little’ as well as ‘too few/little’, depending on the speaker’s intent:

(45) tāk:ūvā-māndī vīdja:rthū-lū nāv:-e:-rū
 (too) few-HUM student-PL.NOM laugh-PERF-3PL.HUM
 ‘(Too) few students laughed.’

- not enough = [tāgināntā-māndī. .(verb)-le:dū]:

(46) tāgināntā-māndī vīdja:rthū-lū nāv:ā-le:dū
 to be enough-REL.PERF student-PL.NOM laugh-NEG.PERF
 ‘Not enough students laughed.’

Interrogatives

Telugu does have interrogative determiners (and yes, *pass* below is a borrowing):

(47) īNTī-kī ēntā-māndī vīdja:rthū-lū vāč:-e:-rū
 house-LAT how much-HUM student-PL.NOM come-PERF-3PL.HUM
 ‘How many students came to the house?’

(48) e: vīdja:rthū-lū pāṛīkṣā pass āj:-e:-rū
 which student-PL.NOM exam.ACC pass become-PERF-3PL.HUM
 ‘Which students passed the exam?’

Boolean Compounds

Telugu allows quantifiers to form prenominal boolean compounds:

(49) āīdū-gūrū kāNTe: ēk:ūvā-māndī n-ū
 five-HUM than more-HUM [sandhi]-and

pādī kāNTe: tāk:ūvā-māndī:- n-ū
 ten than few-HUM-EMPH [sandhi]-and

vīdja:rthū-lū īNTī-kī vāč:-e:-rū
 student-PL.NOM house-LAT come-PERF-3PL.HUM

‘More than five and fewer than ten students came to the house.’

(50) ne:nū pīlīc-īnā number kāNTe: n-ū
 1SG.NOM call-REL.PERF number than [sandhi]-and

gādī-lō pāT:-e: number kāNTe: n-ū
 room-LOC fit-REL.IMPF number than [sandhi]-and

ēk:ūvā-māndī:- vīdja:rthū-lū īNTī-kī vāč:-e:-rū
 more-HUM-EMPH student-PL.NOM house-LAT come-PERF-3PL.HUM

‘More students than I invited and more than the room could fit came to the house.’

(51) āīdū-gūrū o: pādī-māndī o: vīdja:rthū-lū vāč:-e:-rū
 five-HUM either ten-HUM or student-PL.NOM come-PERF-3PL.HUM
 ‘(Either) five or ten students came.’

The boolean operation of negating the QNP can be achieved only through verbal negation:

(52) ĩNTĪ-kĭ pādĭ kãNTe: ěk:ũvã-mãndĭ vĭdja:rthũ-lũ ra:-le:dũ
 house-LAT ten than more-HUM student-PL.NOM come-NEG.PERF
 ‘Not more than ten students came to the house.’

(53) ĩNTĪ-kĭ kãni:sãmũ ĩd:ãrũ vĭdja:rthũ-lũ vãĉ:-e:-rũ ga:ni:
 house-LAT at least two.HUM student-PL.NOM come-PERF-3PL.HUM but

pādĭ kãNTe: ěk:ũvã-mãndĭ ra:-le:dũ
 ten than more-HUM come-NEG.PERF
 ‘At least two but not more than ten students came to the house.’

Numeral Classifiers and Container Expressions

Telugu doesn’t use numeral classifiers; as in English, container expressions or measure words convert mass terms to count ones. As in English, the Telugu container expressions below retain their literal meaning.

(54) rĕNDũ si:sa:-lũ pa:lũ
 two-NONHUM bottle-PL milk
 ‘two bottles of milk’

(55) ōkã Dãb:a: pa:lũ
 one.CARDADJ carton milk
 ‘a carton of milk’

(56) ĉa:la: Dãb:a:-lũ ũp:ũ
 many box-PL salt
 ‘many boxes of salt’

Measure Phrases

(57) ōkã kilo ũp:ũ
 A kilogram salt
 ‘a kilogram of salt’

(58) rĕNDũ kilo-lũ nĕj:ĩ
 two.NONHUM kilogram-PL butter
 ‘two kilograms of butter’

Units of Time and Distance

- (59) ne:nũ pãđĩ g^hãNTã-lũ nĩđ:ãrã-po:-e:-nũ
 1SG.NOM ten.NONHUM hour-PL.CASE? sleep-go-PERF-1SG
 ‘I slept for ten hours.’
- (60) ne:nũ e:Rũ ro:đũ-lã-lo: vãnãkã-kĩ vãs-ta:-nũ
 1SG.NOM seven.NONHUM day-PL-LOC back-LAT come-IMPF-1SG
 ‘I will return in seven days.’
- (61) va:rãmũ-lo: e:Rũ ro:đũ-lũ ũn-na:-jĩ
 week-LOC seven.NONHUM day-PL.NOM exist-PERF?-3PL.NONHUM
 ‘There are seven days in a week.’
- (62) Fontainebleau Paris-nĩñčĩ nãlãb^hãĩ kilometer-lũ
 Fontainebleau Paris-ABL forty kilometer-PL
 ‘Fontainebleau is forty kilometers from Paris.’
- (63) Ram Babu-kãNTe: mu:Rũ centimeter-lũ põRũgũ
 Ram.NOM Babu-than three.NONHUM centimeter-PL tall
 ‘Ram is three centimeters taller than Babu.’

15.2.1.2 A-Quantifiers

In Telugu, A-quantifiers denoting ‘*n* times’ are built with the productive form ‘numeral + times [sa:rĩ-lũ]’; no monomorphemic counterparts of ‘once, twice, thrice’ exist.

- (64) ne:nũ ãp:ũRũ-ãp:ũRũ school-kĩ nãRĩč-ĩ vẽL-ta:-nũ
 1SG.NOM then-then school-LAT walk go-IMPF-1SG
 ‘I sometimes walk to school.’
- (65) ne:nũ ěp:ũRu: school-kĩ nãRĩ-čĩ vẽL-Lã-nũ
 1SG.NOM ever school-LAT walk-? go-NEG.IMPF-1SG
 ‘I never walk to school.’
- (66) Ram Tashkent-nĩ rěNDũ sa:rĩ-lũ vãđĩlĩ vẽL-e:-Rũ
 Ram.NOM Tashkent-ACC two.NONHUM time-PL leave go-PERF-3SG.MASC.FAM
 ‘Ram left Tashkent twice.’

- (67) Ram Tashkent-nĩ na:lũgũ sa:rĩ-lũ vāđĩlĩ vĕL-e:-Rũ
 Ram.NOM Tashkent-ACC four.NONHUM time-PL leave go-PERF-3SG.MASC.FAM
 ‘Ram left Tashkent four times.’
- (68) Ram Tashkent-nĩ ča:la: sa:rĩ-lũ vāđĩlĩ vĕL-e:-Rũ
 Ram.NOM Tashkent-ACC many time-PL leave go-PERF-3SG.MASC.FAM
 ‘Ram left Tashkent many times.’

15.2.2 Generalized Universal (Co-intersective) Quantifiers

Table 15.2 A few generalized universal (co-intersective) quantifiers

Monomorphemic		Multimorphemic or Phrasal	
<i>D-Quantifiers</i>	<i>A-Quantifiers</i>	<i>D-Quantifiers</i>	<i>A-Quantifiers</i>
‘all’ [āndārũ] – count, human [ān:i] – count, nonhuman [ānta:] – mass (the noun follows the quantifier)	‘always’ [ĕp:ũRu:]	Where <i>n</i> represents any cardinal number and <i>x</i> represents a plural count noun: <i>n</i> tāp:a āndārũ/ān:i <i>x</i> <i>n</i> except all.CT <i>x</i> ‘all but <i>n x</i> ’	prāti: sa:rĩ each/every time ‘each/every time’
‘each/every’ [prāti:] (the noun follows the quantifier)		Where <i>x</i> represents a plural count noun: iñčũmĩñčũ ān:i <i>x</i> nearly/almost all.CT.NONHUM <i>x</i> ‘nearly/almost all’	ĕp:ũRũ ...-ĩna: when [verb root]- whether ‘whenever [subject-verb]’
		‘every (single)’ [prāti: (ōkã)]	ĕk:āRã ...-ĩna: where [verb root]- whether ‘wherever [subject-verb]’
		Where <i>x</i> represents any noun: e: <i>x</i> āj:-ĩna: which <i>x</i> happen-whether ‘whichever/whatever <i>x</i> ’	ĕndũkũ ...-ĩna: why [verb root]- whether ‘whenever [subject-verb]’
			ĕla ...-ĩna: how [verb root]- whether ‘however [subject-verb]’

V stands for verb root.

15.2.2.1 D-Quantifiers

- (69) āndārũ kāvũ-lũ-: a:lo:čis-ta:-rũ
 all.HUM poet-PL.NOM-EMPH reflect-IMPV-3PL.HUM
 ‘All poets reflect.’

- (70) class-lo: prāti:(-ōkā) vīdja:rthī-:
 class-LOC every(-one.CARDADJ) student-NOM-EMPH
 kāvītā ra:s-e:-Rū
 poem.ACC write-PERF-3SG.MASC.FAM
 ‘Every (single) student in the class wrote a poem / some poetry.’

It seems that vowel lengthening is required on the last word of an NP following *prāti*: ‘every’, *īd:ārū*:- ‘both’, and *āndārū* ‘all’.

- (71) an:ī pīl:ū-lū nāl:ā-vī ka:vū
 all.NONHUM cat-PL.NOM black-? NEG element.PL
 ‘Not all cats are black.’ / ‘All cats are not black’
- (72) class-lo: īd:ārū tāpa: āndārū vīdja:rthū-lū-:
 class-LOC two.HUM except all.CT.PL.HUM student-PL-EMPH
 pārīkṣā pass āj:-e:-rū
 exam.ACC pass become-PERF-3PL.HUM
 ‘All but two students in the class passed the exam.’
- (73) prāti: mōgāva:Rū-: a:Rādī-: pīl:a:Rū-: vu:rū-nī vādīl-e:-rū
 every man-CONJ woman-CONJ child-CONJ city-ACC leave-PERF-3PL.HUM
 ‘Every man, woman, and child left the city.’

15.2.2.2 A-Quantifiers

- (74) ne:nū ēp:ūRu: school-kī nāRīč-ī vēL-ta:-nū
 1SG.NOM always school-LAT walk go-IMPF-1SG
 ‘I always walk to school.’
- (75) Ram ēp:ūrū gāD:āmū gi:s-kūn-īna:
 Ram.NOM when beard scratch-REFL-whether
 ko:s-kūN-Ta:-Rū
 cut-REFL-IMPF-3SG.MASC.FAM
 ‘Ram cuts himself whenever he shaves.’
- (76) Ram gāD:āmū gi:s-kūn-ā
 Ram beard scratch-REFL-REL.PERF
 prāti: sa:rī ko:s-kūN-Ta:-Rū
 every time cut-REFL-IMPF-3SG.MASC.FAM
 ‘Ram cuts himself every time he shaves.’

15.2.2.3 Formation of Universal Quantifiers from Interrogative or Indefinite Pronouns

- universal D-Quantifier

Where x represents any noun:

e: x āj:-īna:
 which x happen-whether
 ‘whichever/whatever x ’

- universal A-Quantifier

ēk:āRā [verb root]-īna:
 where [verb root]-whether
 ‘wherever [subject-verb]’

- (77) Ram ēk:āRā-kī vēL:-īna: pa:Rū-ta:Rū
 Ram.NOM where-LAT go-whether sing-3SG.MASC.IMPF
 Ram sings wherever he goes.

Analogous [adverb]-*ever* forms are also derived from ēp:ūrū (when), ēndūkū (why), and ēla: (how).

Telugu does not form monomorphemic universally quantified NPs or indefinite pronouns from interrogative pronouns, but it does use interrogative pronouns together with a future conditional verb to form discontinuous bimorphemic universal D-quantifiers understood as headless relatives, as in (78).

- (78) ēvārū → ēvārū āj:-īna:
 who → anyone happen-whether
 ‘whoever/anyone’

The only other instances of such headless relatives include e:mī (what) and e:dī (which).

The generalized template for forming headless relatives using any verb is defined in (79) and instantiated in (80).

- (79) ēvārū → ēvārū [verb root]-īna:
 who → anyone [verb]-whether
 ‘whoever [verb]’

- (80) ēvārū gēlč-īna: Dāb:ū sāmpa:īs-ta:Rū
 anyone.NOM win-whether money.ACC earn-3SG.MASC.IMPF
 Whoever wins earns money.

Analogous *-ever* forms are also derived from e:mī (what), ēp:ūrū (when), ēk:āRā (where), ēndūkū (why), and ēla: (how).

15.2.3 Proportional Quantifiers

Table 15.3 A few proportional quantifiers: exclusively multimorphemic or phrasal

<i>D-Quantifiers</i>	<i>A-Quantifiers</i>
D+N	
<p>pādī-lo: e:Rū ten-LOC seven 'seven [out of]/[in] ten'</p> <p>pādī-lo: e:Rū x-lū e: ten-LOC seven x-PL only 'just/only seven [out of]/[in] ten xs'</p> <p>sāri/kāc:itāmū-ga: pādī-lo: e:Rū correct/exact-ly ten-LOC seven 'exactly seven [out of]/[in] ten'</p> <p>kāni:sāmū pādī-lo: e:Rū at least ten-LOC seven 'at least seven [out of]/[in] ten'</p> <p>pādī-lo: e:Rū kāNte: ěk:ūvā ten-LOC seven than more 'more than seven [out of]/[in] ten'</p> <p>pādī-lo: ěkā ... -[verbal negation] ten-LOC one.CARDADJ ... -[verbal negation]</p>	<p>čā:la: sa:rī-lū [rest of VP] many time-PL [rest of VP] 'frequent y/often'</p> <p>kōn:ī sa:rī-lū [rest of VP] some time-PL [rest of VP] 'infrequently/seldom'</p> <p>čā:la: vārūkū/māTūkū [rest of VP] much ? [rest of VP] 'mostly [rest of VP]'</p> <p>sa:d^ha:rānāmū-ga: [rest of VP] usual-ly [rest of VP] 'usually [rest of VP]'</p> <p>ma:mūlū-ga: [rest of VP] usual-ly [rest of VP] 'generally [rest of VP]'</p> <p>[subject] āp:ūRū- [verb] ga:ni: čā:la: sa:rī- [verbal nega- āp:ūRū [verb] but many time- tion]/ka:dū [subject] then- [verb] but many time- [verbal nega- then- [verb] but many time- PL tion]/not 'occasionally [verb] but not often'</p>
D+of+N	
<p>ěnāb^hāi ša:tāmū (kāNte: (ěk:ūvā) ... eighty percent (than) (more) ... '(more than) 80% of ...'</p> <p>čīn:ā ša:tāmū ... (e:) small percentage ... (only) '(just) a small percentage of ...'</p> <p>ěntā ša:tāmū how much percentage ... 'What percentage of ...'</p> <p>īrāvāi-kī mūp:^hāi-kī mād^hjā ša:tāmū ... twenty-DAT thirty-DAT between percent ... 'between 20% and 30% of ...'</p> <p>mu:Rū-lo:rēNDū ōntū-lū (kāNte:) (tāk:ūvā) ... three-LOC two part-PL (than) (less) ... '(less than) two thirds of ...'</p>	

More examples of proportional D-quantifiers corresponding to the English D+of+N pattern: ‘all (of) ...’ [ändärũ .../än:ĩ .../. ... änta:], ‘most/[a majority of]’ [ča:la:] (N.B. This is a makeshift translation, whose actual meaning is ‘many/[a lot]’),

pădĩ-lo: ôk:ă öntũ tăp:a: ändärũ/än:ĩ/änta: ...
 ten-LOC one.CARDADJ part except all.±CT/PL/±HUM ...
 ‘all but a tenth of ...’

ën:ĩ-lo: ën:ĩ öntũ-lũ ...
 how many-LOC how many part-PL ...
 ‘What fraction of ...’

săgămũ (kăNTe:) (ëk:üvä/tăk:üvä) ...
 half (than) (more/less) ...
 ‘(more/less than) half of [the]...’

sări/kăçitămũ-ga: săgămũ ...
 correct/exact-ly half ...
 ‘exactly half of [the]...’

15.2.3.1 D-Quantifiers

Telugu appears not to distinguish D+N (proportional) and D+of+N (partitive):

D+N

(81) ča:la:-măndĩ kăvũ-lũ ta:gũ-ta:-rũ
 Many-HUM poet-PL.NOM drink-IMPF-3PL.HUM
 ‘Most poets drink.’

But this gets translated as ‘Many poets drink.’ as well, reflecting Telugu’s lack of a monomorphemic ‘most’ (or any other monomorphemic proportional determiner).

(82) pădĩ-lo: e:Rũ-gũrũ kăvũ-lũ ta:gũ-ta:-rũ
 ten-LOC seven-HUM poet-PL.NOM drink-IMPF-3PL.HUM
 ‘Seven out of ten poets drink.’

- (83) pādī-māndī-lo: ōkā vīdja:rthī kāNTe: ěk:ūvā-māndī-kī
 ten-HUM-LOC one.CARDADJ student- than more-HUM.PL-DAT

Dāb:ū vās-tūn-dī
 money.NOM come-IMPF-3SG.NONHUM

‘More than one student in ten will get some money.’

- (84) pādī-māndī-lo: ōkā gūrūvū-kī-:
 ten-HUM-LOC one.CARDADJ teacher-DAT-EMPH

a: prašnā-kī đžāva:bū těli:-jā-dū
 that question-DAT answer.NOM to be known-NEG- IMPF.3SG

‘Not one teacher in ten knows the answer to that question.’

D+of+N

- (85) ārāvāī śa:tāmū american a:Rā-va:L-Lū la:vū-ga: ūN-Ta:-rū
 sixty percent American woman-PL.NOM fat-like exist-IMPF-3PL.HUM
 ‘Sixty percent of American women are overweight.’

- (86) āīdū-lo: ōkā ōntū kāNTe: tāk:ūvā american-lū nāv:-e:-rū
 five-LOC one.CARDADJ part than less American-PL.NOM laugh-PERF-3PL.HUM
 ‘Less than a fifth of Americans laughed.’

15.2.3.2 A-Quantifiers

Activity Predicates

When the adverb occurs in positions other than the pragmatically unmarked ones in (87)–(90), it functions to contrast elements of the immediately preceding constituent.

- (87) a:Rā-va:L-Lū ěk:ūvā-ga: Reagan-mi:dā nāv:-e:-rū
 female-one-PL.NOM most-ly Reagan-SUP laugh-PERF-3PL.HUM
 ‘Women mostly laughed at Reagan.’

- (88) sa:d^ha:rānāmū-ga: doṅgā-lū police-nīñčī pa:rī-po:-jīnā āp:ūRū
 usual-ly thief-PL.NOM police-ABL flee-go-?? when
 coffee-ko:sāmū a:g-ā-rū
 coffee-BEN stop-NEG-IMPF.3PL.HUM

‘Usually when outlaws flee the police, they don’t stop for coffee.’

- (89) Ram school-kĩ tārāčũ-ga: nāRĩčĩ vĕL-ta:-Rũ
 Ram.NOM school-LAT frequent-ly walk go-IMPf-3SG.MASC.FAM
 ‘Ram often walks to school.’
- (90) Ram museum-lā-kĩ a:dīva:ra:-lũ
 Ram.NOM museum-PL-LAT Sunday-PL
 ārũdũ-ga: vĕL-ta:-Rũ
 seldom-ly go-IMPf-3SG.MASC.FAM
 ‘Ram seldom/rarely goes to museums on Sundays.’

Stative Predicates

- (91) mōgā-va:L-Lũ ma:mũlũ-ga: a:Rā-va:L-Lā kāNte: pōRũgũ
 male-one-PL.NOM normal-ly female-one-PL.NOM than tall
 ‘Men are usually taller than women.’

15.3 Notable Quantifier Phenomena

Having offered the foregoing classification of quantifiers possibly descriptive of all natural languages, we now present a variety of quantifier phenomena which may also indicate universal tendencies.

15.3.1 Some NP Background

15.3.1.1 Definite NPs

Proper Nouns

Telugu proper nouns Telugu are essentially monomorphemic, but with a phonological constraint: NO CODA. So, ‘Prasad’ [prāsa:d] is generally realized as [prāsa:dũ], unless sandhi requires it to be resyllabified with an initial vowel in the following word, as in:

- (92) prāsa:d-ũ car kōn-ũk-kũn-na:-Rũ
 Prasad-NO CODA.NOM car buy-SANDHI-REFL-PERF-3SG.MASC.FAM
 ‘Prasad bought (himself) a car.’
- (93) prāsa:d öč:-e:-Rũ
 Prasad.NOM come-PERF-3SG.MASC.FAM
 ‘Prasad came.’

... where [prā.sa:d öč.çe:.Rũ] is resyllabified as [prā.sa:.döč_çe:.Rũ].

- (94) Prasad(-jök:ă) pīl:ă-lũ
 Prasad.GEN child-PL
 ‘Prasad’s children’

Adnominal Demonstratives

Telugu has two adnominal demonstratives, distinguishing proximal vs. distal, but not singular vs. plural:

- (95) i: stri:
 DEIC.PROX woman
 ‘this woman’
- (96) i: stri:-lũ
 DEIC.PROX woman-PL
 ‘these women’
- (97) a: pīl:ĩ
 DEIC.DIST cat
 ‘that cat’
- (98) a: pīl:ũ-lũ
 DEIC.DIST cat-PL
 ‘those cats’
- (99) a: vīdja:rthũ-lũ
 DEIC.DIST student-PL
 ‘those students’

15.3.1.2 Indefinitely Definite NPs

The Definitely Absent Article

Telugu does *not* have a definite article distinct from the adnominal demonstrative, as illustrated in the following variety of bare NPs. Even the null quantifier in such NPs doesn’t uniquely represent English’s definite article, but rather allows both the definite and indefinite (generic-noun) interpretations, where a boy is being identified generically, in contrast to either a girl or an older man, for instance:

- (100) **ăb:a:ĩ** būRăgă kōn-na:-Rũ
boy.NOM balloon.ACC buy-PERF-3SG.MASC.FAM
 ‘A *boy* bought a/the balloon.’

Where the subject has been previously mentioned:

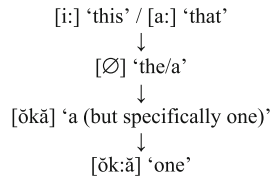
- (101) āb:a:ī **būRāgā** kōn-na:-Rū
 boy.NOM **balloon.ACC** buy-PERF-3SG.MASC.FAM
 ‘The boy bought *a/the balloon*.’
- (102) kūk:ā pīla:Rū-nī kārīč-īn-dī
 dog.NOM child-ACC bite-PERF-3SG.NONHUM
 ‘A/The dog bit *a/the child*.’
- (103) kūnde:lū tvārā-ga: pīl:ā-lū pēR-tūn-dī
 rabbit-SG hurry <noun>-ly child-PL put¹-IMPF-3SG.NONHUM
 ‘A/The rabbit reproduces rapidly.’
- (104) māñčāmū ne:lā-nī gi:s-īn-dī
 bed.NOM floor-ACC scratch-PERF-3SG.NONHUM
 ‘A/The bed scratched (*a/*)the floor.’
- (105) kūk:ā-lū kārūs-ta:-jī
 dog-PL bite-IMPF-3PL.NONHUM
 ‘(The) Dogs (will) bite.’
- (106) ne:nū kūk:ā-lā-nī ām:-e:-se:-nū
 1SG dog-PL-ACC sell-PERF-EMPH-1SG
 ‘I sold (the) dogs.’
- (107) ān:āmū nēj:i-nī kārīgīs-tūn-dī
 rice.NOM butter.ACC melt-IMPF-3SG.NONHUM
 ‘(The) Rice melts/will melt (the) butter.’

An Indefinite Article

Telugu’s equivalent of an overt indefinite article [ōkā] is derived from the cardinal number ‘one’ [ōkāTī]; however, as discussed in Section 15.3.2.2 ‘one’, although translated into English as ‘a(n)’, [ōkā] implies ‘one’ and precludes any other quantity. Rather, the examples illustrate that the indefinite article ‘a(n)’ familiar to English speakers is most faithfully represented by the null quantifier

¹ Incidentally, for species evolutionarily ‘lower’ than dogs, offspring are ‘put’ ([pēT:āRāmū] = ‘putting’), but for those equal or higher, offspring are ‘given birth to’ ([kān:āRāmū] = ‘giving birth to’).

(i.e. in bare NPs) in Telugu, since it, like the English indefinite article, makes no explicit quantitative claim about the NP, but rather makes a merely qualitative statement. So a ‘definiteness ordering’ for Telugu, in decreasing order of definiteness, would look like this:



... where a focus on the nature of the NP (i.e. the NP less the determiner) is exemplified by $[\emptyset]$ ‘the/a’ at the definite end (the top) of the order, with a shift in focus towards the quantity of the NP, exemplified by $[\text{õk:ã}]$ ‘one’, at the indefinite end (the bottom). The following sentence can mean ‘A student came’ (also ‘The student came.’) with a generic contrastive reference to a ‘student’ as opposed to a ‘teacher’, for instance, but not necessarily limiting the quantity of students that came.

- (108) $\text{vĩd}^j\text{a:rt}^h\text{ĩ}$ vãç:-e:-Rũ
 student.NOM come-PERF-3SG.MASC.FAM
 ‘A student came.’

The same sentence modified to include the overt indefinite article $[\text{õkã}]$ ‘a(n)’ restricts the quantity of students to one:

- (109) õkã $\text{vĩd}^j\text{a:rt}^h\text{ĩ}$ vãç:-e:-Rũ
 one.CARDADJ student.NOM come-PERF-3SG.MASC.FAM
 ‘A (specifically one) student came.’

15.3.2 *A Typological Perspective*

15.3.2.1 All

‘All’ assumes three forms, $[\text{ãndãrũ}/\text{ãn:i}/\text{ãnta:}]$, selecting for CT.PL.HUM, CT.PL.NONHUM, and MS nouns, respectively.

<all.CT.HUM.PL> $[\text{ãndãrũ}]$:

- (110) ãndãrũ pĩl:ã-lũ:- a:R-e:-rũ
 all.CT.HUM.PL child-PL.NOM-EMPH play-PERF-3PL.HUM
 ‘All the children played.’

The quantifier-NP word order may be reversed, with a slight shift in focus from the quantifier, in (110), to the NP (contrasting it with some other NP in the discourse), in (111). In (110), ‘all’ is being contrasted naturally with ‘some’, for instance; whereas in (111), ‘children’ is being contrasted with ‘adults’, for instance.

- (111) p̄l:ā-lū āndārū:- a:R-e:-rū
 child-PL.NOM all.CT.HUM.PL-EMPH play-PERF-3PL.HUM
 ‘All the children played.’

We note that adverbs cannot separate the quantifier ‘all’ from the noun ‘children’ in (111), suggesting that (111) does not instantiate Quantifier Float.

Nonhuman, animate creatures are treated grammatically the same as inanimate objects, as exemplified below, but differently from humans, as exemplified above:

<all.CT.NONHUM.PL> [ān:ī]:

- (112) ān:ī kūk:āl-ū a:R-e:-jī
 all.CT.NONHUM.PL dog-PL.NOM play-PERF-3PL.NONHUM
 ‘All the dogs played.’

- (113) ān:ī bāntū-lū dōrl-ē-jī
 all.CT.NONHUM.PL ball.PL.NOM roll-PERF-3PL.NONHUM
 ‘All the balls rolled.’

The quantifier-NP word order reversibility applies to <all.CT.NONHUM.PL> [ān:ī] as it does to <all.CT.HUM.PL> [āndārū]. (An incidental observation: although ‘milk’ in English is a mass noun, it behaves as a plural count noun in Telugu):

- (114) ān:ī pa:lū:- ōlkī-po:-ē-jī
 all.CT.NONHUM.PL milk.NOM-EMPH spill-go-PERF-3PL.NONHUM
 ‘All the milk has spilled.’

For the mass noun quantifier ‘all’ [ānta:], the reverse word order does not produce an acceptable sentence.

<all.MS> [ānta:]:

- (115) pānī ānta: āj:-po:-īn-dī
 work.NOM all.MS happen-go-PERF-3SG.NONHUM
 ‘All the work is completed.’
- (116) *āntā pānī:- āj:-po:-īn-dī
 all.MS work.NOM-EMPH happen-go-PERF-3SG.NONHUM
 ‘All the work is completed.’

15.3.2.3 Proportional Determiner

Telugu doesn't likely have a monomorphemic proportional determiner; rather, it simply uses 'many' and the discours context to convey 'most', for example.

- (122) ča:la:-māndī vīdja:rthū-lū ba:ga: čādūvū-kūN-Ta:-rū
 many-HUM student-PL.NOM well study-REFL-IMPF-3PL.HUM
 'Most/many students study well.'

15.3.2.4 Value Judgment Quantifiers: '(Too) Many/Much' and '(Too) Few/Little'

Telugu has three monomorphemic value judgment quantifiers translating 'many/much' (all using the HUM suffix [-māndī] for nouns referring to humans): [ča:la:] is used standardly; [bo:LDū] is used in casual speech; and [ėk:ūvā], while denoting 'many/much', also closely abuts the sense of 'too many/much'.

- (123) va:Rū ča:la:-māndī vīdja:rthī-lā-nī kālīs-e:-Rū
 3SG.MASC.FAM.NOM many-HUM student-PL-ACC meet-PERF-3SG.MASC.FAM
 -OR-
- (124) a. va:Rū bo:LDū-māndī vīdja:rthī-lā-nī kālīs-e:-Rū
 3SG.MASC.FAM.NOM many-HUM student-PL-ACC meet-PERF-3SG.MASC.FAM
 -OR-
- b. va:Rū ěk:ūvā-māndī vīdja:rthī-lā-nī kālīs-e:-Rū
 3SG.MASC.FAM.NOM many-HUM student-PL-ACC meet-PERF-3SG.MASC.FAM
 'He met many students.'
 -OR-
- c. va:Rū ča:la: sārūkū-lū kōn-na:-Rū
 3SG.MASC.FAM.NOM many-NONHUM thing-PL-ACC buy-PERF-3SG.MASC.FAM
 -OR-
- d. va:Rū bo:LDū sārūkū-lū kōn-na:-Rū
 3SG.MASC.FAM.NOM many-NONHUM thing-PL-ACC buy-PERF-3SG.MASC.FAM
 -OR-
- e. va:Rū ěk:ūvā sārūkū-lū kōn-na:-Rū
 3SG.MASC.FAM.NOM many-NONHUM thing-PL-ACC buy-PERF-3SG.MASC.FAM
 'He bought many things.'
- (125) a. va:Rū ča:la: bi:jāmū kōn-na:-Rū
 3SG.MASC.FAM.NOM much-NONHUM rice-SG-ACC buy-PERF-3SG.MASC.FAM
 -OR-

- b. va:Rũ bo:LDũ bi:j:ãmũ kõn-na:-Rũ
 3SG.MASC.FAM.NOM much-NONHUM rice-SG.ACC Buy-PERF-3SG.MASC.FAM
 -OR-
 c. va:Rũ êk:ũvã bi:j:ãmũ kõn-na:-Rũ
 3SG.MASC.FAM.NOM much-NONHUM rice-SG.ACC Buy-PERF-3SG.MASC.FAM
 ‘He bought much (i.e. a lot of) rice.’

For added emphasis (on non-human nouns), [bo:LDũ-ãn:i] (‘many, many’ [CT]) and [bo:LDũ-ãntã] (‘much, much’ [MS]) are used. [êk:ũvã] also denotes ‘*too* many/much’:

- (126) êk:ũvã-mãndĩ Vĩdja:rthũ-lũ vãç:-e:-rũ
 too many-HUM student-PL.NOM come-PERF-3PL.HUM
 ‘Too many students came.’
- (127) va:Rũ êk:ũvã bõm:ã-lũ kõn-kũn-na:-Rũ
 3SG.MASC.FAM.NOM too many.NONHUM doll-PL.ACC buy-REFL-PERF-3SG.MASC.FAM
 ‘He bought too many dolls.’
- (128) êk:ũvã vãrşãmũ pãR-ĩn-dĩ
 too much.NONHUM rain.NOM fall-PERF-3SG.NONHUM
 ‘Too much rain fell.’ OR ‘It rained too much.’

Telugu has one monomorphemic value judgment quantifier translating ‘few/little’: [tãk:ũvã], which uses the HUM suffix [-mãndĩ] for nouns referring to humans. Analogous to ‘(too) many/much’ [êk:ũvã], [tãk:ũvã] also conveys the sense of ‘*too* few/little’.

- (129) tãk:ũvã-mãndĩ vĩdja:rthũ-lũ pass ãj:-e:-rũ
 (too) few-CT.PL.HUM student-PL.NOM pass become-PERF-3PL.HUM
 ‘(Too) few students passed.’
- (130) ne:nũ tãk:ũvã pãkşũ-lã-nĩ çu:s-ẽ-nũ
 1SG.NOM (too) few.NONHUM bird-PL-ACC see-PERF-1SG
 ‘I saw (too) few birds.’
- (131) ne:nũ tãk:ũvã bi:j:ãmũ-nĩ kõn-na:-nũ
 1SG.NOM (too) little.NONHUM rice-ACC buy-PERF-1SG
 ‘I bought (too) little rice.’

Phrasally, Telugu routinely employs the construction ‘some... only’ [kōntā-māndī/kōn:ī/kōntā... e:] to convey the value judgment sense of ‘few/little’, and ‘a little... only’ [kōñčāmū... e:] for ‘little (mass sense)’.

- (132) a. kōntā-māndī vīdja:rthū-lū e: vāč:-e:-rū
 some-CT.PL.HUM Student-PL.NOM only come-PERF-3PL.HUM
 ‘Few students came.’ Via ‘Only some students came.’
- b. kōn:ī car-lū e: k^hāri:dū
 some-CT.PL.NONHUM car-PL.NOM only expensive
 ‘Few cars are expensive.’ via ‘Only some cars are expensive.’
- c. kōntā se:pū e: ūn-dī
 some-MS time.MS.NOM only exist.IMPF-3SG.NONHUM
 ‘There is little time.’ Lit: ‘Only some time is there.’

15.3.2.5 No

Telugu lacks a monomorphemic ‘no’, for which it relies on the combination of the monomorphemic NPI [e:] ‘any’ (preceding the NP) along with a licenser – an interrogative phrase or a decreasing expression, including decreasing NPs, decreasing adverbial phrases (e.g. ‘ever’, ‘hardly’, etc.), and verbal negation.

interrogative phrase:

- (133) nūv:ū e: pākṣī-nī āj:-īna: ču:s-e:-vū a:
 2SG.NOM which bird-ACC become-whether see-PERF-2SG.FAM QP
 ‘Did you see any birds?’

verbal negation:

- (134) ne:nū e: pākṣī-nī āj:-īna: ču:Rā-le:dū
 1SG.NOM any bird-ACC become-whether see-NEG.PERF
 ‘I saw no birds./I didn’t see any birds.’

- (135) ne:nū e: pākṣī-nī: ču:Rā-le:dū
 1SG.NOM Any bird-ACC-EMPH see-NEG.PERF
 ‘I saw no birds./I didn’t see any birds.’

decreasing expression:

- (136) ne:nū kāṣṭā pāR-te:
 1SG.NOM difficulty fall-IMPF.COND

- (137) e: pākṣū-lā-nī āj:-īna: ču:s-e:-nū
 any bird-PL-ACC happen-whether see-PERF-1SG
 ‘I saw hardly any birds.’

15.3.2.6 Universal D-Quantifiers: each/every, all (the)

Telugu has two words interpreted as universal D-quantifiers, corresponding to ‘each/every’ [prāti:] and ‘all’ [āndārū/ān:i/ānta:]. ‘Each/every’ obviously selects CT nouns. The word for ‘all’ agrees with the noun in the [CT.HUM] features (obviously selecting for PL if [CT]).

- (138) ne:nũ prāti: pākṣi-nĩ ču:s-ě-nũ
 1SG.NOM every bird-ACC see-PERF-1SG
 ‘I saw each/every bird.’

- (139) ne:nũ ān:i pākṣū-lā-nĩ ču:s-ě-nũ
 1SG.NOM all.CT.NONHUM bird-PL-ACC see-PERF-1SG
 ‘I saw all (the) birds.’

15.3.2.7 Relative Complexity of A-Quantifiers vs. D-Quantifiers

There appear to be no monomorphemic A-quantifiers, all are syntactically complex, sometimes built on nominal patterns as in English ‘five times’ (see later). Some are formed with the adverbial suffix *-ga* from a frequency adjective:

- | | | |
|---------------|--|-----------------|
| tārāčũ-ga: | | ārũdũ-ga: |
| ‘frequent-ly’ | | ‘occasional-ly’ |

15.3.2.8 Feature Selection of D-Quantifiers

In Telugu, D-quantifiers select for some combination (but not necessarily all) of the features <CT/MS, HUM/NONHUM, SG/PL> in the nouns they modify.

Generalized Existential (Intersective) Quantifiers

Refer to Section 15.3.2.2 ‘one’ for a detailed discussion of the three following examples.

- (140) ne:nũ ōk:ā pākṣi-nĩ ču:s-ě-nũ
 1SG.NOM one.CARDADJ bird-ACC see-PERF-1SG
 ‘I saw one bird.’ [Carries emphasis on ‘one’.]

- (141) ne:nũ ōkā pākṣi-nĩ ču:s-ě-nũ
 1SG.NOM one.CARDADJ bird-ACC see-PERF-1SG
 ‘I saw a bird.’ [Lacks any particular emphasis, but specifies ‘one’ of the object.]

- (142) ne:nũ Ø pākṣi-nĩ ču:s-ě-nũ
 1SG.NOM a bird-ACC see-PERF-1SG
 ‘I saw a bird.’ [implies one bird, but the focus is on the object, not the quantity.]

‘Some’ (denoting ‘several’ as well) assumes three forms, selecting for CT.PL.HUM, CT.PL.NONHUM, and MS nouns, respectively. It is noteworthy that [kõntã-mãndĩ], which selects for CT.PL.HUM nouns, is built from the <some.MS> morpheme [kõntã].

- (143) ne:nũ kõntã-mãndĩ vīdja:rthĩ-lã-nĩ ču:s-ě-nũ
 1SG.NOM some/several-CT.PL.HUM student-PL-ACC see-PERF-1SG
 ‘I saw some/several students.’

- (144) ne:nũ kõn:ĩ pākṣũ-lã-nĩ ču:s-ě-nũ
 1SG.NOM some/several.CT.PL.NONHUM bird-PL-ACC see-PERF-1SG
 ‘I saw some/several birds.’

- (145) ne:nũ kõntã nēj:ĩ kõn-na:-nũ
 1SG.NOM some.MS butter.ACC buy-PERF-1SG
 ‘I bought some butter.’

‘many/much’ [ča:la:] can modify any noun (as can ‘many/much’ [bo:LDũ] and ‘many/much’ [ěk:ũvã], which are discussed in Section 15.3.2.4 ‘Value Judgment Quantifiers: (too) many/much and (too) few/little’:

- (146) ča:la:-mãndĩ vīdja:rthũ-lũ pass āj:-e:-rũ
 many-HUM student-PL.NOM pass become-PERF-3PL.HUM
 ‘Many students passed.’

- (147) va:Rũ ča:la: bõm:ã-lũ kõn-kũn-na:-Rũ
 3SG.MASC.FAM.NOM many.NONHUM doll-PL.ACC buy-REFL-PERF-3SG.MASC.FAM
 ‘He bought many dolls.’

- (148) ča:la: vārṣãmũ pãR-ĩn-dĩ
 much.NONHUM rain.NOM fall-PERF-3SG.NONHUM
 ‘Much rain fell.’ OR ‘It rained a lot.’

As with ‘many/much’ [ča:la:]/[bõLDũ]/[ěk:ũvã], ‘(too) few/little’ [tãk:ũvã] can modify any noun:

- (149) tãk:ũvã-mãndĩ vīdja:rthũ-lũ pass āj:-e:-rũ
 (too) few-HUM student-PL.NOM pass become-PERF-3PL.HUM
 ‘(Too) few students passed.’

(150) va:Rũ tāk:ũvā bõm:ā-lũ kõn-kũn-na:-Rũ
 3SG.MASC.FAM.NOM (too) few.NONHUM doll-PL.ACC buy-REFL-PERF-3SG.MASC.FAM
 ‘He bought (too) few dolls.’

(151) tāk:ũvā vāršāmũ pāR-ĩn-dĩ
 (too) little.NONHUM rain.NOM fall-PERF-3SG.NONHUM
 ‘(Too) little rain fell.’ OR ‘It rained (too) little.’

‘a little (mass denotation)’ [kõñčāmũ] can modify only mass nouns:

(152) kõiñčāmũ vāršāmũ pāR-ĩn-dĩ
 a little.MS rain.NOM fall-PERF-3SG.NONHUM
 ‘A little rain fell.’ OR ‘It rained a little.’

(153) *kõiñčāmũ-māndĩ vīdja:rthũ-lũ (e:) vāč:-e:-rũ
 a little.MS-HUM student-PL.NOM (only) come-PERF-3PL.HUM
 ‘Few students came.’

(154) *kõiñčāmũ vīdja:rthũ-lũ (e:) vāč:-e:-rũ
 a little.MS student-PL.NOM (only) come-PERF-3PL.HUM
 ‘Few students came.’

(155) *kõiñčāmũ bõm:ā-lũ (e:) kõi-na:-rũ
 a little.MS doll-PL.ACC (only) buy-PERF-3SG.MASC.FAM
 ‘He bought few dolls.’

(Modified) numerals select for CT nouns and determine their number. .

(156) ne:nũ āĩdũ-gũrũ vīdja:rthĩ-lā-nĩ ču:s-ě-nũ
 1SG.NOM five.CT.PL-HUM student-PL-ACC see-PERF-1SG
 ‘I saw five students.’

(157) ne:nũ āĩdũ pākšũ-lā-nĩ ču:s-ě-nũ
 1SG.NOM five.CT.PL.NONHUM bird-PL-ACC see-PERF-1SG
 ‘I saw five birds.’

(158) ne:nũ āĩdũ kãNTe: ěk:ũvā pākšũ-lā-nĩ ču:s-ě-nũ
 1SG.NOM five.CT.PL.NONHUM than more bird-PL-ACC see-PERF-1SG
 ‘I saw more than five birds.’

- (159) a. ne:nũ āḍḍũ e: pākṣũ-lā-nĩ ču:s-ě-nũ
 1SG.NOM five.CT.PL.NONHUM just bird-PL-ACC see-PERF-1SG

OR

- b. ne:nũ āḍḍũ pākṣũ-lā-nĩ e: ču:s-ě-nũ
 1SG.NOM five.CT.PL.NONHUM bird-PL-ACC just see-PERF-1SG
 ‘I saw just five birds.’

- ‘how many/much’, like ‘some’, assumes three forms, selecting for CT.PL.HUM, CT.PL.NONHUM, and MS nouns, respectively. It is noteworthy that [ěntā-māṅḍĩ], which selects for CT.PL.HUM nouns, is built from the <how much. MS> morpheme [ěntā].

- (160) (nũv:ũ) ěn:tā-māṅḍĩ vīdja:rthĩ-lā-nĩ ču:s-ě-vũ
 (2SG.FAM.NOM) how many.CT.PL.HUM student-PL-ACC see-PERF-2SG.FAM
 ‘How many students did you see?’

- (161) (nũv:ũ) ěn:ĩ pākṣũ-lā-nĩ ču:s-ě-vũ
 (2SG.FAM.NOM) how many.CT.PL.NONHUM bird-PL-ACC see-PERF-2SG.FAM
 ‘How many birds did you see?’

- (162) (nũv:ũ) ěn:tā Dāb:ũ tēc:-ě-vũ
 (2SG.FAM.NOM) how much.MS money.ACC bring-PERF-2SG.FAM
 ‘How much money did you bring?’

- ‘which’ [e:] appears not to select for any features:

- (163) (nũv:ũ) e: vīdja:rthĩ-nĩ ču:s-ě-vũ
 (2SG.FAM.NOM) which student-ACC see-PERF-2SG.FAM
 ‘Which student did you see?’

- (164) (nũv:ũ) e: vīdja:rthĩ-lā-nĩ ču:s-ě-vũ
 (2SG.FAM.NOM) which student-PL-ACC see-PERF-2SG.FAM
 ‘Which students did you see?’

- (165) (nũv:ũ) e: pākṣĩ-nĩ ču:s-ě-vũ
 (2SG.FAM.NOM) which bird-ACC see-PERF-2SG.FAM
 ‘Which bird did you see?’

- (166) (nũv:ũ) e: ān:āmũ tĩn-na:-vũ
 (2SG.FAM.NOM) which rice.ACC eat-PERF-2SG.FAM
 ‘Which rice did you eat?’

‘no’ [e:] appears not to select for any features:

- (167) ne:nũ e: v̄dja:rthĩ-nĩ-: ču:Rã-le:dũ
 1SG.NOM any student-ACC-EMPH see-NEG.PERF
 ‘I saw no student./I didn’t see any student.’
- (168) ne:nũ e: v̄dja:rthĩ-lã-nĩ-: ču:Rã-le:dũ
 1SG.NOM any student-PL-ACC-EMPH see-NEG.PERF
 ‘I saw no students./I didn’t see any students.’
- (169) ne:nũ e: pãkṣĩ-nĩ-: ču:Rã-le:dũ
 1SG.NOM any bird-ACC-EMPH see-NEG.PERF
 ‘I saw no bird./I didn’t see any bird.’
- (170) ne:nũ e: pãkṣũ-lã-nĩ-: ču:Rã-le:dũ
 1SG.NOM any bird-PL-ACC-EMPH see-NEG.PERF
 ‘I saw no birds./I didn’t see any birds.’
- (171) ne:n(ũ) e: bi:jãmũ-: kōnã-le:dũ
 1SG.NOM any rice.ACC-EMPH buy-NEG.PERF
 ‘I bought no rice./I didn’t buy any rice.’

Interestingly, the Telugu word for ‘water’, [ni:L-Lũ], is considered a CT.PL noun.

- (172) ĩk:ãRã nĩL-Lũ ba:-ga: ũn-na:-jĩ
 here water-PL good-ly exist-PERF-3PL.NONHUM
 ‘The water here is good.’

Generalized Universal (Co-intersective) Quantifiers

The feature selection properties of ‘all’ are described in Section 15.3.2.1 ‘all’. ‘each’ [čẽrĩ-õkã] and ‘every’ [prãti:] select for CT.SG nouns, without distinguishing between HUM and NONHUM:

<each.CT.SG>, humans:

- (173) prãti: pĩl:ã:Rũ a:R-e:-Rũ
 every.CT.SG child.NOM play-PERF-3SG.MASC.FAM
 ‘Every child played.’
- (174) *prãti: pĩl:ã-lũ a:R-e:-rũ
 every.CT.SG child-PL.NOM play-PERF-3PL.HUM
 ‘Every children played.’

<every.CT.SG>, animate non-humans:

- (175) prāti: kūk:ă a:R-ĭn-dĭ
 every.CT.SG dog.NOM play-PERF-3SG.NONHUM
 ‘Every dog played.’

<every.CT.SG>, inanimate objects:

- (176) prāti: būRăgă pe:lĭ-pō-ĭn-dĭ
 every.CT.SG balloon.NOM burst-go-PERF-3SG.NONHUM
 ‘Every balloon popped.’

Proportional Quantifiers

Proportional quantifiers select for features based on the nature of the quantifier. For those quantifiers which, in English, assume the form <determiner+NP_{indef.pl.}>, the Telugu counterparts select for CT nouns whose grammatical number naturally depends on the quantifier (since such quantifiers are built from cardinal numbers). Ones that correspond to English pattern <D+NP_{indef.pl.}>:

- (177) pādĭ-māndĭ-lo: ōkă pĭl:a:Rŭ a:R-e:-Rŭ
 ten.CT.PL-HUM-LOC one.CARDADJ child.NOM play-PERF-3SG.MASC.FAM
 ‘One out of ten children played.’

- (178) pādĭ-māndĭ-lo: e:Rŭ-gŭrŭ pĭl:ă-lŭ a:R-e:-rŭ
 ten.CT.PL-HUM-LOC seven.CT.PL-HUM child-PL.NOM play-PERF-3PL.HUM
 ‘Seven out of ten children played.’

- (179) pādĭ-lo: e:Rŭ kŭk:ă-lŭ a:R-ĕ-jĭ
 ten.CT.PL.NONHUM-LOC seven.CT.PL.NONHUM dog-PL.NOM play-PERF-3PL.NONHUM
 ‘Seven out of ten dogs played.’

- (180) pādĭ-lo: e:Rŭ bŏm:ă-lŭ
 ten.CT.PL.NONHUM-LOC seven.CT.PL.NONHUM doll-PL.NOM

mĕrĭšĭ-po:-tŭN-T/tu: ũn-na:-jĭ
 shine-go-PROG-GER exist-PERF-3PL.NONHUM

‘Seven out of ten dolls were shining.’

For those quantifiers which, in English translation, assume the form <determiner+of+NP_{indef.pl.}>, the choice of noun is restricted to either CT.PL or MS nouns (as in English), but is otherwise independent of the quantifier.

English <D+of+NP_{indef.pl.}>:

- (181) a. count: ɛnǎb^hǎĩ śa:tǎmũ pĩl:ǎ-lũ nǎvũ-ta:-rũ
 eighty percent child-PL.NOM laugh-IMPf-3PL.HUM
 ‘Eighty percent of children laugh.’
- b. mass: ɛnǎb^hǎĩ śa:tǎmũ něj:i la:vũ ɕe:s-tũn-dĩ
 eighty percent butter-NOM fat make-IMPf-3SG.NONHUM
 ‘Eighty percent of butter fattens.’
- (182) a. count: mu:Rũ-lo: rěNDũ ǒntũ-lǎ pĩl:ǎ-lũ e:Rũs-ta:-rũ
 three.NONHUM-LOC Two.NONHUM part-PL child-PL.NOM cry-IMPf-3PL.HUM
 ‘Two thirds of children cry.’
- b. mass: mu:Rũ-lo: rěNDũ ǒntũ-lǎ pre:mǎ ǎdrũṣTǎmũ
 three.NONHUM-LOC Two.NONHUM part-PL love-NOM luck.NOM
 ‘Two thirds of love is good fortune.’
- (183) a. count: ɕa:la:-mǎndĩ pĩl:ǎ-lũ TV ɕu:s-ta:-rũ
 many-HUM child-PL.NOM TV watch-IMPf-3PL.HUM
 ‘A majority of children watch TV.’
- b. mass: ɕa:la: pi:ɕũ mɛt:ǎ-gǎ ũN-Tũn-dĩ
 much.NONHUM fiber.NOM hard-ly exist-IMPf-3SG.NONHUM
 ‘A majority of cotton is soft.’

15.3.3 Decreasing NPs

15.3.3.1 Determiners Which Build Decreasing NPs

Telugu can build decreasing NPs, but not with Determiners alone, as negation on the verb is required to ‘complete’ the downward entailment.

Intersective

- (184) e: vĩdja:rthũ-lũ-: ĩNTĩ-kĩ Ra:-le:dũ
 any student-PL.NOM-EMPH house-LAT come-NEG.PERF
 ‘No students came to the house.’

*Attempting to use the affirmative construction produces an ill-formed sentence.

- (185) *e: vĩdja:rthũ-lũ-: ĩNTĩ-kĩ vǎɕ:-e:-rũ
 any student-PL.NOM-EMPH house-LAT come-PERF-3PL.HUM
 **‘Any students came to the house.’

- (186) *āḍḍū-gūrū kāNṬe: tāk:ūvā-māṇḍī vīdja:rthū-lū vāc:-e:-rū*
 five-HUM than less-HUM student-PL.NOM come-PERF-3PL.HUM
 ‘Fewer than five students came.’

Co-Intersective

- (187) *āṇḍārū pīl:ā-lū ēk:ūvā e:R-āvā-rū*
 all.HUM child-PL.NOM too much cry-NEG-IMPF.3PL.HUM
 ‘Not all children cry a lot.’

Proportional

- (188) *na:lūg-o: ōṅṭū kāNṬe: tāk:ūvā-māṇḍī vīdja:rthū-lū*
 four-ORD part than less-HUM student-PL.NOM
pāṛīkṣā pass āj:-e:-rū
 Exam pass become-PERF-3PL.HUM
 ‘Less than a quarter of the students passed the exam.’
- (189) *pāḍī-māṇḍī-lo: e:Rū-gūrū kāNṬe: ēk:ūvā vīdja:rthū-lū*
 ten-HUM-LOC seven-HUM than more student-PL.NOM
Players ka:lč-ā-rū
 Players.ACC smoke-NEG-IMPF.3PL.HUM
 ‘Not more than seven out of ten students smoke Players.’

15.3.3.2 NPI-Licensing

Decreasing NPs license NPIs, as do verbal negation and the interrogative construction. However, a decreasing NP such as ‘Neither Ram nor Babu...’ is not translated as such into Telugu; rather, it is translated as a combination of the increasing NP ‘Either Ram or Babu...’ and verbal negation (which licenses the NPI in the Telugu sentence). The increasing NP and verbal negation thus jointly convey the decreasing NP ‘Neither Ram nor Babu...’ (which, in the English sentence, independently licenses the NPI).

- (190) a. *Ram u: Babu u: lā-lo: ēvārū:- ēp:ūRu: Moscow-kī vēL:ā-le:dū*
 Ram.NOM and Babu.NOM and PL-LOC anyone.NOM-EMPH ever MOSCOW-LAT go-NEG.PERF
 ‘Neither Ram nor Babu has ever been to Moscow.’
- b. *Ram o: Babu o: ēp:ūRu: Moscow-kī vēL:ā-le:dū*
 Ram.NOM or Babu.NOM or ever MOSCOW-LAT go-NEG.PERF
 ‘Either Ram or Babu has never been to Moscow.’

(Incidentally, the pre-verbal position gets the focus: either the city name or ‘ever’ can occur there, accordingly.) Predictably, the same increasing NP used in the *affirmative* construction fails to license the NPI (be it ‘ever’ [ɛ̃p:ũRu:] or <ever happen-whether> [ɛ̃p:ũRũ ăj-ĩna:] – see below – and even with PL subject-verb agreement), producing an ill-formed sentence:

- (191) *Ram ga:ni: Babu ga:ni: ɛ̃p:ũRu: Moscow-kĩ vĕL:-e:-Rũ
 Ram.NOM either Babu.NOM either ever MOSCOW-LAT go-PERF-3SG.MASC.FAM
 *‘Either Ram or Babu has ever been to Moscow.’

The interrogative construction does license the NPI, albeit with a modified version of ‘ever’, <ever happen-whether> [ɛ̃p:ũRũ ăj-ĩna:], used in both interrogative and decreasing NP constructions, as in (197).

- (192) Ram ga:ni: Babu ga:ni:
 Ram.NOM either Babu.NOM either

 ɛ̃p:ũRũ ăj-ĩna: Moscow-kĩ vĕL:-e:-rũ-a:
 ever happen-whether MOSCOW-LAT go-PERF-3PL.HUM-QP
 ‘Has either Ram or Babu ever been to Moscow?’

Another example of an English decreasing NP, this time co-occurring with the NPI ‘any’, illustrates again the Telugu <increasing NP + verbal negation> combination:

- (193) ĩd:ărũ kăNte: ɛ̃k:ũvă-măndĩ vĭdja:rthũ-lũ
 two.HUM than more-HUM student-PL.NOM

 kđT:ũ-lo: e: păkşũ-lă-nĩ ɕu:Ră-le:dũ
 store-LOC any bird-PL-ACC see-NEG.PERF
 ‘Not more than two students saw any birds in the store.’

The <two.HUM than more-HUM> quantifier forms a constituent in Telugu, mirroring the English construction, although the verbal negation element occurs outside the quantifier (sentence-finally), in contrast with English.

Additionally, [e:] without the vowel lengthening on the direct object facilitates wide scope negation (over the entire clause), whereas [e:] with vowel lengthening on the direct object facilitates narrow scope negation (over just the direct object NP).

- (194) *īd:ārū* *kāNTe:* *ēk:ūvā-māndī* *vidja:rthū-lū*
 two.HUM than more-HUM student-PL.NOM
kōT:ū-lo: *e:* *pākṣū-lā-nī:* *ču:Rā-le:dū*
 store-LOC any bird-PL-ACC-EMPH see-NEG.PERF
 ‘More than two students saw no birds in the store.’

Once again, the increasing NP in the *affirmative* construction fails to license the NPI:

- (195) **īd:ārū* *kāNTe:* *ēk:ūvā-māndī* *vidja:rthū-lū*
 two.HUM than more-HUM student-PL.NOM
kōT:ū-lo: *e:* *pākṣū-lā-nī:* *ču:s-e:-rū*
 store-LOC any bird-PL-ACC-EMPH see-PERF-3PL.HUM
 *‘More than two students saw any birds in the store.’

However, a *decreasing* expression in the affirmative construction does license the NPI, albeit with a modified version of ‘any’, used in both interrogative (not instantiated here) and decreasing expression constructions: <any (NP) happen-whether> [*e:* (NP) *āj-īna:*].

Decreasing NP Licensing the NPI ‘any’ in the Affirmative Construction:

- (196) *īd:ārū* *kāNTe:* *tāk:ūvā-māndī* *vidja:rthū-lū*
 two.HUM than few-HUM student-PL.NOM
kōT:ū-lo: *e:* *pākṣū-lā-nī* *āj-īna:* *ču:s-e:-rū*
 store-LOC any bird-PL.ACC happen-whether see-PERF-3PL.HUM
 ‘Fewer than two students saw any birds in the store.’

Decreasing NP Licensing the NPI ‘ever’ in the Affirmative Construction:

- (197) *īk:āRā* *ūn-nā* *vidja:rthī-lā-lo:* *sāgāmū* *kāNTe:* *tāk:ūvā-māndī*
 here be-REL.PERF student-PL-LOC half than less-HUM
ēp:ūRū *āj-īna:* *Pinsk-kī* *vēL:-e:-rū*
 when happen-whether Pinsk-LAT go-PERF-3PL.HUM
 ‘Less than half the students here have ever been to Pinsk.’

15.3.4 Boolean Compounds of Determiners

15.3.4.1 D-Quantifiers

- (198) vāč:-e: sāmvaṭsārāmū kāni:sāmū ḱd:ārū vīdja:rthū-lā-kī
 come-REL.IMPF Year at least two.HUM student-PL-DAT

Dāb:ū vās-tūn-dī ga:ni:
 money.NOM come-IMPf-3SG.NONHUM but

pādī kāNTe: ek:ūvā-māndī-kī ra:-dū
 ten than more-HUM-DAT come-NEG.3SG.NONHUM

‘At least two *but not* more than ten students will get money next year.’

Attempting to form a boolean compound of an increasing determiner with a decreasing one produces an ill-formed sentence, because the increasing determiner e.g. ‘at least two’ [kāni:sāmū ḱd:ārū] selects for affirmative verbs, whereas the decreasing determiner e.g. ‘not more than ten’ requires a verbal negation.

- (199) *vāč:-e: sāmvaṭsārāmū kāni:sāmū ḱd:ārū-kī ga:ni:
 come-REL.IMPF year at least two.HUM-DAT but

pādī kāNTe: ek:ūvā-māndī vīdja:rthū-lā-kī ka:dū
 ten than more-HUM student-PL-DAT not

scholarship vās-tūn-dī/ra:-dū
 scholarship.NOM come-IMPf-3SG.NONHUM/come-NEG.IMPf.3SG.NONHUM

‘At least two *but not* more than ten students will get scholarships next year.’

- (200) mādhja:nāmū-lū ča:la:-māndī kāvū-lū nīd:ārā-po:-ta:-rū ga:ni:
 afternoon-PL many-HUM poet-PL sleep-go-IMPf-3PL.HUM but

āndārū:- ka:dū
 all.CT.HUM-EMPH not

‘Many *but not* all poets sleep in the afternoon.’

Not surprisingly, as illustrated below, the boolean compound consisting of two disjuncts with the same monotonicity value poses no problem, since a single verb of the appropriate polarity (negative in this case) serves both disjuncts.

- (201) prāti: vīdja:rthī ga:ni: prāti: gūrūvū ga:ni: īNTī-kī ra:-le:dū
 every student.NOM DISJ every teacher.NOM DISJ house-LAT come-NEG.PERF
 ‘Neither every student nor every teacher came to the house.’

15.3.4.2 A-Quantifiers

Conjoined A-quantifiers also enforce the same monotonicity value on their conjuncts.

- (202) Ram kăni:sămũ rĕNDũ sa:rĩ-lũ Hyderabad-kĩ
 Ram.NOM at least two.NONHUM time-PL Hyderabad-LAT
 vĕL:-e:-Rũ ga:ni: ārdũ kăNTe: ěk:ũvā sa:rĩ-lũ ka:dũ
 go-PERF-3SG.MASC.FAM but five than more time-PL NEG element.SG
 ‘Ram has gone to Hyderabad at least twice but not more than five times.’
- (203) *Ram kăni:sămũ rĕNDũ sa:rĩ-lũ ga:ni:
 Ram.NOM at least two.NONHUM time-PL but
 ārdũ kăNTe: ěk:ũvā sa:rĩ-lũ ka:dũ Hyderabad-kĩ vĕL:-e:-Rũ
 five than more time-PL NEG element.SG Hyderabad-LAT go-PERF-3SG.MASC.FAM
 ‘Ram has gone to Hyderabad at least twice but not more than five times.’
- (204) ke:ndri:jā en:ĩkă-lũ-lo: Madhuri Congress party-kĩ tărăčũ-ga:
 Central election-PL-LOC Madhuri.NOM Congress party-DAT frequent-ly
 vote ve:s-ĩn-dĩ ga:ni: prăti: sa:rĩ ka:dũ
 vote cast-PERF-3SG.FEM.FAM but every time not
 ‘In the national elections, Madhuri has frequently but not always voted for the Congress party.’

As in the example above, conjoining adverbial quantifiers of opposite monotonicity results in an ill-formed sentence:

- (205) *ke:ndri:jā en:ĩkă-lũ-lo: Madhuri Congress party-kĩ tărăčũ-ga: ka:ni:
 Central elections- PL-LOC Madhuri.NOM CONGRESS PARTY frequent-ly but
 prăti: sa:rĩ ka:dũ vote ěe:s-ĩn-dĩ
 every time not vote do-PERF-3SG.FEM.FAM
 ‘In national elections Madhuri has frequently but not always voted for the Congress Party’

15.3.5 Exception Phrases

Considering the head-final typology of Telugu, it appears that exception phrases form a constituent with ‘every’ [prăti:] in:

- (206) Ram tāp:a: prāti: vīdja:rthī
 Ram except every student.NOM
 class-kī pēndāra:Le: vāč:-e:-Rū
 class-LAT Early come-PERF-3SG.MASC.FAM
 ‘Every student but Ram came to class early.’

In the case of decreasing determiners which select negated verbs, the exception phrase-determiner constituent co-occurs with, but does not include, the verbal negation morpheme (which, in combination with the Telugu determiner ‘any’ [e:] represents the English determiner ‘no’):

- (207) Ram tāp:a: e: vīdja:rthī:-
 Ram except any student.NOM-EMPH
 īl:ū a:lāsājāmū-ga: vādālā-le:dū
 house.ACC late-ly leave-NEG.PERF
 ‘No student but Ram left the house late.’

15.3.6 *Only*

For expressions involving ‘only’, [e:] follows the rest of the NP:

- (208) Ram-kī e: Dāb:ū vāč:-īn-dī
 Ram-DAT only money.NOM come-PERF-3SG.NONHUM
 ‘Only Ram got money.’

Although (213) is grammatical, speakers prefer to insert a HUM cardinal identifier immediately following HUM nouns:

- (209) Ram ōkāRī-kī-e: Dāb:ū vāč:-īn-dī
 Ram one.CARDPRO.HUM-DAT-only money.NOM come-PERF-3SG.NONHUM
 ‘Only Ram got money.’

- (210) vīdja:rthū-lū e: īNTī-kī vāč:-e:-rū
 student-PL.NOM only house.LAT come-PERF-3PL.HUM
 ‘Only students came to the house.’

(210) is even more natural with contrastive ‘however’:

- (211) vīdja:rthū-lū ma:trāmū e: īNTī-kī vāč:-e:-rū
 student-PL.NOM however only house.LAT come-PERF-3PL.HUM
 ‘Only students came to the house.’

15.3.7 Partitives: *D + of + NP_{def. pl.}*

15.3.7.1 Cardinal

- (212) vīdja:rthī-lā-lo: īd:ārū e: pārīkṣā pass āj:-e:-rū
 student-PL-LOC two.HUM.NOM only exam.ACC pass become-PERF-3PL.HUM
 ‘Just two of the students passed the exam.’
- (213) a:/na:/Ram-jōk:ā vīdja:rthī-lā-lo: īd:ārū e:
 those/1SG.GEN/Ram-GEN student-PL-LOC two.HUM.NOM only
 pārīkṣā pass āj:-e:-rū
 exam.ACC pass become-PERF-3PL.HUM
 ‘Just two of those/my/Ram’s students passed the exam.’

15.3.7.2 Interrogative

In the example below the determiner is an interrogative pronoun:

- (214) Ø/a: vīdja:rthī-lā-lo: ēvārū pārīkṣā pass āj:-e:-rū
 the/those student-PL-LOC who.NOM exam pass become-PERF-3PL.HUM
 ‘Which of the/those students passed the exam?’

15.3.7.3 Universal

- (215) āndārū vīdja:rthū-lū-: pass āj:-e:-Rū
 all.CT.HUM student-PL.NOM-EMPH pass become-PERF-3PL.HUM
 ‘All [vs. some] of the students passed.’
- (216) ??āndārū vīdja:rthū-lū pass āv:ā-le:dū
 all.CT.HUM student-PL.NOM pass become-NEG.PERF
 ‘Not all of the students passed.’

Postposing the quantifier *āndārū* ‘all’ above renders the example more natural:

- (217) vīdja:rthū-lū āndārū-: pass āv:ā-le:dū
 student-PL.NOM all.CT.HUM-EMPH pass become-NEG.PERF
 ‘Not all of the students passed.’ [i.e. They all **failed**.]

We have seen that ‘each’, ‘both’, and ‘all’ trigger emphatic vowel lengthening of the NP-final word, forcing the NP outside the scope of negation:

- (218) āndārū vīdja:rthū-lū-: pass āv:ā-le:dū
 all.CT.HUM student-PL.NOM pass become-NEG.PERF
 ‘All of the students didn’t pass.’ [i.e. They all **failed**.]

15.3.7.4 Proportional

The examples below show that partitives in Telugu are syntactically complex.

- (219) *īd:ārū vīdja:rthū-lū-: nāv:-e:-rū*
 two.HUM student-PL.NOM-EMPH laugh-PERF-3PL.HUM
 ‘Both of the students laughed.’
- (220) *īd:ārū-lo: e: vīdja:rthī-: nāv:ā-le:dū*
 two.HUM-LOC any student.NOM-EMPH laugh-NEG.PERF
 ‘Neither of the students passed.’
- (221) *ēnāb^hāī śa:tāmū kāNTe: ēk:ūvā-māndī vīdja:rthū-lū nāv:-e:-rū*
 80 percent Than more-HUM student-PL.NOM laugh-PERF-3PL.HUM
 ‘More than eighty percent of the students laughed.’
- (222) *a:rū-lo: āīdū ōntū-lā kāNTe: ēk:ūvā-māndī vīdja:rthū-lū*
 Six-LOC five part-PL.GEN than more-HUM student-PL.NOM
nāv:-e:-rū
 laugh-PERF-3PL.HUM
 ‘More than five sixths of the students laughed.’
- (223) *ča:la:-māndī vīdja:rthū-lū nāv:-e:-rū*
 Most student-PL.NOM laugh-PERF-3PL.HUM
 ‘Most of the students laughed.’

15.3.8 Quantificational NPIs Under the Scope of a Decreasing Operator

15.3.8.1 D-Quantifier ‘any’

- (224) a. *na:-dāg:īrā e: ārTīpāL-Lū-: le:-vū*
 1SG.GEN-ADES any banana-PL.NOM-EMPH exist.NEG-
 3PL.NONHUM
 -OR-
- b. *na:-dāg:īrā ārTīpāL-Lū e:mi: le:-vū*
 1SG.GEN-ADES banana-PL.NOM any.NONHUM exist.NEG-3PL.NONHUM
 ‘I don’t have any bananas.’

15.3.8.2 Variable Interpretation of A-Quantifiers

The A-quantifier [əp:ũRu:] is variably interpreted as ‘always’ under the scope of an increasing expression, and as ‘ever’ under the scope of a decreasing one:

- (225) a. ātānũ əp:ũRu: pōd:ũn:ā vās-ta:-Rũ
 3SG.MASC.FAM1.NOM always morning come-IMPF-3SG.MASC.FAM
 ‘He always arrives in the morning.’
- b. ātānũ əp:ũRu: pōd:ũn:ā ra:-R-ũ
 3SG.MASC.FAM1.NOM ever morning come-3SG.MASC.FAM-NEG.IMPF
 ‘He never arrives in the morning.’/‘He doesn’t ever arrive in the morning.’

15.3.9 Predicate Quantifiers

- (226) vīdja:rthũ-lũ ěk:ũvā-ga: ũn-na:-rũ
 student-PL.NOM many-ly exist-IMPF-3PL.HUM
 ‘The students were many.’

The above sentence is marginal at best, and the attempt to use a cardinal numeral as a predicate results in a mere lexical rearrangement of a standard existential sentence:

- (227) vīdja:rthũ-lũ mũg:ũrũ ũn-na:-rũ
 student-PL.NOM three.HUM exist-IMPF-3PL.HUM
 ‘There were three students.’ BUT NOT ‘The students were/numbered three.’

15.3.10 DP Quantifiers

Telugu does present DP quantifiers, as instantiated below:

- (228) a. tie-lũ čāvākā-ga: ũn-na:-jĩ āñĩ
 tie-PL.NOM cheap-ly exist-PERF-3PL.NONHUM that
 ‘The ties were inexpensive, so...’
- b. mu:Rũ/ kōn:ĩ/ ča:la:/ ān:i: kōn-na:-nũ
 three/several/many/all buy-PERF-1SG
 ... I bought three/several/many/all.’

In English bare *each* is awkward (*each one* is better) in the above context, in Telugu it requires a GEN case marker:

- c. *prāti:-dī kōn-na:-nū*
 each-GEN buy-PERF-1SG
 ... I bought each of them.'

15.3.11 Distribution

15.3.11.1 Grammatical Categories

In Telugu, QNPs do occur in all major grammatical functions:

Subject

- (229) *mūg:ūrū gūrūvū-lū Ram-nī kōT:ū-lo: ču:s-e:-rū*
 three.HUM teacher-PL.NOM Ram-ACC store-LOC see-PERF-3PL.HUM
 'Three teachers saw Ram in the store.'

Object

- (230) a. *Ram pāriḱṣā-lo: mu:Rū prāšnā-lū e: čādīv-e:-Rū*
 Ram.NOM exam-LOC three question-PL.ACC only read-PERF-3SG.MASC.FAM
 'Ram read just three questions on the exam.'
- b. *ne:nū ḍk:āTī tāp:a: ān:ī prāšnā-lū:-*
 1SG.NOM one.CARDPRO.NONHUM except all.CT.NONHUM question-PL.ACC-EMPH
čādīv-e:-nū
 read-PERF-1SG
 'I read all but one question/all but one of the questions.'
- c. ***Sita na:lūgū-lo: mu:Rū oṅtū-lā prāšnā-lū čādīv-īn-dī***
Sita four-LOC Three part-PL.GEN question-PL.ACC read-PERF-3SG.FEM.FAM
 'Sita read three quarters of the questions.'
- d. *Ram kōn:tā-māndī vīdja:rthū-lā-kī ūt:ārāmū pāmp-e:-Rū*
 Ram.NOM several-HUM student-PL-DAT letter.ACC send-PERF-3SG.MASC.FAM
 'Ram sent a letter to several students.'
- e. *Ram Āndārū vīdja:rthū-lā-kī ūt:ārāmū pāmp-e:-Rū*
 Ram.NOM all.CT.HUM student-PL-DAT letter.ACC send-PERF-3SG.MASC.FAM
 'Ram sent a letter to all the students.'
- f. *Ram sāgāmū-māndī da:ka: Vīdja:rthū-lū-kī*
 Ram.NOM several-HUM about student-PL-DAT
ūt:ārāmū pāmp-e:-Rū
 letter.ACC send-PERF-3SG.MASC.FAM
 'Ram sent a letter to about half the students.'

Object of Postposition

- (231) āb:a:ī mūg:ūrū Sne:hītū-lā-to: a:Rū-kūn-na:-Rū
 boy.NOM three friend-PL-with play-REFL-PERF-3SG.MASC.FAM
 ‘The boy played with three friends.’

Possessor

- (232) a. īd:ārū vīdja:rthū-lā doctor-lū vāč:-e:-rū
 two.HUM student-PL.GEN doctor-PL.NOM come-PERF-3PL.HUM
 ‘Two students’ doctors came.’
- b. prāti: vīdja:rthī(-jōk:ā) doctor vāč:-e:-rū
 every student.GEN doctor.NOM come-PERF-3SG.MASC.FRM
 ‘Every student’s doctor came.’
- c. Ram ča:la:-māndī vīdja:rthī-lā doctor-lā-nī
 Ram.NOM most student-PL.GEN doctor-PL-ACC
 ču:s-e:-Rū
 see-PERF-3SG.MASC.FAM
 ‘Ram saw most of the students’ doctors.’

15.3.11.2 Special Positions for QNPs vs. Definite NPs?

Telugu does not reserve any special positions for QNPs vs. Definite NPs.

- (233) prāti: vīdja:rthī prāti: prāšnā-kī: ḍāva:bū ra:s-e:-rū
 every student.NOM every question-DAT-EMPH answer write-PERF-3PL.HUM
 ‘Every student answered every question.’
- (234) prāti: vīdja:rthī:- prāti: prāšnā-kī ḍāva:bū ra:jā-le:dū
 every student.NOM-EMPH every question-DAT answer write-NEG.PERF
 ‘Not every student answered every question.’

15.3.11.3 Multiple-Argument Binding by QNPs: Scope Ambiguities?

Multiple arguments of a predicate can, indeed, be bound simultaneously by multiple QNPs, yielding scope ambiguities.

- (235) ēvār-o: ōkā editor prāti: ūt:ārāmū
 anyone.NOM-some one.CARDADJ editor.NOM every letter.ACC
 čādīv-e:-Rū
 read-PERF-3SG.MASC.FAM
 ‘Some editor read every letter.’/ ‘For every letter some editor read it’

- (236) mǔg:ǔrǔ instructor-lǔ wǒndǎ Pǎřřkřǎ-lǎ-nř čǎđřv-e:-rǔ
 three.HUM instructor-PL.NOM 100 exam-PL-ACC read-PERF-3PL.HUM
 ‘Three instructors read 100 exams.’

Forced and Restricted Readings

In English, the adverbials ‘between them’ and ‘in total’ force group/collective readings. . .

- (237) mǔg:ǔrǔ gǔrǔvǔ-lǔ kǎřřř
 three.CT.HUM teacher-PL.NOM together
 wǒndǎ pǎřřkřǎ-lǎ-nř čǎđřv-e:-rǔ
 100 exam-PL-ACC read-PERF-3PL.HUM
 ‘Three instructors read 100 exams between them/in total.’
 [just group/collective reading]

. . . and ones like *apiece* and (binominal) *each* that force distributive subject wide scope (SWS) readings:

- (238) mǔg:ǔrǔ guruvǔ-lǔ ōk-ōk:ǎL:ǔ
 three.CT.HUM teachers-PL.NOM one-one.CARDPRO.HUM.PL.NOM
 wǒndǎ pǎřřkřǎ-lǎ-nř grade če:s-e:-rǔ
 100 exam-PL-ACC grade do-PERF-3PL.HUM
 ‘Three instructors graded 100 exams apiece/each.’

Scope ambiguities may result when multiple arguments of a given predicate are bound simultaneously by QNPs:

- (239) pǎřřř: vřđja:rthř řělavǔ-lǎ-lo:
 each student.NOM vacation-PL-LOC
 ōk:ǎ pǔřřkǎmǔ čǎđřv-e:-Rǔ
 one.CARDADJ book.ACC read-PERF-3SG.MASC.FAM
 ‘Each student read one book over the vacation. (Scope ambiguous)’

Modified numerals in object position tend to force object narrow scope (ONS):

- (240) pǎřřř: vřđja:rthř řělavǔ-lǎ-lo:
 each student.NOM vacation-PL-LOC
 kǎni:sǎmǔ ōk:ǎ pǔřřkǎmǔ čǎđřv-e:-Rǔ
 at least one.CARDADJ book.ACC read-PERF-3SG.MASC.FAM
 ‘Each student read at least one book over the vacation.’
 (Just ONS reading)

Decreasing object DPs are usually interpreted just in situ (ONS):

- (241) e: politicianũ-: kōT:ũ-lo: prāti: ba:lā-nī mūd:ũ pēT:ũ-ko:-le:dũ
 any politician.NOM-EMPH store-LOC every baby-ACC kiss put-REFL-NEG.PERF
 ‘No politician kissed every baby in the store.’ (Just SWS)

In this case only the subject (with wide scope) shows vowel lengthening, the object does not, even though it would in neutral contexts. Note, too, that in (262), with both subject and object having vowel lengthening, we just get the SWS reading.

- (242) prāti: politicianũ-: kōT:ũ-lo:
 every politician.NOM-EMPH store-LOC
 e: ba:lā-nī-: mūd:ũ pēT:ũ-ko:-le:dũ
 any baby-ACC-EMPH kiss put-REFL-NEG.PERF
 ‘Every politician kissed no baby in the store.’ (Just SWS)

Without the emphatic vowel lengthening on the subject it gets narrow scope:

- (243) prāti: politician kōT:ũ-lo:
 every politician.NOM store-LOC
 e: ba:lā-nī-: mūd:ũ pēT:ũ-ko:-le:dũ
 any baby-ACC-EMPH kiss put-REFL-NEG.PERF
 ‘Every politician kissed no baby in the store.’ (Just SNS)

- (244) ōk:ā vīdja:rthī e: pāṛīkṣā-lo: e: pṛāśnā-kī: ḍāva:bū ra:jā-le:dũ
 one.CARDADJ student.NOM only exam-LOC any question-DAT-EMPH answer write-NEG.PERF
 ‘Just one student answered no question on the exam.’ (Just SWS)

- (245) ōk:āRū tāp:a: āndārū vīdja:rthū-lū pāṛīkṣā-lo:
 one-CARDPRO.HUM except all.CT.HUM student-PL.NOM exam-LOC
 kāñśāmū ōk:ā pṛāśnā-kī ḍāva:bū ra:s-e:-rū
 at least one.CARDADJ question-DAT answer write-PERF-3PL.HUM
 ‘All but one student answered at least one question on the exam.’ (Just SWS)

In Telugu, as in English (*each* vs *every*), lexical choice of quantifier, even among semantically similar ones, may affect the permissible scope readings:

- (246) *ēvār-o:* *ōkā* *vīdja:rthī*
 anyone.NOM-some one.CARDADJ student.NOM
ān:ī *pūstāka:-lū(-nī)* *čāḍiv-e:-Rū*
 all.CT.NONHUM book-PL.ACC read-PERF-3SG.MASC.FAM
 ‘Some student [individually] read all the books.’ (just SWS)

- (247) *ēvār-o:* *ōkā* *vīdja:rthī* *prāti: pūstākamū(-nī)* *čāḍiv-e:-Rū*
 anyone.NOM-some one.CARDADJ student.NOM every book.ACC read-PERF-3SG.MASC.FAM
 ‘Some student read every book.’ (OWS as well as SWS)

In English, *all (the)* differs from *every* and even more so *each* in allowing various sorts of collective interpretations, whereas *every* and *each* are distributive in interpretation. So *all the N* occurs naturally with collective predicates, whereas *every/each+N* do not. Similarly *āṇḍārū* ‘all’ is distinguished from *prāti*:

- (248) *āṇḍārū* *vīdja:rthū-lū* *nīn:ā* *ra:trī*
 all.CT.HUM.PL student-PL.NOM Yesterday night
īNTī-lo: *kālūs-kūn-na:-rū*
 house-LOC meet-REFL-PERF-3PL.HUM
 ‘All the students gathered/met in the house last night.’

- (249) **prāti:* *gūrūvū* *nīn:ā* *ra:trī*
 each/every teacher-SG.NOM yesterday night
īNTī-lo: *kālūs-kūn-na:-Rū*
 house-LOC meet-REFL-PERF-3SG.MASC.FAM
 *‘Each/every teacher gathered/met in the house last night.’

For the following sentence, in Telugu as in English, the collective/group level interpretation of <one picture, many students> is interpreted preferentially, over the questionable distributive interpretation of <as many pictures as students>.

- (250) *bāl:ā-mi:dā* *āṇḍārī* *vīdja:rthī-lā* *foTo* *ūn-dī*
 table-SUP all.CT.HUM student-PL.GEN photo.NOM exist.IMP-3SG.NONHUM
 ‘A picture of all the students was on the table.’ (Scope ambiguous)

By contrast, the quantifier ‘each’ forces a distributive interpretation.

- (251) *bāl:ā-mi:dā* *prāti:* *vīdja:rthī* *foTo* *ūn-dī*
 table-SUP each student.GEN photo.NOM exist.IMP-3SG.NONHUM
 ‘A picture of each student was on the table.’ [As many pictures as students]

The scope ambiguity asymmetry illustrated earlier for the declaratives (*'Some editor read all/every letter'*) extends to *wh*-questions as well. The quantifiers 'most' and 'all' force certain readings, whereas others yield scope ambiguity. In the example below, the SWS reading is forced, since the quantifier 'most' renders the OWS reading undefined (usually there is no unique majority).

- (252) e: vīdja:rthī ěk:ūvā prāśnā-lā-kī dḷāva:bū ra:s-e:-Rū
 Which student.NOM more question-PL-DAT answer write-PERF-3SG.MASC.FAM
 'Which student answered the most questions?'

The SWS reading is also forced in the example below with 'all'.

- (253) e: vīdja:rthī ān:i prāśnā-lū-kī
 which student.NOM all.CT.NONHUM question-PL-DAT
 dḷāva:bū ič:-e:-Rū
 answer give-PERF-3SG.MASC.FAM
 'Which student answered all the questions?'

Factors which influence the scope reading: (1) choice of determiner, (2) word order and (3) reduplication.

Since *wh*-phrases usually occur immediately pre-verbally in Telugu (similar to many head-final languages), the less usual but perfectly grammatical fronting of the subject [e:vīdja:rthī] 'which student' to the sentence-initial position likely accounts for the exclusivity of the SWS reading.

- (254) e: vīdja:rthī prāti:-ōkā prāśnā-kī
 which student.NOM each-one.CARDADJ question-DAT
 dḷāva:bū ič:-e:-Rū
 Answer give-PERF-3SG.MASC.FAM
 'Which student answered each question?' (SWS only)

Below, the sentence-initial position of the object forces the OWS interpretation:

- (255) prāti:-ōkā prāśnā-kī e: vīdja:rthī
 each-one.CARDADJ question-DAT which student.NOM
 dḷāva:bū ič:-e:-Rū
 Answer give-PERF-3SG.MASC.FAM
 'Which student answered each question?' (OWS only)

Below, the OWS reading, one particular question answered in common by each student, is slightly more likely. . .

- (256) *prāti: vīdja:rthī e: prāśnā-kī ḍāva:bū iḥ:-e:-Rū*
 each student.NOM which question-DAT answer give-PERF-3SG.MASC.FAM
 ‘Which question did each student answer?’ (OWS more likely)

The SWS reading, each student answers independently of the rest (although not ruling out overlap – even complete overlap – of questions) is achieved more naturally by the reduplication in the following sentence:

- (257) a. *prāti: vīdja:rthī e:-e: prāśnā-kī ḍāva:bū iḥ:-e:-Rū*
 each student.NOM which-which question-DAT answer give-PERF-3SG.MASC.FAM
 ‘Which question did each student answer?’ (SWS only)

- b. *prāti:-ōkā vīdja:rthī e: prāśnā-kī*
 each-one.CARDADJ student.NOM which question-DAT

ḍāva:bū iḥ:-e:-Rū
 Answer give-PERF-3SG.MASC.FAM

‘Which question did each student answer?’ (Both SWS and OWS)

- c. *āndārū vīdja:rthū-lū e: prāśnā-kī*
 all.CT.HUM student-PL.NOM which question-DAT

ḍāva:bū iḥ:-e:-rū
 Answer give-PERF-3PL.HUM

‘Which question did all the students answer?’ (Just OWS, as in English)

Self-Embedding of QNPs

Are the choices of Determiners on the whole NP and on the embedded NP fairly independent, or are the expressions scope ambiguous?

In Telugu as in English, ambiguity results from self-embedding of QNPs:

- (258) *prāti: senator-jōk:ā sne:hītūRū*
 every senator.GEN friend
 ‘a friend of every senator’

- (259) *prāti: senator-jōk:ā ēvār-o: sne:hītūRū*
 every senator-GEN anyone.NOM-some friend
 ‘some friend of every senator’

For the following cases, ‘two friends...’ and ‘every friend...’, the distributive readings (each senator’s set of friends is considered independently) are more likely than the collective interpretations (each friend in question is common to all the senators).

(260) praṭi: senator-jōk:ā ḍ:ārū sne:hītū-lū
 every senator-GEN two.HUM friend-PL
 ‘two friends of every senator’

(261) praṭi: senator-jōk:ā praṭi: sne:hītūRū
 every senator-GEN every friend
 ‘every friend of every senator’

Ambiguity Between Nominal and Verbal Quantifiers

In Telugu as in English, both the subject and temporal wide scope readings are available:

(262) ḍ:ārū āb:a:ī-lū mu:Rū sa:rī-lū pa:R-e:-rū
 two.HUM boy-PL.NOM three time-PL sing-PERF-3PL.HUM
 ‘Two boys sang three times.’

15.3.12 Distributive Numerals

In Telugu, the bound morpheme [-e:sī] ‘(distributive) each’ can be appended to numerals to convey the distributive meaning upon the subject:

(263) va:L:ū rēNDū-e:sī pēT:ē-lū mo:s-ta:-rū
 3PL.NOM two.NONHUM-DISTR suitcase-PL.ACC carry-IMP-3PL.HUM
 ‘They carry two suitcases each.’

(264) ātānū Brundisium Tarentum Sipontum-lā-lo:
 3SG.MASC Brundisium Tarentum Sipontum-PL-LOC
 ḍkāTī-e:sī legion(-nī) station če:s-e:-rū
 one.CARDPRO.NONHUM-DISTR legion.ACC station do-PERF-3SG.MASC.FAM
 ‘He stationed one legion each at Brundisium, Tarentum, and Sipontum.’

(265) vīdja:rthū-lū ḍ:ārū-e:sī kju:-lo: nūñč-ūn-na:-rū
 student-PL.NOM two.HUM-DISTR queue-LOC stand up-exist-PERF-3PL.HUM
 ‘The students lined up two by two.’

- (266) Ram-ů Suneel-ů
 Ram.NOM-and Suneel.NOM-and
 mu:Rů-e:sĩ pěT:ě-lă-nĩ mo:s-e:-rũ
 three-each.NONHUM-DISTR suitcase-PL.ACC carry-PERF-3PL.HUM
 ‘Ram and Suneel /Two men carried three suitcases each.’

15.3.13 Mass vs. Count Quantifiers Without Classifiers

15.3.13.1 D-Quantifiers Combining with Count but Not Mass Nouns

Cardinal Numbers

- (267) a. pďđ-mďđđ ħb:a:ĩ-lũ
 ten-HUM boy-PL
 ‘10 boys’
 b. pďđ kũk:ă-lũ
 ten.NONHUM dog-PL
 ‘10 dogs’
 c. pďđ ĩL-Lũ
 ten.NONHUM house-PL
 ‘10 houses’

It is assumed below that the type reading of quantized (plural) mass nouns is not being considered; hence the ungrammaticality of a count D-quantifier applied to a mass noun:

- d. *pďđ pi:čũ
 ten.NONHUM cotton
 *‘10 cotton’

Existential Quantifier ‘Some’

- (268) kňntă-mďđđ vđđja:rthũ-lũ
 some-CT.HUM student-PL
 ‘some students’

We note that once you remove the [-mďđđ] for NONHUM nouns, [kňntă] combines with just mass nouns.

- (269) a. kňntă pi:čũ
 some.MS.NONHUM cotton
 ‘some cotton’

- b. kōn:i/*kōntā kūk:ā-lū
 some.CT.NONHUM dog-PL
 ‘some dogs’

Universal Quantifier ‘All’

- (270) a. āndārū vīdja:rthū-lū
 all.CT.HUM student-PL
 ‘all ((of) the) students’
- b. ān:i kūk:ā-lū
 all.CT.NONHUM dog-PL
 ‘all ((of) the) dogs’
- c. ān:i ĩL-Lū
 all.CT.NONHUM house-PL
 ‘all ((of) the) houses’
- d. *ān:i pi:cū
 all.CT.NONHUM Cotton
 ‘all ((of) the) cotton’

Interrogative ‘How Many’

- (271) ěntā-māndī vīdja:rthū-lū
 how much-CT.HUM student-PL
 ‘how many students’

Again, once you remove the [-māndī] for NONHUM nouns, [ěntā] combines with just mass nouns.

- (272) a. ěntā pi:cū
 how much.MS.NONHUM cotton
 ‘how much cotton’
- b. ěn:i/*ěntā kūk:ā-lū
 how many.CT.NONHUM dog-PL
 ‘how many dogs’

Proportional Quantifiers

- (273) a. pādī śa:tāmū U.S. a:Rā-va:L-Lū
 10 percent U.S. woman-PL
 ‘ten percent of U.S. women’

- b. pādī śa:tāmū kūk:ā-lū
10 percent dog-PL
'ten percent of dogs'
- c. pādī śa:tāmū bōm:ā-lū
10 percent doll-PL
'ten percent of dolls'
- d. *pādī śa:tāmū baṅga:rāmū
10 percent gold
'*ten percent of gold'

15.3.13.2 D-Quantifiers Combining with Both Count and Mass Nouns

The D-quantifiers below require the HUM particle *-māndī* for human nouns.

- (274) a. ča:la:-māndī āb:ājī-lū
a lot of-HUM boy-PL
'a lot of boys'
- b. ča:la: kūk:ā-lū
a lot of.NONHUM dog-PL
'a lot of dogs'
- c. ča:la: k^hīTīki:-lū
a lot of.NONHUM window-PL
'a lot of windows'
- d. ča:la: pi:čū
a lot of.NONHUM cotton
'a lot of cotton'

Note: 'few' differs fundamentally from 'a few' (cf. 'I have (a) little doubt that...'), the latter of which shares the Telugu translation for 'some' [kōntā-māndī/kōn:ī/kōntā], instantiated in Section 15.3.2.4 *Value Judgment Quantifiers*: '(too) many/much' and '(too) few/little'.

- (275) a. tāk:ūvā-māndī vīdja:rthū-lū
few-HUM student-PL
'few students'
- b. tāk:ūvā kūk:ā-lū
few.NONHUM dog-PL
'few dogs'

- c. tāk:ūvā car-lū
few.NONHUM car-PL
'few cars'
- d. tāk:ūvā nēj:i
little.NONHUM butter
'little butter'

(276) sārī-po:-e:-māndī vīdja:rthū-lū ra:-le:dū
correct-go-REL.IMPF-HUM student-PL.NOM come-NEG.PERF
'Not enough students came.'

(277) kāṣṭā pāR-te: e: vīdja:rthū-lū āj:-īna: vāc:-e:-rū
difficulty fall-IMPF.COND any student-PL.NOM happen-whether come-PERF-3PL.HUM
'Hardly any students came.'

(278) kāṣṭā pāR-te: e: nēj:i āj:-īna: dōrk-īn-dī
difficulty fall-IMPF.COND any butter-NOM happen-whether be found-PERF-3SG.NONHUM
'Hardly any butter was found.'

15.3.13.3 D-Quantifiers Combining with Just Mass Nouns

Although [kōñčāmū] 'little' combines with just mass nouns, its apparent antonym, namely [ča:la:], doesn't exhibit the same restriction, as illustrated earlier.

- (279) a. *kōñčāmū vīdja:rthū-lū
little.MS student-PL
'few students'
- b. *kōñčāmū kūk:ā-lū
little.MS dog-PL
'few dogs'
- c. *kōñčāmū car-lū
little.MS car-PL
'little cars' (i.e. little quantity of cars)
- d. kōñčāmū nēj:i
little.MS butter
'little butter'

The exclusively postnominal mass D-quantifier *ānta*: 'all' can, optionally, be loosely applied to HUM nouns (but not NONHUM animals) when conveying a collective sense, it does not exhibit the word-order flexibility of the HUM-dedicated *āndāṛū* 'all'. And the <all.MS> gloss suggests an inherently mass character

for *ǎnta*: and reflects the mass interpretation of <CT.HUM.PL> nouns – obviating a needlessly intricate, if not implausible, gloss for *ǎnta*: which would account for both its <CT.HUM.PL> and <MS> applications.

- (280) a. *vǐdja:rthũ-lũ ǎnta:*
 student-PL all.MS
 -BUT NOT-
- b. **ǎnta: vǐdja:rthũ-lũ*
 all.MS student-PL
 ‘all ((of) the) students’
- (281) a. *ǎndǎrũ vǐdja:rthũ-lũ*
 all.CT.HUM.PL student-PL
 ‘all ((of) the) students’ [standard – focus on ‘students’]
- b. *vǐdja:rthũ-lũ ǎndǎrũ-:*
 student-PL all.CT.HUM.PL-EMPH
 ‘all ((of) the) students’ [focus on ‘all’]
- (282) a. **kũk:ǎ-lũ ǎnta:*
 dog-PL all.MS
 ‘all ((of) the) dogs’
- b. **bõm:ǎ-Lu ǎnta:*
 doll-PL all.MS
 ‘all ((of) the) dolls’
- c. *pi:čũ ǎnta:*
 cotton all.MS
 ‘all ((of) the) cotton’
- (283) a. **kõntǎ car-lũ*
 some-MS car-PL
 ‘some cars’
- b. *kõntǎ pi:čũ*
 some-MS cotton
 ‘some cotton’
- (284) a. **ěntǎ car-lũ*
 how much-MS car-PL
 ‘how many cars’
- b. *ěntǎ pi:čũ*
 how much-MS Cotton
 ‘how much cotton’

15.3.14 The ‘Indexing’ Function of the Universal Quantifier

- (285) prāti: sāvātsārāmū dḥānāmū Toyota-lū ěk:ūvā kōN-Tūna:-rū
 every year people.NOM Toyota-PL.ACC more buy-PROG-3PL.HUM
 ‘More people buy Toyotas every year.’
- (286) prāti čūk:ā vārṣāmū-kī ōkā pūv:ū pērūgū-tūn-dī
 every drop rain-DAT/GEN one.CARDADJ flower.NOM grow-IMPV-3SG.NONHUM
 ‘For every drop of rain a flower grows.’
- (287) me:mū plant čē:s-īnā prāti: vīt:ānāmū
 3PL.INCL.NOM plant do-REL.PERF every seed.NOM
 ōkā pēd:ā čēT:ū āj:-po:-īn-dī
 a big tree.PRED NOM become-go-PERF-3SG.NONHUM
 ‘Every seed we planted grew into a big tree.’

15.3.15 Rate Phrases

- (288) ne:nū ro:dḥū-kī īrāvāī kilometer-lū pārīgēT:ū-tūna:-nū
 1SG.NOM day-DAT twenty kilometer-PL run-PROG-1SG
 ‘I run twenty kilometers a day.’
- (289) Ram ro:dḥū-kī rēNDū sa:rī-lū mūk^hāmū kāRūgū-kūN-Ta:-Rū
 Ram day-DAT Two time-PL face wash-REFL-IMPV-3SG.MASC.FAM
 ‘Ram washes his face twice a day.’
- (290) Ram ro:dḥū: mūk^hāmū kāRūgū-kūN-Ta:-Rū
 Ram daily face wash-REFL-IMPV-3SG.MASC.FAM
 ‘Ram washes his face everyday.’

15.4 Other Classes of Quantifiers

15.4.1 Type (2) Quantifiers

- (291) ve:re:-ve:re: vīdja:rthī-lā-kī
 different-different student-PL-DAT
 ve:re:-ve:re: pūstāka:-lū nāč:ū-ta:-jī
 different-different book-PL.NOM to be pleasing-IMPV-3PL.NONHUM
 ‘Different students like different books.’
 (There is incomplete, or no, overlap between the books that any two people respectively like).

- (292) ve:re: vĭdja:rthĭ-kĭ
 different student-PL-DAT
- ve:re: pŭstĕka:-lŭ nĕĉ:ŭ-ta:-jĭ
 different book-PL.NOM to be pleasing-IMP-3PL.NONHUM
- ‘Different students like different books.’ (Students other than some particular group, with the property that they like books other than those of some particular group).

Where ‘Ram and Babu’ and ‘the same’ are not independent:

- (293) a. Ram-ŭ Babu-ŭ ōkĕ-e: prĕšnĕ-lŭ ĀRĭg-e:-rŭ
 Ram.NOM-and Babu.NOM-and one.CARDADJ-only question-PL ask-PERF-3PL.HUM
 ‘Ram and Babu asked the same questions.’
 (Ram asked the same questions as those which Babu asked).
- b. Ram-ŭ Babu-ŭ a: prĕšnĕ-lŭ-e: ĀRĭg-e:-rŭ
 Ram.NOM-and Babu.NOM-and those question-PL-only ask-PERF-3PL.HUM
 ‘Ram and Babu asked the same questions.’
 (They both asked the same questions as those referenced elsewhere).
- (294) a. Ram-tĕp:a: (ĭŋka:) ěvĕru:- Madhuri-to:-tĕp:a:
 Ram-except (still) anyone.NOM-EMPH Madhuri-INSTR-except
- (ĭŋka:) ěvĕrŭ-to:Tĭ-: ma:Tĕla:Rĕ-le:dŭ
 (still) anyone-INSTR-EMPH talk-NEG.PERF
- ‘No one but Ram talked to anyone but Madhuri.’
 (All the non-Rams talked exclusively to Madhuri. It’s implied that Ram certainly talked to people, but we don’t know with whom).
- b. Ram-tĕp:a: (ĭŋka:) ěvĕru:- Madhuri-to:-tĕp:a:
 Ram-except (still) anyone.NOM-EMPH Madhuri-INSTR-except
- (ĭŋka:) ěvĕrŭ-to:Tĭ āj:-ĭna: ma:Tĕla:Rĕ-le:dŭ
 (still) anyone-INSTR happen-whether talk-NEG.PERF
- ‘No one but Ram talked to anyone but Madhuri.’
 (Only Ram has the property that he indiscriminately talked to anyone but Madhuri (i.e. he excluded only Madhuri)).
- (295) e: vĭdja:rthŭ-lŭ e: prĕšnĕ-lŭ-kĭ đĕĕva:bŭ ĭĉ:-e:-rŭ
 which student-PL.NOM which question-PL-DAT answer give-PERF-3PL.HUM
 ‘Which students answered which questions?’

- (296) āndārū vīdja:rthū-lū ōkā-e: praśnā-lū-kī dḷāva:bū
 all.CT.HUM student-PL.NOM one.CARDADJ-only question-PL-DAT answer
 ra:s-e:-rū
 write-PERF-3PL.HUM
 ‘All the students answered the same questions.’
- (297) prāti: vīdja:rthī ve:re: praśnā-kī dḷāva:bū
 each student.NOM different question-DAT answer
 ra:s-e:-Rū
 write-PERF-3SG.MASC.FAM
 ‘Each student answered a different question.’
- (298) ve:re:-ve:re: vīdja:rthū-lū ve:re:-ve:re:
 (mutually) different student-PL.NOM (mutually) different
 praśnā-lū-kī dḷāva:bū ra:s-e:-rū
 questions-PL-DAT answer write-PERF-3PL.HUM
 ‘Different students answered different questions.’
- (299) Ram-ū Babu-ū pāk:ā-pāk:ā u:rū-lā-lo:
 Ram.NOM-and Babu.NOM-and next-next village-PL-LOC
 ũN-Ta:-rū
 be present-IMPF-3PL.HUM
 ‘Ram and Babu live in neighboring villages.’
- (300) va:L:ū ōkā e: ũrū-lo:
 3PL.NOM one.CARDADJ only town-LOC
 ve:re:-ve:re: ũL:-lā-lo: ũN-Ta:-rū
 (mutually) different house-PL-LOC be present-IMPF-3PL.HUM
 ‘They live in different houses in the same town.’
- (301) āndārū vīdja:rthū-lū ōkā e: rāṅgū čōk:a:
 all.CT.HUM student-PL.NOM one.CARDADJ only color shirt.ACC
 ve:s-kūn-na:-rū
 put-REFL-PERF-3PL.HUM
 ‘All the students wore the same color shirt.’
- (302) Ram Madhuri-to:Tī ma:Tāla:R-e:-Rū ga:ni:
 Ram.NOM Madhuri-with talk-PERF-3SG.MASC.FAM but
 iṅkā ēvāru:- iṅkā ēvāri-to:Tī:- ma:Tāla:Rā-le:dū
 still anyone.NOM-EMPH still anyone-with-EMPH talk-NEG.PERF
 ‘Ram talked to Madhuri but no one else talked to anyone else.’

- (303) foTo-lũ ve:re:-ve:re: gädũ-lã-lo: ga:ni:
 photo-PL.NOM (mutually) different room-PL-LOC or
- ökä e: gädĩ-lo: ve:re:-ve:re: go:Rã-lã-mi:dã ga:ni:
 one.CARDADJ only room-LOC (mutually) different wall-PL-SUP or
 pět:-a:lĩ
 put-should
- ‘The photos should be put in separate rooms or on opposite walls of the same room.’

15.4.2 Type ((1,1),1) Quantifiers

15.4.2.1 Comparative D-Quantifiers

- (304) gũrũvũ-lũ kãNTe: vĭdja:rthũ-lũ ěk:ũvã ĩNTĩ-kĩ vãč:-e:-rũ
 teacher-PL.NOM than student-PL.NOM more house-LAT come-PERF-3PL.HUM
 ‘More students than teachers came to the house.’
- (305) gũrũvũ-lũ ěntã-mãndĩ vãč:-e:-Rũ o:
 teacher-PL.NOM how many-HUM come-PERF-3PL.HUM COMP
- kãni:sãm äntã-mãndĩ vĭdja:rthũ-lũ ĩNTĩ-kĩ vãč:-e:-Rũ
 at least that many-HUM student-PL.NOM house-LAT come-PERF-3PL.HUM
 ‘At least as many students as teachers came to the house.’
- (306) na:-kũ gũrũvũ-lũ kãNTe: vĭdja:rthũ-lũ ěk:ũvã tĕlũsũ
 1SG-DAT teacher-PL.NOM than student-PL.NOM more known
 ‘I know more students than teachers.’
- (307) ne:nũ gũrũvũ-lũ kãNTe: vĭdja:rthũ-lũ-to:Tĩ ěk:ũvã
 1SG.NOM teacher-PL.NOM than student-PL.INSTR more
- pãní ěe:s-e:-nũ
 work do-PERF-1SG
- ‘I have worked with more students than teachers.’
- (308) gũrũvũ-lũ äntã-mãndĩ vĭdja:rthĩ-lã vi:
 teacher-PL.GEN that many-HUM student-PL.GEN and
- sãikiL-Lũ döngãlĩmpã pãD-Da:-jĩ
 cycle-PL.NOM steal fall-PERF-3PL.NONHUM
- ‘Just as many students’ as teachers’ bicycles were stolen.’

15.4.2.2 Combinations with Conjunctions

- (309) prāti: mōgāva:Rū-: a:Rādī-: pīl:āva:Rū-:
 Every male person.NOM-EMPH female person.NOM-EMPH child.NOM-EMPH
 nāv:-e:-rū
 laugh-PERF-3PL.HUM
 ‘Every man, woman, and child laughed.’
- (310) ēvār-o: mōgāva:Rū o: a:Rādī o: pīl:āva:Rū o:
 anyone.NOM-some male person.NOM or female person.NOM or child.NOM or
 a:dīva:rāmū pani če:s-ta:-rū
 Sunday work do-IMP-3PL.HUM
 ‘Some man, woman, or child works on Sunday.’
- (311) e: mōgāva:Rū-: a:Rādī-: pīl:a:Rū-:
 any male person.NOM-EMPH female person.NOM-EMPH child.NOM-EMPH
 a:dīva:rāmū pani če:j:ā-rū
 Sunday work do.NEG-IMP-3PL.HUM
 ‘No man, woman, or child works on Sunday.’

15.4.3 Type (1,(1,1)) Quantifiers

- (312) ēk:ūvā vīdja:rthū-lū pārīkṣā-lū-ko:sāmū čādūvū-ko:-Rāmū kāNTe:
 more student-PL.NOM exam-PL-BEN read-REFL-INF than
 īNTī-kī vāč:-e:-rū
 house-LAT come-PERF-3PL.HUM
 ‘More students came to the house than studied for their exams.’
- (313) e: vīdja:rthū-lū a:lās^jāmū-ga: vādīl-e:-rū o:
 which student-PL.NOM late-ly leave-PERF-3PL.HUM COMP
 va:L:ū e: pēndāra:Le: vāč:-e:-rū
 3PL.NOM only early come-PERF-3PL.HUM
 ‘The same students came early as left late.’

Abbreviations

ABL	Ablative
ACC	Accusative
ADES	Adessive

BEN	Benefactive
CARDADJ	Cardinal adjectival quantifier
CARDPRO	Cardinal pronominal quantifier
COMP	Comparative reference particle
COND	Conditional
CT	Count
DAT	Dative
EMPH	Emphatic particle
EXCL	Exclusive
FAM	Familiar
FEM	Feminine
FRM	Formal
FUT	Future
GEN	Genitive
GER	Gerund
HUM	Human
IMPF	Imperfective
INCL	Inclusive
IND	Indeterminate: The verb-agreement here is homophonous with the endings for <u>all</u> of the following subjects: 2.SG.FRM, 2.PL.FAM/FRM, 3.MASC/FEM.SG.FORMAL, and 3.PL.FAM/FRM. The word for ‘who’ can be considered 3rd person, but does <u>not</u> specify gender, number, or social level of addressee – hence the term ‘indeterminate’.
INF	Infinitive
INSTR	Instrumental
LAT	Lative
LOC	Locative
MASC	Masculine
MS	Mass
NEG	Negation
NOM	Nominative
NONHUM	Non-human
ORD	Ordinal
PASS	Passive
PERF	Perfective
PL	Plural
PROG	Progressive (present)
QP	Question particle
REL	Relativizer
SG	Singular
SUP	Superessive
TEMP	Temporal

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Chapter 16

Quantification in Western Armenian

Hrayr Khanjian

Some Background About Western Armenian

Western Armenian (WA) is one of several dialects of the Indo-European Armenian language family. WA is spoken by communities outside of present day Armenia in many of the major cities around the world by about a million speakers. Originating in what is today Eastern Turkey, the language has been in constant contact with Ottoman then Turkish for most of the past millennium, resulting in an interesting mix of Indo-European and Altaic structure. The sub-dialect from which the data came from is that of the Lebanese-Syrian Western Armenian spoken in the United States. Eastern Armenian is the official language spoken in present day Armenia. Both dialects originated from Classical Armenian, dating to the fifth century AD, but differ in all levels of language, from the number of phonemes to nominal and verbal morphology, as seen in (1) and (2) (Donabédian 1999).

Eastern Armenian

- (1) Aram-ə sərdʒaran-um mi girk e kart-um
Aram-DEF coffee.shop-LOC INDEF book BE.3S read-IMPF
'Aram is reading a book in the coffee shop.'

Western Armenian

- (2) Aram-ə sərdʒaran-i-n metʃ kirk mə gə-garta-gor
Aram-DEF coffee.shop-GEN-DEF inside book INDEF IMPF-read.3S-PROG
'Aram is reading a book in the coffee shop.'

Armenian has a very long written tradition since the creation of the Armenian alphabet around AD 405 by St. Mesrob Mashtots. The examples throughout this chapter are not presented in the Armenian orthography nor in the

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traditional transliteration found in most Armenian sources. I have transcribed the spoken Western Armenian as close to the IPA symbols as possible.¹

WA is mostly an SOV language with loose restriction on word order.² Verbs carry subject agreement for number and person, and the language is optionally pro-drop. In common with verb final languages generally, Armenian is mostly postpositional and dominantly suffixing, both properties amply illustrated in the examples which follow. Both the definite *a/n* and indefinite *mə* articles follow their noun phrases.³ The indefinite marker *mə* is historically derived from the Classical Armenian word ‘one’ *min*. As is the case for most destressed high vowels, the high vowel reduced to a schwa resulting in *mə* (Adjarian 1957, as cited in Sigler 1997:89). WA does not have any morphological gender markings on quantifiers, nouns, adjectives or pronouns. Case marking indicates the semantic role of an NP with respect to the verb.⁴ The tense on verbs is either past or non-past.⁵ As for the order of possessives, the possessor is followed by the possessed, as in *Aram-in kirk-a* ‘Aram-GEN book-DEF’ ‘Aram’s book.’

Almost all the quantifiers of WA precede the NPs they quantify over. There are a few exceptions, the most notable being ‘most’, which will be discussed in the appropriate section below. The same word order applies to Eastern Armenian. For discussion and examples of quantification in Eastern Armenian see Dum-Tragut (2009). The denotation of all bare nouns correspond to the English object-denoting mass nouns (Bale and Khanjian 2009). Plural marking *-(n)er* suffixed onto nouns results in a count interpretation of the NP. NPs with a plural suffix take plural agreement and the bare NPs usually take singular agreement on the verb. For more discussion about the semantics of the plural marking and related numeral quantification see Donabédian (1993) and Bale et al. (2010, 2011).

16.1 Generalized Existential

16.1.1 D-Quantifiers

There are a few lexical items that can be used to express the concept of ‘some’ using the indefinite article *mə*: *kani* ‘few,’ *kitf* ‘small amount,’ *gark* ‘rank,’ *mas* ‘part.’ Each quantifies over slightly different types of NPs as shown below⁶:

¹ IPA symbols used throughout: *y* = high front round vowel, *j* = high front glide, *dʒ* = postalveolar affricate. Voiceless stops and affricates in WA are aspirated. Aspiration and affricate tie bar diacritics are omitted for simplicity.

² For convenience most examples are verb final. Other word orders are possible, which are only discussed if relevant.

³ For a thorough discussion of definiteness in WA see Sigler (1997).

⁴ NOM-nominative, ACC-accusative, GEN-genitive, DAT-dative, ABL-ablative, INST-instrumental.

⁵ In glosses if a verb is not specified for tense then it is non-past.

⁶ I denote *obligatory* as *() and *not possible* as (*) and *optional* as ()

- (3) gark -*(mə) afagerd-*(ner) dun ka-ts-in
 rank -INDEF student-PL house go-PAST-3P
 ‘A certain grouping of students went home.’
- (4) kani -*(mə) afagerd-(ner) dun kəna-ts /ka-ts-in
 how.many -INDEF student-PL house go-PAST.3S /go-PAST-3P
 ‘Several students went home.’
- (5) kitf -(mə) afagerd-(*ner) dun kəna-ts
 few -INDEF student-PL house go-PAST.3S
 ‘(A) small amount of students went home.’
- (6) mas -*(mə) afagerd-*(ner)-(u-n) dun ka-ts-in
 part -INDEF student-PL-GEN-DEF house go-PAST-3P
 ‘A portion of the students went home.’

A few generalizations can be made with respect to the above data. The only lexical item that can stand alone to express ‘some’ is *kitf*, as opposed to the other three which obligatorily combine with the indefinite marker. *kitf* also stands out with respect to the NP being quantified, namely a bare and therefore mass-like noun. *gark-mə* and *mas-mə* obligatorily quantify over count NPs as evidenced by the obligatory presence of the plural marking seen in the first and last examples above. These four examples show that number agreement on the verb is usually correlated with the presence of a plural marking on the subject NP.

The quantifier in (4), *kani-mə*, when used without the indefinite article *mə* expresses the wh-word ‘how many,’ as seen in (7). Interrogatives seem to commonly attract to an immediate pre-verbal position in WA⁷:

- (7) ՅՕՅՕՎ-i-n kani *(afagerd) jega-v?
 meeting-GEN-DEF how.many student come.PAST-3S?
 ‘How many students came to the meeting?’

However this cardinal interrogative *kani*, obligatorily quantifies over some overt NP or classifier, unlike in English. As seen in (8) the quantified NP is optional, which is not the case for WA as seen in (7):

- (8) How many (students) came to the meeting?

⁷ *kani* can also combine with ‘that’ resulting in a conjunction corresponding to ‘because,’ even though a lexical item *vor(ovhe)dev* already exists for this function:

- (i) Aram-ə dun kəna-ts, kani-vor hokn-adz e-r
 Aram-DEF home go-PAST.3S, how.many-that tired-PERF BE-PAST.3S
 ‘Aram went home, because he was tired.’

To express ‘great amount’ or ‘many’ *fad* is used. *fad* can quantify over both bare (9) and plurally marked (10) NPs.⁸ I gloss *fad* as ‘many’ for simplicity.

- (9) ners-ə fad mart gar
 inside-DEF many man ∃.PAST.3S
 ‘There were a lot of people inside.’
- (10) fad-(mə) afagerd-ner dun ka-ts-in
 many-INDEF student-PL house go-PAST-3P
 ‘Many students went home.’

fad can also be used as an adverb as seen in the next two examples.

- (11) Aram-ə fad gera-v
 Aram-DEF many eat.PAST-3S
 ‘Aram ate a great amount.’
- (12) fad /kitʃ χəme-ts-ir?
 many /few drink-PAST-2S
 ‘Did you drink a lot/little?’

Another lexical item that is used with the indefinite marker to quantifier over NPs is *χump* ‘group’ as seen in (13). *χump-mə* acts like *gark/mas-mə*.

- (13) χump-*(mə) afagerd-ner-(*ə) təbrots katsin
 group-INDEF student-PL-DEF school went.3P
 ‘A group of students went to school.’

An important distinction between the cardinal quantifiers discussed so far is that only the numerals and *kani-(mə)* can quantify over classifiers.⁹ As observed by Sigler (2003), quantifiers that require definite or plural NPs are not acceptable with *had*, the classifier, as seen by the example below.

- (14) kani-mə /jerek /*kitʃ-mə /*gark-mə /*mas-mə /*... had
 how.many-INDEF /three /*few-INDEF /*sort-INDEF /*part-INDEF CL
 kirk kəne-ts-i
 book buy-PAST-1S
 ‘I bought a few/three books.’
- (15) kani-mə /jerek /*kitʃ /*... had kirk kəne-TS-IR?
 how.many-INDEF /three /*few CL book buy-PAST-2S?
 ‘Did you buy a.few/three books?’

⁸ *fad* can also be used to express ‘very’ or ‘excessive’ as can the lexical item *tʃapazants*:

- (ii) Aram-ə fad/tʃapazants uʃ dun kəna-ts
 Aram-DEF very/excessive late home go-PAST.3S
 ‘Aram went home very late.’

⁹ Capitalized words or syllables indicate sentential focus, which distinguishes a declarative from a yes/no question.

- (16) KANI had kirk kənets-ir?
 how.many CL book buy-PAST-2S?
 ‘How many books did you buy?’

This special distribution of *kani-mə* is further strengthened when examining the quantifiers that are capable of functioning as predicates. The cardinal numerals and *kani-mə* cannot stand as predicates as seen in (17)¹⁰:

- (17) afagerd-ner-ə fad /kitf /pəzm-a-tiv /*das /*kani-mə
 student-PL-DEF many /few /many-CONN-number /*ten /*few-INDEF
 e-n
 be-3P
 ‘The students are many/few/numerous/*ten/*some.’

Another difference between these two groups is that some quantifiers, namely the cardinal numbers and *kani-mə* cannot function as independent DPs. They require the presence of at least a classifier, whereas *fad* or *kitf* can stand alone as seen in (18) and (19):

- (18) kirk-er-ə arzan e-ji-n, anor hamar hink /kani-mə
 book-PL-DEF inexpensive be-PAST-3P, that.DAT for five /few-INDEF
 *(had) kəne-ts-i
 CL buy-PAST-1S
 ‘The books were inexpensive, so I bought three/a few.’

- (19) kirk-er-ə arzan e-ji-n, anor hamar fad /kitf kəne-ts-i
 book-PL-DEF inexpensive be-PAST-3P, that.DAT for many /few buy-PAST-1S
 ‘The books were inexpensive, so I bought a lot/little amount [of them].’

This restriction carries over to questions. As seen in (12) *fad* or *kitf* can surface as independent DPs in questions, whereas cardinal numbers and *kani* require the presence of a classifier:

- (20) kani /jerek *(kavat) χəme-ts-ir?
 how.many /three cup drink-PAST-2S
 ‘How many cups [of x] did you drink?’ / ‘Did you drink three cups [of x]?’

In questions, the quantifier *kani* can stand alone when referring to salient amount measure in the discourse like money as seen by the example in (21).

- (21) As kirk-ə KANI er?
 this book-DEF how.many was.3S
 ‘How much was this book?’

A final note about *kani-mə* reported in a footnote by Sigler (1997:23) is that *mi kani* is also a possible version of the same quantifier. Some Western Armenian speakers use this quantifier as well to mean ‘a few’, while *kani-mə* is used for ‘few’ according to Sigler (1997).

¹⁰ -a-, glossed as *CONN* in *pəzm-a-tiv* is a connector between either two roots or a root and an affix.

Finally, examining quantification over mass/count nouns, the cardinal numerals and *kani-mə* cannot quantify over mass nouns, whereas the other quantifiers discussed so far, *fad*, *gark-mə*... combine with both mass and count nouns, exemplified below using ‘wine,’ a mass NP, and ‘book,’ a count NP. I have not found any D-quantifiers that combine with just mass nouns and not with count nouns.

- (22) **jerek kini* ‘#three wine’ / *jerek kirk* ‘three books’
 (23) **kani-mə kini* ‘#a few wine’ / *kani-mə kirk* ‘a few books’
 (24) *fad kini* ‘a lot of wine’ / *fad kirk* ‘a lot of books’
 (25) *kitf/gark-mə kini* ‘some wine’ / *kitf/gark-mə kirk* ‘some books’
 (26) *amen kini* ‘all wine’ / *amen kirk* ‘all books’
 (27) *vorkan kini* ‘how.much wine’ / *vorkan kirk* ‘how.much book’

The intersective non-cardinal **interrogative** ‘which’, which quantifiers over the set of *students* in (29), picks out the specific *students* who are also in the set of the second conjunct. Whereas the cardinal quantifier ‘how-many’ in (28) only requires a numerical response relevant to the quantified set, in this case *students*.

- (28) 3060V-i-n *kani* *afagerd jegav?*
 meeting-DAT-DEF how.many student came.3S?
 ‘How many students came to the meeting?’
 (29) *vor* (meg) *afagerd-ner-ə kənutjun-ə antsutsin?*
 which (one) student-PL-DEF exam-DEF passed.3P
 ‘Which students took the exam?’

When quantifying over sets marked with the plural marker, **value judgment** quantifiers favor a cardinality reading as opposed to a proportion reading as seen in (30) with ‘many’ *fad mə* or ‘few’ *kani mə*. These two quantifiers, as discussed before, require a plural marker on the quantified set. Therefore the cardinality reading can either be from the quantifiers or from the presence of the plural marking. This is disambiguated with another value judgement quantifier, ‘enough’ *pavarar* seen in (31). This quantifier is able to quantify over both bare and plurally marked sets. With the plural marker this value judgement quantifier favors a cardinality reading. Whereas when quantifying over a bare NP like *student*, a strong proportion reading results as in (32).

- (30) *Aram-ə hantibe-ts-av {fad/kani} mə harmar*
 Aram-DEF meet-PAST-3S {many/how.many} INDEF appropriate
teknadzu-ner-u hed
 candidate-PL-GEN with
 ‘Aram met with many/a few of the appropriate candidates.’
 (31) *pavarar afagerd-ner 3060V-i-n tʃ-ega-n*
 enough student-PL meeting-DAT-DEF NEG-came-3P
 ‘Not enough students [100 students] came to the meeting.’

- (32) *pavarar afagerd zovov-i-n tʃ-ega-v*
 enough student meeting-DAT-DEF NEG-came-3S
 ‘Not enough students [as opposed to teachers] came to the meeting.’

pavarar is usually used with negation giving the ‘not enough’ meanings found in (31) and (32). A related quantifier *pavagan* also has a similar interpretation and is used with both negative and non-negative sentences. There is a subtle semantic difference between these two quantifiers. *pavarar* indicates an upper bound that has been reached. *pavagan* expresses the surpassing of a lower bound.

- (33) *pavagan afagerd zovov-i-n tʃ-ega-v*
 enough student meeting-DAT-DEF NEG-came-3S
 ‘Not many students came to the meeting.’
- (34) *pavagan afagerd zovov-i-n jega-v*
 enough student meeting-DAT-DEF came-3S
 ‘A large number of students came to the meeting.’

16.1.2 A-Quantifiers

Here is a list of some intersective A-Quantifiers in Western Armenian:

- sometimes *jerp-emən* (based on *jerp* ‘when’)
 once *meg ankam* (one times) / *meg had* (one CL) / *mej-mə* (one-
 INDEF)
 twice *jergu ankam* (two times) / *gərgn-abadig* (based on *gərgn*
 ‘again’)
 x times *x ankam*
 many times *jad ankam-ner* (many time-PL)
 not very many times *jad ankam-ner...NEG-BE + V*
 often *hadʒaχ*
 almost never *kərete (jerpek)...NEG-V* (almost...)
 never *jerpek...NEG-V*

As the quantifiers seen in Section 16.1.1, the A-quantifiers listed above pick out a specific quantity or number of occurrences like *never* seen in (35) or *three times* seen in (36). It should be noted that the word order of these quantifiers is very free and they can occur in almost any position as seen in (36).

- (35) *Aram-ə jerpek Yerevan tʃ-e ajtsel-adz*
 Aram-DEF never Yerevan NEG-BE.3S visit-PERF
 ‘Aram has never visited Yerevan.’
- (36) (*jerek ankam*) *Aram-ə (jerek ankam) Yerevan (jerek ankam)*
 three times Aram-DEF three times Yerevan three times
ajtsel-ets (jerek ankam)
 visit-PAST.3S three times
 ‘Aram visited Yerevan three times.’

- (37) jerpemən/hadʒaχ kirk gə-garta-m
 sometimes/often book IMPF-read-1S
 ‘I sometimes/often read books.’

For the quantifier ‘once’ there are three forms used in speech, one using the lexical item for ‘times’ *ankam*, namely *meg ankam*, one using the classifier *had*, namely *meg had* and the third using the indefinite article *mə*, namely *mej-mə*. Depending on the setting and discourse one is preferred over the other two. For example for certain imperative contexts *meg ankam* is not used as seen in (38). However for others all three seem fine as in (39). The placement of these adverbial quantifiers is again not restricted. The examples below seem to be the most natural word orders.

- (38) (**meg ankam*) /*meg had* /*mej-mə* hos jegur!
 (*one times) /one CL /one-INDEF here come.IMP.2S
 ‘Come here [for a second]!’
- (39) portse meg ankam /*meg had* /*mej-mə* təbrots jerta-l
 try.2S one times /one CL /one-INDEF school go-INF
 ‘Try to go to school, once!’

The meaning of ‘almost never’ can be expressed using the words *kərete* ‘almost’ and *jerpek* ‘never’¹¹:

- (40) *kərete* jerpək kirk tʃ-e-m garta-r
 almost never book NEG-BE-1S read-IMPF
 ‘I almost never read books.’

However, as seen from the example below to express ‘almost never’ the lexical item for ‘never’ does not have to be used. Instead, negation on the verb and the word ‘almost’ give the same interpretation.

- (41) *kərete* (ajlevəs) kirk tʃ-e-m garta-r
 almost anymore book NEG-BE-1S read-IMPF
 ‘I almost never read books anymore.’

As in English, an A-quantifier cannot be used with ‘almost...never’, when using the corresponding NPI ‘ever’:

- (42) **kərete* hetʃ/pənav kirk tʃ-e-m garta-r
 almost ever book NEG-BE-1S read-IMPF
 *‘I almost ever read books anymore.’

¹¹ More discussion about negative words and NPIs in the following sections.

16.2 Generalized Universal

16.2.1 D-Quantifiers

all	amen/polor
every	amen
whole	ləman
complete, entire	ləman/ampoxɬf/(hamajn/amenajn)
each	jurakantfyr/amen-meg (every-one)
nearly/almost all	kərete amen
all but x	patsi x ... amen/polor (except x... all)
all but finitely many	sahmanapag jev votf amen (limited and no all)
not all	amen...NEG-V
every... and...	amen... jev

As seen from the list above there are a variety of universal D-quantifiers. The most productive and used of these is *amen*. This universal is the only one that can quantify over bare NPs as seen in (43), along with *jurakantfyr*, ‘each’ as in (44). It is worth mentioning that *amen* is the root used most often to form superlative constructions, *amen-a-harust* ‘richest’ (Bobaljik 2011).

- (43) amen/ *polor/ *ləman/ *ampoxɬf afagerd g-eraze
 all student IMPF-dream.3S
 ‘All students dream.’
- (44) jurakantfyr/amen-meg afagerd usutsitf-i-n hed desn-əve-ts-av
 each/every-one student teacher-GEN-DEF with see-PASS-PAST-3S
 ‘Each student met up with the teacher.’

These quantifiers can take coordinated noun phrases as seen in the example below.

- (45) amen afagerd jev usutsitf dun kəna-ts
 all student and teacher home GO-PAST.3S
 ‘Every student and teacher went home.’

With bare NPs the verb takes singular agreement as seen in (45). With plural marking we get plural agreement as in (46). However with a coordinated structure, it is not possible to have one marked with the plural and another bare as seen with (47). This would suggest that the two ‘amen’ lexical items in (45) and (46) are two different quantifiers. One quantifies over bare NPs and another over definite plural NPs.

- (46) amen afagerd-ner-ə jev usutsitf-ner-ə dun ka-tsin
 all student-PL-DEF and teacher-PL-DEF home GO-PAST.3P
 ‘All the students and the teachers went home.’
- (47) *amen afagerd jev usutsitf-ner-ə dun ka-tsin /kəna-ts
 all student and teacher-PL-DEF home GO-PAST.3P /GO-PAST.3S

With definite NPs, *polor* is preferred as seen in (48). The quantifiers *ləman* and *ampoχtf* only modify groups or individuals that are pragmatically divisible as the next few examples show. Finally the quantifiers *hamajn* and *amenajn* are archaic and only used in set phrases with the same meaning as *ampoχtf* or *ləman*.

Following Sigler (1997:135) and from the examples seen below, it is clear that the quantifier *polor* requires a definite marker on the quantified NP, whereas *amen* and *jurakantfyr* do not have this restriction.

- (48) amen^{preferred}/polor/*ləman/*ampoχtf afagerd-ner-ə g-eraze-n
 all student-PL-DEF IMPF-dream-3P
 ‘All students dream.’
- (49) amen/polor/*ləman/*ampoχtf afagerd-ner-ə g-eraze-n gor
 all student-PL-DEF IMPF-dream-3P PROG
 ‘All the students are dreaming.’
- (50) polor/ləman/ampoχtf/[?]amen afagerd-utjun-ə g-eraze gor
 all student-NOMZ-DEF IMPF-dream.3S PROG
 ‘The entire student population is dreaming.’
- (51) amen/polor/ləman/ampoχtf χəntsor-ə gera
 entire apple-DEF eat.PAST.1S
 ‘I ate the entire/whole apple.’
- (52) patsi yergu afagerd-ner, polor-ə kənutjun-ə hatfoke-ts-an
 except two student-PL, all-DEF exam-DEF succeed-PAST-3S
 ‘All but two students passed the exam.’

To express quantificational negation, a construction with verbal negation is used as seen from the example in (53). This pattern is seen for most quantifiers that translate to ‘not Q’ in English.

- (53) amen gadu sev tf-e
 all cat black NEG-BE.3S
 ‘Not all cats are black.’

16.2.2 A-Quantifiers

- always mift
 almost always kərete mift (almost always)
 whenever jerp-vor (when-that)/zamanag/aden
 (almost) every time (kərete) amen ankam ((almost) every time)
 as soon as haziv/(hents)

As was the case for the existential A-quantifiers, the universal A-quantifiers, in this case *mift*, can surface in a number of positions in a sentence as seen from the example in (55). However *mift* can not quantify over the matrix verb if

placed in the lower clause. If the quantifier is placed inside the lower clause, then it will naturally quantify over the lower verb, giving a different interpretation.

- (54) *təbrots-e-n jedk mift hanragark-ov dun g-erta-m*
 school-ABL-DEF after always bus-INSTR home IMPF-go-1S
 ‘After school, I always go home on the bus.’
- (55) *(mift) hanragark-ə (mift) g-arne-m (mift) jerp təbots g-erta-m*
 always bus-DEF always IMPF-take-1S always when school IMPF-go-1S
 ‘I always take the bus when I go to school.’
- (56) *təbrots jerta-l-u aden/ʒamanag hanragark-ə g-arne-m*
 school go-INF-DAT at.the.time.of bus-DEF IMPF-take-1S
 ‘When going to school, I take the bus.’
- (57) *amen+ankam/jerp+vor Aram-ə adzil-vi ingzink-ə gə-viravore*
 every+time/when+that Aram-DEF shave-PASS.3S self-3S IMPF-hurt.3S
 ‘Every+time/whenever Aram shaves he hurts himself.’

It is worth mentioning the quantifier *hents* ‘as-soon-as’ which is primarily used in Eastern Armenian. This quantifier is similar to *haziv* as in (58).¹² *hents* is not typically used in Western Armenian.

- (58) *Aramə haziv dun jerta, dʒaf bid(i) ude*
 Aram as.soon.as home go.3S, food will eat.3S
 ‘As soon as Aram goes home, he will eat food.’
- (59) *hents dʒantʃtsar, indzi lur-mə kərgə*
 as.soon.as recognized.2S, 1S.DAT news-INDEF send.IMP.2S
 ‘As soon as you recognize (him/her), let me know.’ [Eastern Armenian]

16.3 Proportional Quantifiers

16.3.1 D-Quantifiers D+N

- most *medz-a-masn-utjun-ə* (big-CONN-part-NOMZ-DEF)
 just six out of ten *haziv das-e-n vets* (just ten-ABL-DEF six)
 exactly six out of ten *dʒift das-e-n vets* (exactly ten-ABL-DEF six)
 only six out of ten *mijajn das-e-n vets* (only ten-ABL-DEF six)
 at least six out of ten *nəvazakujn-ə das-e-n vets* (minimum-DEF)
 more than six out of ten *das-ə x-e-n vets-e-n aveli* (ten-DEF X-ABL-DEF more)
 six out of ten *das-e-n vets* (ten-ABL-DEF six)
 just one... in ten *das-e-n dʒift meg* (ten-ABL-DEF exactly one)
 not one in ten *das-e-n votʃ meg* (ten-ABL-DEF no one)

¹² Thanks to a reviewer who points out the usage of *hents*.

The above table clearly shows that proportional quantifiers as compared to the other two classes discussed before are morphologically more complex; see more examples of proportional quantifiers in Section 16.4.1.4. Two important components of these quantifiers are the ablative marker and the definite marker which are present in all of them except for *medzamasnutjunə* ‘most,’ which lacks an ablative marker.

Unlike all the other D-quantifiers seen in the previous two sections *medzamasnutjunə* ‘most’ comes after the quantified noun phrase as seen in the example in (60). This quantifier preceding the noun phrase is also acceptable but more marked.

- (60) afagerd-ner-u-n medz-a-masn-utjun-ə kirk-er-n-i-n
 student-PL-DAT-DEF big-CONN-part-NOMZ-DEF book-PL-PL-POSS-3S
 garta-ts-in
 read-PAST-3P
 ‘Most of the students read their books.’
- (61) das-e-n vets afagerd-ner tsaχoŋe-ts-an
 ten-ABL-DEF six student-PL fail-PAST-3P
 ‘Six out of ten students failed’

There are two proportional D-quantifiers, *fad-er-ə* ‘many’ and *kitf-er-ə* ‘few’ that quantify over a set of individuals that are pragmatically salient. They can occur in any argument position.¹³

- (62) fad-er-ə dun katsin
 many-PL-DEF home went.3P
 ‘Many [of the group of people salient in the discourse] went home.’
- (63) badasχan-ə fad kitf-er-ə kiden
 answer-DEF many few-PL-DEF know.3P
 ‘Very few [of the group of people salient in the discourse] know the answer.’

16.3.2 A-Quantifiers

- frequently hadʒaχ-agi-oren (based on *hadʒaχ* ‘often’)
 infrequently hazvateb-oren/hazvakyd-oren
 mostly kəλχ-avor-abes (head-ADJ-like)
 partly mas-amp (based on *mas* ‘part’)
 usually əntanr-abes (general-like)
 seldom votʃ hadʒaχ (no often)
 rarely hazvateb/hazvakyd
 often hadʒaχ
 occasionally but not often jerpemən pajs votʃ hadʒaχ (sometimes but no often)
 generally əntanr-abes/sovor-apar/əntanur-armamp

¹³ Thank you to a reviewer for pointing these two quantifiers out.

The A-quantifiers listed above are once again mostly morphologically complex, containing either an adverbializer or an adjectivalizer. Like the other A-quantifiers, these proportional quantifiers can appear in a number of positions. Here are a few examples of how these quantifiers are used in WA.

- (64) *hink dari aratʃ, Aram-ə hadʒaχ-agioren jekunk-ner-ə*
 five year before, Aram-DEF often-ADV nail-PL-DEF
gə-gərdze-r
 IMPF-nibble-PAST.3S
 ‘Five years ago, Aram frequently bit his nails.’
- (65) *gin-er kəχ-avorabes Clinton-i-n kəvejarge-ts-in*
 woman-PL head-ADV Clinton-DAT-DEF vote-PAST-3P
 ‘Women mostly voted for Clinton.’
- (66) *əntanr-abetes ardu-ner-ə surj gə-χəme-m*
 general-ADV morning-PL-DEF coffee IMPF-drink-1S
 ‘I usually drink coffee in the mornings.’
- (67) *Aram-ə hadʒaχ dun gə-kale*
 Aram-DEF often home IMPF-walk.3S
 ‘Aram walks home often.’
- (68) *aʃagerd-mə jerpemən pajts votʃ hadʒaχ gə-sire avelort kirk*
 student-INDEF sometimes but no often IMPF-like.3S extra book
garta-l
 read-INF
 ‘A student sometimes but not often likes to read extra books.’

16.4 Morphosyntactically Complex Quantifiers

16.4.1 Complex D-Quantifiers

16.4.1.1 Numerals and Modified Numerals

As a subset of the cardinal quantifiers, numerals are also preverbal. The cardinal numerals follow a strict base 10 system parallel to English. There are 16 cardinal numeral morphemes, 11 for the digits 0–10 *zero, meg, jergu, jerek, tfors, hink, vets, jot(ə), ut(ə), in(ə), das(ə)*, and the words for 20 *kəsan*, ‘hundred’ *haryr*, ‘thousand’ *hazar*, ‘million’ *miljon* and ‘billion’ *miljar*. Of the 16, 3 are clearly borrowed, namely ‘zero’ *zero*, and the words for ‘million’ and ‘billion’. The suffix *-sun* attaches to most of the units sequence to form the lexical items corresponding to the tens sequence. Complex numerals are formed as follows:

- (69) *jerek haryr ut-sun jot*
 3 100 8-SUN 7
 ‘387’

- (70) inə miljon vets haryr kara-sun jotə hazar meg
 9 1,000,000 6 100 4-SUN 7 1000 1
 ‘9,647,001’

Numerals less than zero are formed by adding ‘negative’ *nəvaz* before the corresponding positive numeral as seen in (71). Decimal numbers are expressed with the lexical item ‘whole’ *ampoxtf* placed between the whole and decimal parts of the number as seen in (72).

- (71) *nəvaz tfors* ‘negative four’

- (72) jerek *ampoxtf* hink
 three whole five
 ‘3.5’

Ordinal numerals are indicated by the bound suffix *-erort*, which attaches to all the cardinal numerals except 0 and 1 as seen in (73). 0 does not have a corresponding ordinal form and ‘first’ is based on the postposition ‘before’ *aratf*, giving ‘first’ *aratfin*. This morpheme can also attach to the interrogative ‘how many’ *kani* as seen in (74) and (75), similar to Malagasy (Keenan 2008:14).

- (73) *das-erort* ‘ten-th’ or *kəsan-vets-erort* ‘twenty-six-th’

- (74) *kani-jereot* χəntsor-n e vor ajsor kəre-ts-i-r?
 how.many-th apple-DEF BE.3S that today pick-PRFV-PAST-2S
 ‘What number apple is this one, that you picked today?’

- (75) Aram-i-n kər-adz kirk-er-e-n *kani-jerort-ə*
 Aram-GEN-DEF write-PERF book-PL-ABL-DEF how.many-th-DEF
 gə-garta-s-gor?
 IMPF-read-2S-PROG
 ‘Of the books that Aram has written, which number are you reading?’

The basic numerals discussed above can attach to a variety of modifiers, like ‘more/less than,’ ‘at least/most,’ ‘exactly,’ ‘nearly’ as seen by the examples below.

- more than six vets-e-n aveli (six-ABL-DEF more)
 at least six nəvazakujn-ə/kone vets (minimum-DEF/at.least six)
 at least six amen-e-n kitf-ə vets (all-ABL-DEF few-DEF six)
 exactly six dʒift vets
 fewer than six vets-e-n bagas
 at most six aravelakujn-ə vets (maximum-DEF six)
 at most six amen-e-n fad-ə vets (all-ABL-DEF many-DEF six)
 only six mijajn vets
 between six and ten vets-e-n das-ə
 nearly twenty kərete kəsan
 approximately twenty mod-avor-abes kəsan
 practically no kərete votf meg
 not more than ten das-e-n aveli ... tʃ-VERB (10-ABL-DEF more... NEG-verb)

at least two but not jerguk-e-n aveli pajts hing-e-n bagas
 more than five
 infinitely many an-vertj (not-ending)/ (ansahaman / andzajradzir)
 just finitely many sahman-a-pag (border-a-closed)
 How many? kani (had)?

Like the numerals, these complex numeral quantifiers precede the modified.

- (76) vets-e-n aveli /nəvazakujn-ə vets /dʒift vets /... kirk kəne-ts-i
 six-ABL-DEF more /minimum-DEF six /exact six /... book buy-PAST-1S
 ‘I bought more than 6/at least 6/exactly 6/... books.’

There is another way of expressing ‘at least x’ *nəvazakujn-ə*, with the lexical item *kone*. As D-quantifiers both can occur in most contexts as seen by the examples in (77) and (78). The difference between these two quantifiers comes out with the example in (79). In this example *kone* is used as a A-quantifier, whereas *nəvazakujn-ə* can not take on this role.

- (77) gardze-m Aram-ə nəvazakujn-ə /kone vets kirk kəne-ts
 think-1S Aram-DEF minimum-DEF /at.least six book buy-PAST.3S
 ‘I think Aram bought at least six books.’

- (78) Aram-ə bedk-e nəvazakujn-ə /kone vets kirk kəne
 Aram-DEF must-BE minimum-DEF /at.least six book buy.3S
 ‘Aram must buy at least six books.’

- (79) kone/ *nəvazakujn-ə Aram-ə dun jega-v
 at.least/ minimum-DEF Aram-DEF home come-PAST.3S
 ‘At least Aram came home.’

From the list of D-quantifiers above, there are two ways of expressing ‘at least’ and ‘at most’. One use is a polymorphemic lexical item *nəvazakujn* ‘minimum’ and *aravelakujn* ‘maximum’. While the second construction is built from the universal quantifier *amen* ‘all’ plus the ablative marker *-e-* plus *kitf* ‘few’ or *fad* ‘many’. Both of these forms require the definite marker after the quantifier.

As seen with some of the quantifiers in previous sections, a negation meaning added to a quantifier can morphologically go on the verb. This is also the case for ‘not more than x’ seen in (80).

- (80) das-e-n aveli kirk tʃ-uni-m
 ten-ABL-DEF more book NEG-have-1S
 ‘I have not more than ten books.’

Finally there is a construction in Armenian where two consecutive numerals can be uttered back to back to express an uncertainty or an approximation as in (81).¹⁴

¹⁴ Thank you to a reviewer for observing this construction, which is also present in Eastern Armenian.

An important restriction is the consecutiveness of the numerals as seen by the ungrammaticality of the last three examples of (82).

- (81) jergu-jerek (had) kirk gartatsi
two-three (CL) book read.PAST.1S
'I read either two or three books.'
- (82) meg-jergu '1-2' (had) kirk gartatsi
tfors-hink '4-5' (had) kirk gartatsi
vets-jotə '6-7' (had) kirk gartatsi
*meg-tfors '1-4' (had) kirk gartatsi
*tfors-jotə '4-7' (had) kirk gartatsi
*vets-utə '6-8' (had) kirk gartatsi

16.4.1.2 Value Judgment Cardinals

Adverbials like *tfap-e-n* 'in relation to the limit' in (83) can modify quantifiers like *aveli* 'more' giving an intensified meaning. Another example of these complex quantifiers is seen in (84), where the quantifier *fad* 'many' is modified by *kitf mə* 'a few' resulting in a meaning of *excess*.

- (83) ՅՕԽՎ-ի-ն *tfap-e-n* *aveli* afagerd ga-r
meeting-DAT-DEF limit-ABL-DEF more student ∃-PAST.3S
'There were too many students at the meeting.'
- (84) *kitf mə* *fad* afagerd ՅՕԽՎ-ի-ն nerga er
few INDEF many student meeting-DAT-DEF present was.3S
'A few too many students were present at the meeting.'

16.4.1.3 Exception Phrases

When expressing 'every x but y' or 'no x but y', WA uses *zad* 'besides' or *patsi* 'except' with the quantifier as seen from the examples below. According to Adjarian's (1957:vol 5, p. 141) grammar of Armenian, *patsi* comes from *pats-i* which was used in Classical Armenian to mean 'separate', and came from the verb *panal* 'to open.' According to Adjarian (1957), *pajts* or *pajts i* became more common perhaps due to a confusion with *pajts* 'but' and was used more often in later times. According to this, *patsi* comes from *pats i* meaning 'separate' or 'far' as in *pats i vədanğneren* 'except for the dangers'. *zad* requires an ablative NP and follows the NP while *patsi* does not require an ablative NP and precedes the quantified NP. The following examples present two or three constituency orders and any relevant preferences.

- (85) Aram-e-n *zad* amen afagerd dun kənats
Aram-ABL-DEF besides all student home go.PAST.3S
'Every student besides Aram went home.'

- (86) amen afagerd Aram-e-n zad dun kənatš
 all student Aram-ABL-DEF besides home go.PAST.3S
 ‘Every student besides Aram went home.’
- (87) patsi Aram-ə/-e-n amen afagerd dun kənatš
 except Aram-DEF/-ABL-DEF all student home go.PAST.3S
 ‘Every student except Aram went home.’
- (88) amen afagerd patsi Aram-ə/-e-n dun kənatš
 all student except Aram-DEF/-ABL-DEF home go.PAST.3S
 ‘Every student except Aram went home.’

The preferred word orders are those with the QP ‘no one student’ being in the pre-verbal position, as opposed to having ‘besides Aram’ intervening linearly. Also ‘every’ can quantify over a bare NP, like in (88) while ‘no’ requires ‘one’ to be able to quantify over the same bare NP, as seen in (89). The word order in (89) is preferred over the word order in (90).

- (89) Aram-e-n zad votʃ *(meg) afagerd dun kənatš
 Aram-ABL-DEF besides no *(one) student home go.PAST.3S
 ‘No student besides Aram went home.’
- (90) [?]votʃ meg afagerd Aram-e-n zad dun kənatš
 no one student Aram-ABL-DEF besides home go.PAST.3S
 ‘No student besides Aram went home.’

As with the above two examples, the quantifiers with ‘no’ are dispreferred in sentence initial position as in (92) and (93) compared to (91).

- (91) patsi Aram-ə/-e-n votʃ meg afagerd dun kənatš
 except Aram-DEF/-ABL-DEF no one student home go.PAST.3S
 ‘No student besides Aram went home.’
- (92) [?]*votʃ meg afagerd patsi Aram-e-n dun kənatš
 no one student except Aram-ABL-DEF home go.PAST.3S
 ‘No student besides Aram went home.’
- (93) [?]votʃ meg afagerd dun kənatš patsi Aram-e-n
 no one student home go.PAST.3S except Aram-ABL-DEF
 ‘No student besides Aram went home.’ (93)

16.4.1.4 Proportional Quantifiers

Proportional quantifiers in Western Armenian are syntactically complex as seen below as opposed to the other classes of quantifiers. They follow the set they quantify over and usually carry a determiner as is shown by the examples below.

- eighty percent of utsun dogos-ə (eighty percent-DEF)
 two thirds of jergu jerort-ə (two third-DEF)
 a (large) majority of (χofoɾ) medz-a-masn-utjun ((huge) big-a-part-NOMZ)
 a (small) minority of (pokɾ) pokɾ-a-masn-utjun ((tiny) tiny-a-part-NOMZ)
 more than twenty kəsan dogos-e-n aveli (twenty percent-ABL-DEF more)
 per cent of
 less than one quarter of karort-e mə bagas (one.quarter-ABL INDEF less)
 between twenty and thirty kəsan-e-n jeresun dogos (twenty-ABL-DEF twenty
 percent of percent)
 all but a tenth of amen-ə patsi meg das-erort-ə (all-DEF except one ten-
 th-DEF)
 (just) a small percentage of (haziv) pokɾ dogos ((just) small percent)
 What percentage of x ? x-u-n kani dogos-ə? (x-DAT-DEF how.many percent-
 DEF?)
 What fraction of x ? intʃ hamemadutjamp x? (what proportion.INST x?)
 half ges
 more than half (of) ges-e-n aveli
 less than half (of) ges-e-n bagas
 exactly half (of) dʒɪft ges
 all (of) amen

These complex proportional quantifiers follow the quantified noun phrase as was the case with the D-quantifier *medzamasnutjun* ‘most’ discussed in the previous section. The noun phrases take either a genitive case marker as seen in (94) or an ablative as in (95).

- (94) afagerd-ner-u-n das-ə ar haryr-ə nerga e-ɾ
 student-PL-GEN-DEF ten-DEF per hundred-DEF present BE-PAST.3S
 ‘Ten out of a hundred students were present.’
- (95) afagerd-ner-e-n karort-e mə bagas tsaxoʒe-ts-an
 student-PL-ABL-DEF quarter-ABL INDEF less fail-PAST-3P
 ‘Less than a quarter of the students failed.’

Here are a few more examples of the quantifiers listed above.

- (96) afagerd-ner-u-n vatsun dogos-ə tsaxoʒe-ts-an
 student-PL-GEN-DEF sixty percent-DEF fail-PAST-3P
 ‘Sixty percent of the students failed.’
- (97) afagerd-ner-u-n karort-e-n bagas-ə tsaxoʒe-ts-an
 student-PL-GEN-DEF quarter-ABL-DEF less-DEF fail-PAST-3P
 ‘Less than a quarter of the students failed.’
- (98) afagerd-ner-u-n amen-ə patsi meg das-erort-ə dun katsin
 student-PL-GEN-DEF all-DEF except one ten-th-DEF home go.PAST.3P
 ‘All but a tenth of the students went home.’

16.4.1.5 Boolean Compounds

Here are some examples of simple boolean compounds and more complex ones. There are two lexical items for ‘and’, namely *u* and *jev*. *jev* is more productive. *u* is usually used to connect two simple NPs as in (100).

- (99) *kər-a-χanut-e-n jergu kirk jev/u vets madid kəne-ts-i*
 letter-*a*-store-ABL-DEF two book and six pencil buy-PAST-1S
 ‘I bought two books and six pencils from the bookstore.’
- (100) *gat u meər bedk uni-m*
 milk and honey need have-1S
 ‘I need milk and honey.’

The conjunction *gam* corresponds to ‘or’ and is syntactically used like ‘and’ as seen in (101). Three other ‘or’ options used for alternatives are *tfe-te*, *tfe-ne* and *te-votf*.

- (101) *tfors gam hink afagerd dun kale-ts-in*
 four or five student home walk-PAST-3P
 ‘Four or five students walked home.’

Another construction used in Western Armenian for boolean compounds has the words for ‘or’ repeated before each conjunct as seen in (102).

- (102) *gam jerek gam tfors had madid kəne-ts-i*
 or three or four CLASS pencil buy-PAST-1S
 ‘I bought either three or four pencils.’

Similar to Turkish this construction extends to negative conjunctions, corresponding to the English ‘neither...nor’ as seen in (103) (Göksel and Kerslake 2005).

- (103) *Aram-ə votf ajsor votf (al) vaḅ-ə bidi dʒaf ude*
 Aram-DEF no today no (also) tomorrow-DEF will food eat.3S
 ‘Aram will eat food neither today nor tomorrow.’
- (104) *votf amen afagerd jev votf al amen usutsitf havakujt-i-n*
 no every student and no also every teacher gathering-DAT-DEF
jega-n
 come-PAST.3P
 ‘Neither every student nor every teacher came to the gathering.’

Here are a few more examples of these complex quantifier compounds.

- (105) *dasə afagerd-e-n aveli, kərataran tʃ-egan*
 ten student-ABL-DEF more library NEG-came.3P
 ‘Not more than ten students came to the library.’
- (106) *nəvazakujn-ə jergu pajts votf das-e-n aveli afagerd kərataran*
 at.least-DEF two but no ten-ABL-DEF more student library
jegan
 came.3P
 ‘At least two but not more than ten students came to the library.’

- (107) medz-a-masn-utjun-ə pajts votʃ amen adʒbarar-ner-ə nabastag-mə
 big-*a*-part-NOMZ-DEF but no every magician-PL-DEF rabbit-INDEF
 per-in
 bring-PAST.3P
 ‘Most but not all magicians brought a rabbit.’

16.4.1.6 Partitives D + of + NP_{def.pl}

Here are a few examples of partitive constructions found in WA. See Sigler (1997:97–98) for further discussion and other examples of Western Armenian partitives.

- (108) afagerd-ner-e-n jergu had-ə dun katsin
 student-PL-ABL-DEF two CLASS-DEF home go.PAST.3P
 ‘Two of the students went home.’
- (109) VOR afagerd-ner-ə dun katsin?
 which student-PL-DEF home go.PAST.3P
 ‘Which students went home?’
- (110) VOR meg afagerd-ner-ə dun katsin?
 which one student-PL-DEF home go.PAST.3P
 ‘Which of the students went home?’

The difference between ‘which of the x’ and ‘which x’ is that in the former the set x is definite and presupposed to be nonempty.

- (111) amen afagerd-ner-ə dun katsin
 all student-PL-DEF home go.PAST.3P
 ‘All (of the) students went home.’

When quantifying over a noun phrase with a demonstrative as in (112) the ablative marker is required on the noun phrase. Whereas with a non-modified noun phrase in a partitive construction as in (113), no case marker is used.

- (112) dʒaf-e-n jedk kavat mə as anuf surdʒ-*(e-n) lav
 meal-ABL-DEF after cup INDEF this sweet coffee-ABL-DEF good
 g-itʃne
 IMPF-go.down.3S
 ‘After the meal a cup of this sweet coffee goes down well.’
- (113) dʒaf-e-n jedk kavat mə surdʒ lav g-itʃne
 meal-ABL-DEF after cup INDEF coffee good IMPF-go.down.3S
 ‘After the meal a cup of coffee goes down well.’

From the two sentences above, we see that the ablative case is required when using a partitive construction as opposed to a regular classifier + bare noun construction. This shows that in fact the partitive construction is syntactically

complex, which supports the idea of all languages having syntactically complex NP partitives.

- (114) afagerd-ner-u-n medz-a-masn-utjun-ə dun katsin
 student-PL-GEN-DEF big-CONN-part-NOMZ-DEF home go.PAST.3P
 ‘The majority of the students went home.’ ‘Most of the students went home.’

A final example of a partitive construction found in WA is shown in (115) with the quantifier *faderə*:

- (115) gentani-ner-e-n jad-er-ə anhedatsan
 animal-PL-ABL-DEF many-PL-DEF disappear.PAST.3P
 ‘Many of the animals disappeared.’

A comparison between phrases like ‘two of the students’ and ‘both of the students’ cannot be made in WA since WA lacks a word for ‘both’.¹⁵

16.4.2 Complex A-Quantifiers

16.4.2.1 Cardinal Quantifiers with Bounding Phrases

Bounding phrases are present in Western Armenian as seen by the example below. The definite marker found on the greater temporal morpheme indicates and gives the ‘each’ or bound reading.

- (116) Aram-ə, fapat-ə hink or, dari-n hisun fapat, g-afχad-i
 Aram-DEF week-DEF 5 day, year-DEF 50 week IMPFTV-work-3S
 ‘Aram works 5 days a week, 50 weeks a year.’

16.4.2.2 Boolean Compounds

With appropriate intonation and speech rate, the following very complex boolean compound is grammatical. The grammatical markers that have been discussed in the previous sections appear in this construction, including the ablative.

- (117) Aram-ə nəvaz-a-kujn-ə jergu pajts votf das-e-n aveli
 Aram-DEF minus-a-NOMZ-DEF two but no ten-ABL-DEF more
 ankam tas-ə paχts-uts-adz e
 times class-DEF miss-PAST-PERF is.3S
 ‘Aram has missed class at least twice but not more than ten times.’

¹⁵ A way to express ‘both’ would be to use the complex quantifier *jerguk-(ə)n al* ‘two of them.’ This quantifier differs from ‘both’ in that other numerals can be used in this phrase, as in *jerek-(ə)n al* ‘the three of them.’

16.5 Comparative Quantifiers

The quantifier *aveli...kan* ‘more...than’ is used to form comparative constructions as seen in (118). An optional *te* morpheme can appear before the second conjunct. This word makes the comparative construction flow better.¹⁶ The meaning switches with the addition of *kitf* ‘few’ as seen in (119).¹⁷

- (118) *aveli afagerd kan (te) usutsitf* խաճ-ի-ն կոնատս
 more student than (*te*) teacher game-DAT-DEF go.PAST.3S
 ‘More students than teachers went to the game.’
- (119) *aveli kitf afagerd kan usutsitf* խաճ-ի-ն ներգա եր
 more few student than teacher game-DAT-DEF present be.PAST.3S
 ‘More teachers than students were present at the game.’

A comparative quantificational statement can be formed with only the morpheme *aveli* ‘more’ plus the use of the ablative as seen in (120). The word order of the first conjunct and the quantifier ‘more’ is inverted in this construction.¹⁸

- (120) *afagerd-(ner)-e aveli usutsitf* խաճ-ի-ն կոնատս
 student-(PL)-ABL more teacher game-DAT-DEF go.PAST.3S
 ‘More teachers than students attended the game.’

As is the case with most of the very complex quantifier constructions, the possessive quantifier in (121) requires precise intonation and appropriate speech rate. In this case the comparative is formed with the word *tʃap* ‘amount’ along with the dative marker on the first conjunct.

- (121) *afagerd-ner-u-n tʃap usutsitf-ner-u-n kirk-er-ə*
 student-PL-DAT-DEF amount teacher-PL-GEN-DEF book-PL-DEF
dzaχ-v-adz e-ji-n
 sell-PASS-PERF BE-PAST-3P
 ‘Just as many students’ as teachers’ books were sold.’

16.6 Type (2) Quantifiers

Here are the corresponding examples to the set of sentences that show a binary relation between two sets. As seen from all the examples below, the two phrases follow one another and are not embedded in each other. For (123) some

¹⁶ The exact meaning or use of this morpheme is very unclear. There are many contexts where *te* is used in WA, *gardzes-te*, *ipər-te*, *votf-te*, *haziv-te*, *mi-te*, *te-jev*, *te-guz*, *te-ov*. . .

¹⁷ Thanks to a review for observing this more complex construction. Another complex comparative quantifier that is formed with the quantifier *hents* ‘just’ in Eastern Armenian is *hents ajnkan afakert kan usutsitf* ‘just as many students as teachers.’

¹⁸ Comparatives can also be formed without a comparative quantifier, using the ablative marker.

speakers prefer not repeating the same universal quantifier *amen* ‘all’ for the second position, and therefore use *polor*.

(122) VOR afagerd-ə kənutjan VOR hartsum-ə badasχan-ets?
 which student-DEF exam.GEN which question-DEF answer-PAST.3S?
 ‘Which student answered which question on the exam?’

(123) amen afagerd kənutjan amen/polor hartsum-ner-ə
 all student exam.GEN all question-PL-DEF
 badasχane-ts
 answer-PRFV.PAST.3S
 ‘All the students answered all the questions on the exam.’

For all of the examples in this subsection, there is an intonational break before the second QNP, specifically before the second quantifier. For example in (124) and (125) this break is before *darper*.

(124) amen meg afagerd kənutjan vra darper hartsum mə
 every one student exam.GEN on different question INDEF
 badasχan-ets
 answer-PAST.3S
 ‘Each student answered a different question on the exam.’

(125) darper/zanazan afagerd-ner darper kirk-er garta-ts-i-n
 different student-PL different book-PL read-PRFV-PAST-3P
 ‘Different students read different books.’

(126) nujn fenk-i-n darper harg-a-pažin-ner-u metf g-abri-n
 same building-GEN-DEF different floor-a-part-PL-DAT in IMPF-live-3P
 ‘They live in different apartments in the same building.’

(127) χaβ-i-n polor masnagtsoβ-ner-ə nujn kujn fabig hakadz
 game-GEN-DEF all participant-PL-DEF same color shirt wear
 e-ji-n
 is-PAST-3P
 ‘All the participants of the game wore the same color shirt.’

(128) (darper) tadavor-ner-ə nujn badzarapanutjun-ner-e-n darper
 (different) judge-PL-DEF same argumentation-PL-ABL-DEF different
 jezragatsutjun-ner-u hasa-n
 conclusion-PL-DAT reach-3P
 ‘The (different) judges drew different conclusions from the same arguments.’

The next example contains a negative infinitive which undergoes negative concord with a present verbal negative marker. More is discussed about negative quantifiers in Section 16.19.

- (129) Aram-ə Talar-i-n hed bare-ts, pajts votf-meg-ə urif
 Aram-DEF Talar-DAT-DEF with dance-PAST.3S, but no-one-DEF other
 meg-u mə hed tʃi-bare-ts
 one-DAT INDEF with NEG-dance-PAST.3S
 ‘Aram danced with Talar, but no one else danced with anyone else.’

For these last two examples the preferred word order is with the two QNPs separated by the verb.

- (130) nəgar-ner-ə zad senjag-ner-u metf bedke gaχ-v-adz
 picture-PL-DEF separate room-PL-DAT in must hang-PASS-PERF
 əlla-n gam al tem-timats nujn senjag-i-n metf
 be-3P or also opposing same room-DAT-DEF in
 ‘The pictures must be hung in separate rooms, or else opposing walls
 in the same room.’
- (131) Aram-n u Hagop-ə antam e-n hagaragort
 Aram-DEF and Hagop-DEF member is-3P rival
 gazmagerbutjun-ner-u
 organization-PL-GEN
 ‘Aram and Hagop are members of rival organizations.’

16.7 Distributive Numerals

There are two methods of forming distributive numerals from the cardinals, by full-reduplication of the cardinal numeral or by suffixation of *-agan*.¹⁹ The reduplicative distributive numerals seem to be adverbial, since they are free to surface either sentence initially, medially or finally as seen in (132) and (133).

- (132) (jergu-jergu) tasaran (jergu-jergu) məda-n (jergu-jergu)
 (two-two) class (two-two) enter-PAST.3P (two-two)
 ‘They entered the classroom (two by two).’
- (133) (meg-meg) tʃor-ort tasaran-i afagerd-ner-ə (meg-meg)
 (one-one) four-th class-GEN student-PL-DEF (one-one)
 ardasane-ts-in (meg-meg)
 recite-PAST-3P (one-one)
 ‘The fourth grade students recited (one by one).’

The *-agan* suffixed distributive numerals act as adnominals, restricted to the pre-nominal position as seen in (134).²⁰

¹⁹ Discussed by Sakayan (2000:121)

²⁰ This suffix is mainly used as an adjectivizer, attaching to nouns.

- (134) Aram-ə meg-agan kəntag nəvire-ts amen afagerd-ner-u-n.
 Aram-DEF one-ADJ ball gift.PAST.3S every student-PL-DAT-DEF.
 ‘Aram donated one ball to every student.’

The wh-word for ‘how-many’ can also take the same adjectival suffix resulting in a distributive wh-word as seen in (135):

- (135) kani-agan dolar əsta-ts-ak? kəsan-agan. [Sakayan
 how.many-ADJ dollar receive-PAST-2P? twenty-ADJ
 2000:122]
 ‘How many dollars did each of you receive? Twenty each.’

16.8 Mass Quantifiers and Noun Classifiers

16.8.1 Numeral Classifiers

WA also has a word *had* for ‘piece’, ‘unit’ or ‘individual’, which mostly corresponds to the Turkish word *tane* (Göksel and Kerslake 2005). For more on the distribution and uses of *had* see Sigler (1997, 2003). Two other potential classifiers are *hoki* ‘soul/individual’ used with humans and *had-ig* ‘grain’ used for grain-like elements.

- (136) jerek had kirk
 three CL book
 ‘three individual books’
- (137) hink hoki-nots oto
 five soul-GEN car
 ‘five person car’
- (138) vets hadig pərints
 six grain rice
 ‘six grains of rice’

16.8.2 Container Expressions

Classifiers are common in WA. The nouns that combine with the classifiers are always bare and cannot take any marking. Any nominal that can be considered a container can act as a classifier.

- (139) jerek təkəl-(*ner)-(*ə) fakar
 three spoon-(*PL)-(*DEF) sugar
 ‘three spoons of sugar’
- (140) jergu kavat tfur
 two cup water
 ‘two cups of water’

- (141) jerek kəluχ soχ
 three head onion
 ‘three heads of onions’

16.8.3 *Measure Phrases*

Units of measurement can also act as classifiers.

- (142) jergu kilo madid
 two kilogram pencil
 ‘two kilograms of pencils’

16.8.4 *Mass vs. Count Qs Without Classifiers*

16.8.4.1 *Count, but Not Mass Nouns*

Some D-quantifiers combine with count but not mass nouns

- (143) *jerek kavat* ‘three cup’, **jerek tfur* ‘three water’

- (144) kani kavat χəme-ts-ir?
 how.many cup drink-PAST-2S
 ‘How many cups [of x] did you drink?’

- (145) kani dun desa-r?
 how.many house see-PAST.2S
 ‘How many houses did you see?’

- (146) *kani (had) tfur χəme-ts-ir?
 how.many CLASS water drink-PAST-2S
 *‘How many waters did you drink?’

With NPs that usually act as mass NPs, when using a classifier, we get a count NP reading, implying pieces/kernals/units.of:

- (147) *kani nuf gera-r?
 how.many nut eat-PAST.2S
 ‘How many nuts did you eat?’

- (148) kani had nuf gera-r?
 how.many CLASS nut eat-PAST.2S
 ‘How many nuts did you eat?’

16.8.4.2 Both Mass and Count Nouns

Some Dets combine with both mass and count nouns as mentioned above:

(149) *fad kini* ‘a lot of wine’ / *fad kirk* ‘a lot of books’

(150) *kitf-mə kini* ‘some wine’ / *kitf-mə kirk* ‘some books’

(151) *amen kini* ‘all wine’ / *amen kirk* ‘all books’

(152) *vorkan kini* ‘how.much wine’ / *vorkan kirk* ‘how.much book’

16.8.4.3 Mass, but Not Count Nouns

There does not seem to be any D-quantifiers that exclusively combine with mass nouns.

16.9 Existential Constructions

Western Armenian uses the free standing morpheme *ga* to express existentials. This lexical item comes in 12 forms, with 6 non-past and 6 past forms, as shown by the table in (153)^{21, 22}:

	Non-past		Past		
	Singular	Plural	Singular	Plural	
(153)	1	<i>ga-m</i>	<i>ga-nk</i>	<i>ga-ji</i>	<i>ga-ji-nk</i>
	2	<i>ga-s</i>	<i>ga-k</i>	<i>ga-ji-r</i>	<i>ga-ji-k</i>
	3	<i>ga</i>	<i>ga-n</i>	<i>ga-r</i>	<i>ga-ji-n</i>

As expected in an SOV language, the existential is usually found at the end of both declarative and interrogative sentences as seen in the following examples.

(154) *hima kərataran-i-n metf-(ə) kəsan had afagerd ga, jereg hink*
 now library-GEN-DEF in-(DEF) twenty CL student ∃.3S, yesterday five
 had *ga-r*
 CL ∃-PAST.3S

‘There are now twenty students in the class, yesterday there were five.’

(155) *kərataran-i-n metf-(ə) meg-ə ga*
 library-GEN-DEF in-(DEF) one-DEF ∃.3S
 ‘There is someone in the library.’

²¹ This verb is marked for tense and number like most verbs.

²² Existence can also be expressed with the lexical entry *kojutjun unena-l* ‘existence have-INF.’ However as is the case for the English item *to exist*, this string is pragmatically restricted to concepts or technical jargon.

- (156) *kərataran-i-n metf-(ə) OV ga?*
 library-GEN-DEF in-(DEF) who \exists .3S?
 ‘Who is in the library?’

A negative existential follows verbs in that the negative element is immediately pre-verbal, therefore pre-existential as seen in (157). As in English, the negative morpheme on the existential is the same negation found on any declarative sentence. However unlike Malagasy, WA expresses possession using *unenal* ‘to have’ instead of using the existential morpheme as seen in (158).

- (157) *kərataran-i-n metf-(ə) meg-ə chi-ga*
 library-GEN-DEF in-(DEF) one-DEF NEG- \exists .3S
 ‘There isn’t anyone in the library.’

- (158) *Aram-i-n dun-ə atamant-i senjag mə*
 Aram-GEN-DEF house-3S.POSS diamond-GEN room INDEF
 *ga/uni
 * \exists .3S/has.3S
 ‘Aram’s house has a diamond room.’

In reference to ‘the pivot position in Existential S[entences],’ there do not seem to be any determiners blocked from such a position as they are in English like in (159) and (161), versus (160) and (162) of WA:

- (159) *Aren’t there all students in the class?

- (160) *tasaran-i-n metf-(ə) amen afagerd-ner-ə TJI-GA-N?*
 classroom-GEN-DEF in-(DEF) all student-PL-DEF NEG- \exists -3P?
 ‘Aren’t there all the students in the classroom?’

- (161) *Aren’t there most students in the class?

- (162) *tasaran-i-n metf-(ə) afagerd-ner-u-n medzamasnutjun-ə*
 classroom-GEN-DEF in-(DEF) student-PL-GEN-DEF majority-DEF
 TJI-GA-N?
 NEG- \exists -3P?
 ‘Aren’t there most students in the classroom?’

16.10 Floating Quantifiers

There are no floating D-quantifiers in Western Armenian.

- (163) *(kani-mə) afagerd-ner (*kani-mə) jereg (*kani-mə) dun*
 (few-INDEF) student-PL-DEF (few-INDEF) yesterday (few-INDEF) home
 (*kani-mə) katsi-n
 (few-INDEF) go.PAST-3P
 ‘Some students went home yesterday.’

The only exception to the strict ordering restrictions of quantifiers seems to be the quantifier *medzamasnutjunə* ‘most’ seen in (164). The preferred position for this quantifier is after the noun phrase, but a second position, namely right before the noun phrase is also an acceptable surface location. It is unclear whether this is due to scrambling or due to actual quantifier floating.²³

- (164) (*medzamasnutjunə*) aʃagerd-ner-u-n *medzamasnutjunə* dun
 (most) student-PL-DAT-DEF most Home
 katsin
 went.3P
 ‘Most students went home.’

16.11 Qs as Predicates

16.11.1 Bare Qs as Predicates

WA seems to pattern with English and Malagasy in allowing only cardinal numerals and value judgment cardinals as predicates.

- (165) aʃagerd-ner-ə ʃad /kitʃ/ /pazm-a-tiv /*das/ /*kani-mə
 student-PL-DEF many /few/ /many-CONN-number /*ten/ /*few-INDEF
 e-n
 be-3P
 ‘The students are many/few/numerous/*ten/*some.’

16.11.1.1 Qs as DPs

Recall (166) where a classifier is required. Some quantifiers, cardinal numerals, function as DPs.

- (166) kirk-er-ə arʒan e-ji-n, anor hamar hink /kani-mə
 book-PL-DEF inexpensive be-PAST-3P, that.DAT for five /few-INDEF
 *(had) kəne-ts-i
 CLASS buy-PAST-1S
 ‘The books were inexpensive, so I bought three/a few.’
- (167) *kirk-er-ə arʒan e-ji-n, anor hamar kitʃ-mə /ʃad-mə
 book-PL-DEF inexpensive be-PAST-3P, that.DAT for few-INDEF /many-INDEF
 /amen kəne-ts-i
 /all buy-PAST-1S
 **‘The books were inexpensive, so I bought three/a few/many/all.’

²³ For some speakers some universal quantifiers, namely *amen*, *polor*, and *ləman* which usually surface before the noun phrase, can surface after the noun phrase as well parallel to ‘most.’

kani-mə ‘a few’ is acceptable as a DP but *fad-mə* ‘many’ and *kitf-mə* ‘a small amount’ are not. [kani] is the wh-word expressing ‘how many.’

fad-(mə) and *kitf-(mə)* cannot be used before classifiers as seen in (168).

- (168) kirk-er-ə arʒan e-ji-n, anor hamar fad /kitf (*had)
 book-PL-DEF inexpensive be-PAST-3P, that.DAT for many /few (*CL)
 kəne-ts-i
 buy-PAST-1S
 ‘The books were inexpensive, so I bought a lot/little amount [of them].’

As seen from (168), *fad* ‘many’ and *kitf* ‘few’ cannot appear with a classifier, but they can function as DPs. Therefore only these two lexical items can appear as independent DP arguments.

16.12 Universal Quantifiers from Interrogatives

All the interrogative pronouns, except ‘why’ can combine with the complementizer ‘that’:

- whoever ov vor (who that)
 whenever jerp vor
 wherever ur vor
 whatever intʃ vor
 however intʃbes vor
 whomever vor-u(-n) vor (that-DAT(-DEF))
 whichever vor-meg-ə vor (that-one-DEF)
 *whyever *intʃu vor

- (169) ov vor dun jerta, toʒ amen lujs-er-ə mare
 who that home go.3S, let all light-PL-DEF turn.off.3S
 ‘Whoever goes home should turn off all the lights.’

- (170) vor-u-n vor desne-s, hampure!
 that-DAT-DEF that see-2S, kiss.2S
 ‘Kiss whoever you see!’

It is possible to use more than one of these quantifiers much like multiple-wh questions as seen in (171). The word order of these universals are very loose.

- (171) ov vor jerp vor ur vor intʃ vor əne, bedke hos artsanake
 who that when that where that what that do.3S, must here record.3S
 ‘Whoever does whatever, wherever, whenever, must record it here.’

Negative existential pronouns are formed with the morpheme for ‘no’ *voʃ* with ‘one’ *meg* and one of the following {ə, *aden*, *deʒ*, *pan*} ‘DEF, time, place, thing.’

The only form that optionally uses an interrogative morpheme is the pronoun corresponding to ‘nothing’ *votf-intf*, where *intf* is the wh-word for ‘what.’ However the lexical item *votf-meg-pan* ‘nothing’ seems to be more common in Western Armenian.

16.13 Decreasing NPs

Western Armenian does have Dets, from all three categories, intersective (172), (173), co-intersective (174), and proportional (175), which build decreasing NPs as seen with the examples below.

- (172) *votf-meg afagerd tasaχosut-jan nerga e-r*
 no-one student lecture-DAT present is-PAST.3S
 ‘No student attended the lecture.’
- (173) *hing-e-n bagas afagerd nerga e-ji-n*
 five-ABL-DEF less student present is-PAST-3P
 ‘Fewer than five students were present.’
- (174) *votf amen bəzdig jad gu-la*
 no every child many IMPF-cry.3S
 ‘Not all children cry a lot.’
- (175) *afagerd-ner-u-n karort-e-n bagas-ə kənutjun-ə*
 student-PL-GEN-DEF quarter-ABL-DEF less-DEF exam-DEF
ants-uts
 pass-PAST.3S
 ‘Less than a quarter of the students passed the exam.’

Some of these decreasing NPs do license NPIs, as seen by comparing (176) to (177):

- (176) *votf-meg afagerd pənav/hetf Zəvitserja kats-adz e*
 no-one student ever Switzerland go-PERF is.3S
 ‘No student has ever gone to Switzerland.’
- (177) **jug-a-n vets-e-n bagas gin pənav/hetf des-adz e-m*
 store-DEF six-ABL-DEF less woman ever see-PERF is-IS
 ‘I have never seen less than six women at the store.’

16.14 Distribution

16.14.1 Grammatical Function

QNP in WA occur in all major grammatical functions: subject, object, object of adposition, and possessor as illustrated below.

Subject:

- (178) amen afagerd-ner-ə gera-n
 all student-PL-DEF eat.PAST-3P
 ‘All the students ate.’

Object:

- (179) Aram-ə jergu gədor gera-v
 Aram-DEF two piece eat.PAST-3S
 ‘Aram ate two pieces.’
- (180) Aram-ə gədor-ner-u-n jerek-karort-ə gera-v
 Aram-DEF piece-PL-GEN-DEF three-quarter-DEF eat.PAST-3S
 ‘Aram ate three quarters of the pieces.’
- (181) Aram-ə jergu gədor-e zad amen-ə gera-v
 Aram-DEF two piece-ABL except all-DEF eat.PAST-3S
 ‘Aram ate all but two of the pieces.’

Object of adposition:

- (182) Aram-ə fad-mə afagerd-ner-u (hamar) kirk kəne-ts
 Aram-DEF many-INDEF student-PL-DAT (for) book buy-PAST.3S
 ‘Aram bought books for many of the students.’
- (183) Aram-ə tʃors kirk tər-av amen səʔan-i vərə
 Aram-DEF four book put-PAST.3S all table-GEN on
 ‘Aram put four books on all the tables.’

Possessor:

- (184) amen afagerd-ner-u-n kirk-er-ə kedin inga-n
 all student-PL-GEN-DEF book-PL-DEF floor fall.PAST-3P
 ‘All of the students’ books fell on the floor.’
- (185) Aram-ə afagerd-ner-u-n jerek-karort-i-n niʃ-er-ə
 Aram-DEF student-PL-GEN-DEF three-quarter-GEN-DEF grade-PL-DEF
 dʒəʃte-ts
 assign-PAST.3S
 ‘Aram assigned three-quarters of the students’ grades.’

16.14.2 *Definite NPs*

Definiteness is expressed with a definite suffix on NPs. Another suffix can never attach after the definite marker, as seen by the multiple suffixed word in (186).

- (186) kər -v -adz -ner -e -n
 write -PASS -PRF -PL -ABL -DEF
 ‘From the written ones’

The definite marker can attach to any noun or adjective to form a definite NP. For more on the distribution and semantic details of the definite marker see Sigler (1997).

- (187) garmir -ə
 red -DEF
 ‘The red one’

Demonstratives precede the nouns they modify. Unlike English plurality is not marked on the demonstratives for plural NPs as seen by (189).

- (188) as/ at/ an fun-ə
 this/ that/ yonder dog-DEF
 ‘This/that/that.yonder dog.’
- (189) as/ at/ an gadu-ner-ə
 this/ that/ yonder cat-PL-DEF
 ‘These/those/those.yonder cats.’

However plural forms of the demonstratives exist. They are full fledged definite plural NPs and cannot be followed by a noun. These demonstratives appear with the Classical Armenian plural marker *-k*.

- (190) asonk/ adonk/ anonk desa
 these/ those/ yonder see.PAST.1S
 ‘I saw these/those/those.yonder.’
- (191) *asonk gadu-ner-ə
 these cat-PL-DEF

Finally there is a set of definite singular demonstratives that can stand as NPs.

- (192) asiga/ adiga/ aniga desa
 this/ that/ that.yonder see.PAST.1S
 ‘I saw this/that/that.yonder one.’
- (193) *asiga gadu-n
 this cat-DEF

Possessive constructions are formed using the genitive marker. As mentioned above the definite suffix follows the genitive case. However the plural marker precedes the genitive as seen in (195).

- (194) Aram-i-n kirk-ə
 Aram-GEN-DEF book-DEF
 ‘Aram’s book’
- (195) kirk-er-u-n nyt-ə
 book-PL-GEN-DEF topic-DEF
 ‘The books’ topic’
- (196) kirk-i-n etf-er-ə
 book-GEN-DEF page-PL-DEF
 ‘The book’s pages’

The first and second person possessive clitics, *-s* and *-t* respectively, can take the place of the definite marker indicating the appropriate person. The 3S and all the plural possessive markers are homophonous with the definite article, *-ə/n*.

- (197) kirk-er-u -{s/t} etf-er-ə
 book-PL-GEN -1S/2S page-PL-DEF
 ‘My/Your books’ pages’

Here are a few examples of quantifiers interacting with possessives. The next examples show that quantified nouns can be embedded as possessors.

- (198) amen afagerd-i madid-ə təkın e
 all student-GEN pencil-DEF yellow is.3S
 ‘Every student’s pencil is yellow.’
- (199) votf-meg afagerd-i majr-ə nerga e
 no-one student-GEN mother-DEF present is.3S
 ‘No student’s mother is present.’
- (200) amen afagerd-i hor-ə dun-ə medz e
 all student-GEN father.GEN-DEF house-DEF big is.3S
 ‘Every student’s father’s house is big.’

Finally, a generic interpretation of NPs can be obtained using either a definite non-plural or an optionally definite plural nominal. The definite marker is obligatory in the absence of the plural marker comparing (201) with (202). It seems that the generic interpretation of NPs is only available in the subject position. Definiteness restrictions in Western Armenian are discussed in length in Sigler (1997).

- (201) fun-*(ə) gə-χadzne
 dog-*(DEF) IMPF-bite.3S
 ‘Dogs bite.’

- (202) fun-er-(ə) gə-χadzne-n
 dog-PL-(DEF) IMPF-bite-3P
 ‘Dogs bite.’
- (203) mərtfyn-*(ə) arak-(oren) gə-daradz-v-i
 ant-*(DEF) fast-(ADV) IMPF-spread-PASS-3S
 ‘Ants spread quickly.’
- (204) mərtfyn-ner-(ə) arak-(oren) gə-daradz-v-in
 ant-PL-(DEF) fast-(ADV) IMPF-spread-PASS-3P
 ‘Ants spread quickly.’
- (205) ahraməbez-*(ə) votʃəntʃatsadz /pənatʃəntʃəvadz e
 dinosaur-*(DEF) annihilated /extinct is.3S
 ‘Dinosaurs are extinct.’
- (206) ahraməbez-ner-(ə) votʃəntʃatsadz /pənatʃəntʃəvadz e-n
 dinosaur-PL-(DEF) annihilated /extinct is-3P
 ‘Dinosaurs are extinct.’

16.15 Scope Ambiguities

Two or more arguments of a given predicate can be bound simultaneously by QNPs as seen by the many examples below, which lead to the ambiguities discussed in this subsection. For example with (207), we can get both subject wide scope (SWS) and object wide scope (OWS) readings. It should be observed that these judgments are available with the appropriate context and intonation.

- (207) amen afagerd kirk-mə garta-ts
 all/every student book-INDEF read-PAST.3S
 ‘Every student read a book.’
 SWS: For every student *x*, *x* read one book.
 OWS: There is one book *x*, such that every student read *x*.

For the following type of example we can get three possible readings, the two discussed above and a group reading. The preferred plural marking brings about this group interpretation, compared to (207). These three readings are also available for the sentence in (209).

- (208) haryr afagerd tʃors fenk jine-ts-in
 hundred student four building build-PAST-3P
 ‘A hundred students built four buildings.’
 SWS: There are 100 students each of whom built 4 buildings.
 OWS: There are 4 buildings such that 100 students built each of those 4 buildings.
 Group: There is a group of 100 students who collectively built a group of 4 buildings.

- (209) jerek usutsitʃ-ner haryr kənutjun-ner sərpaʃkre-ts-in
 three teacher-PL hundred exam-PL correct-PAST-3P
 ‘Three teachers corrected hundred exams.’

As is the case in English, in WA modified numerals, in the case of (210) the quantifiers ‘at least’, and ‘exactly one’ in (211), block the OWS reading therefore restricting the scope ambiguity to just the SWS.

- (210) amen aʃagerd nəvazakujn-ə meg kirk-mə garta-ts
 all/every student at.least-DEF one book-INDEF read-PAST.3S
 ‘Every student read at least one book.’
 SWS: For every student *x*, *x* read at least one book.
 OWS: [?]*There is at least one book *x*, such that every student read *x*.
- (211) amen aʃagerd (mi-)mij-ajn meg usutsitʃ-i gantʃe-ts
 all/every boy (one-)one-that one teacher-gen call-PAST.3S
 ‘Every boy called exactly one teacher.’

For decreasing DPs there is a preference to interpret them in situ as opposed to having an OWS reading as seen with (212).

- (212) votʃ-meg aʃagerd amen hartsum badasʃane-ts
 no-one student all/every question answer-PAST.3S
 ‘No student answered every question.’
 SWS: There does not exist a student *x* such that *x* answered every question.
 OWS: [?]Every question was not answered by any one student.

The preference to interpret a decreasing DP in situ is seen with the following pair of sentences. In (213) the negative DP is in the subject position giving the interpretation of the SWS in (212). While in (214) the preferred interpretation is the OWS of (212) since the decreasing DP is found in the object position.

- (213) votʃ-meg teknadzu amen bəzdig-i hampure-ts
 no-one candidate every child-DAT kiss-PAST.3S
 ‘No candidate kissed every child.’
- (214) amen teknadzu votʃ-meg bəzdig-i hampure-ts
 every candidate no-one child-DAT kiss-PAST.3S
 ‘Every candidate kissed no child.’

Comparing the two universal quantifiers in the next two examples, (215) has a very strong reading of one picture featuring all the students, while (216) rather refers to many pictures, one per student.

- (215) jurakantʃyr aʃagerd-i nəgar-ə səʃan-i-n vra-n e-r
 each student-GEN picture-DEF table-DAT-DEF on-DEF is-PAST.3S
 ‘A picture of each student was on the table.’

- (216) *amen afagerd-ner-u nəgar-ə seʒan-i-n vɾa-n e-r*
 every student-PL-GEN picture-DEF table-DAT-DEF on-DEF is-PAST.3S
 ‘A picture of each student was on the table.’

For *wh*-questions the first two examples below have just the SWS readings available, while both readings are available for the third.

- (217) *VOR afagerd-ə amen-e ʃad hartsum-ner-ə badasχane-ts?*
 which student-DEF every-ABL many question-PL-DEF answer-PAST.3S?
 ‘Which student answered the most questions?’
- (218) *VOR afagerd-ə amen hartsum-ner-ə badasχane-ts?*
 which student-DEF every question-PL-DEF answer-PAST.3S?
 ‘Which student answered all the question?’
- (219) *jurakantfyr afagerd VOR harsum-ə badasχane-ts?*
 each student which question-DEF answer-PAST.3S?
 ‘Which question did each student answer?’

In the case of the self embedding QNPs, in (220), both readings are available.

- (220) *amen nergajatsutsitf-i amen ənger-ner-ə partsrahasag e-n*
 every representative-GEN every friend-PL-DEF tall BE-3P
 ‘Every friend of every representative is tall.’

Finally for the example in (221) both SWS and adverbial wide scope readings are available for the case of verbal quantification.

- (221) *jergu aχtʃig jerek ankam jerke-ts-in*
 two girl three times sing-PAST-3P
 ‘Two girls sang three times.’

16.16 One to One Dependency

A one-to-one dependency can be formed using the universal quantifier *amen* ‘all’ and the ablative marker as seen in (222). The optional numeral *meg* ‘one’ can be added after the quantifier to strengthen the one-to-one dependency.

- (222) *amen (meg) antsrev-i gatil-e dzaxig-mə gə-dzəli*
 all (one) rain-GEN drop-ABL flower-INDEF IMPFV-sprout.3S
 ‘From every drop of rain a flower sprout.’

16.17 Rate Phrases

The definite marker on the temporal morpheme plus a following numeral is used to express the notion of ‘times’ as seen below. The word *arakutjamp* is necessary to indicate that the desired reading is one of a rate phrase. However without this adverb, the intended meaning can be understood.

- (223) Aram-ə or-ə hink havgit g-ude
 Aram-DEF day-DEF five egg IMPF-eat.3S
 ‘Aram eats five eggs a day.’
- (224) nav-ə vargjan-ə jergu metr (arak-utjamp) g-erta
 ship-DEF minute-DEF two meter (fast-NOMZ.INSTR) IMPF-go.3S
 ‘The ship travels (with a fastness of) two meters per minute.’
- (225) Aram-ə kəfets ʒam-ə vatsun məʒon arakutjamp
 Aram-DEF drove.3S hour-DEF 60 mile fastness
 ‘Aram drove 60 miles per hour.’

16.18 Units of Time and Distance

Bare nouns denoting temporal units are modified by bare numerals as seen in (226) and (227):

- (226) vets ʒam kəna-ts-a
 six hour sleep-PAST-1S
 ‘I slept for six hours.’
- (227) kəsan vargjan kaletsi
 twenty minute walk.PAST.1S
 ‘I walked for twenty minutes.’
- (228) tʃors or-e-n bidi veratarna-m
 four day-ABL-DEF will return-1S
 ‘I will return in four days.’
- (229) ʃapdə-van metʃ jotə or ga
 week-GEN in seven day ∃.3S
 ‘There are seven days in a week.’

Distance measurements between two locations can be expressed using either the construction seen in (230) or in (231), using the morpheme *heru* ‘far’ in the object position, which is quantified by the numeral ‘200’ and the classifier like distance unit ‘mile.’

- (230) New York-e-n Boston jergu haryr məʒon e
 New York-ABL-DEF Boston two hundred mile is.3S
 ‘It is 200 miles from New York to Boston.’
- (231) Boston-ə New York-e-n jergu haryr məʒon heru e
 Boston-DEF New York-ABL-DEF two hundred mile far is.3S
 ‘Boston is 200 miles from New York.’

However differences of height between two individuals can only be expressed using the ablative construction seen below, which is parallel to the construction seen in (231) between two locations:

- (232) Aram-ə Hagop-e-n jerek santim gardz e
 Aram-DEF Hagop-ABL-DEF three cm short is.3S
 ‘Aram is three centimeters shorter than Hagop.’

16.19 Negative Quantifiers

Western Armenian has both negative polarity items (NPIs) and lexical items that present negative concord situations as discussed by Penka (2007) and by many references within. I first present NPIs and then demonstrate a group of negative words which when appearing with sentential negation contribute only one negation to the semantic interpretation. Finally I present two negative lexical items that are used only for imperatives.

16.19.1 NPIs

There are two lexical items that correspond to the English NPI ‘ever’. One borrowed from Turkish, *hetf* and another, *pənav* (Kelepir 2001). WA prescriptive rules forbid the use of *hetf*,²⁴ deeming *pənav* as the ‘cleaner’ version and the traditionally correct form. However most speakers of Western Armenian use these two forms almost interchangeably:

- (233) *hetf/pənav* *(tʃi)-gera
 ever NEG-eat.PAST.1S
 ‘I didn’t eat at all.’

These two NPIs require some form of licenser, specifically they must occur in the scope of a downward-entailing expression or a polar question as is the case for most NPIs as discussed by Ladusaw (1979). Common environments being sentential negation, yes/no questions and conditionals. As seen from (233) and the following two examples these three environments do license both *hetf* and *pənav*.

- (234) *hetf/pənav* GERA-R?
 ever eat.PAST-2S?
 ‘Did you ever eat?’
- (235) *jete* Aram-ə *hetf/pənav* *desne-s*, *indzi* *lur* *dur*
 if Aram-DEF ever see-2S, 1S.DAT news give.2S.IMP
 ‘If you ever see Aram, let me know.’

Both of these NPIs can be uttered as an answer to a question, resulting in a negative interpretation:

²⁴ This has been ingrained in some speakers who express strong dissatisfaction and insist on using *pənav*.

- (236) mis G-UDE-S? pənav!
 meat IMPF-eat-2S? ever
 ‘Do you eat meat? Never!’
- (237) INTʃ g-əne-s-gor? hetʃ!
 what IMPF-do-2S-PROG? ever!
 ‘What are you doing? Nothing!’

The two words for ‘ever’ contrast with regard to forming more complex NPIs with *meg* ‘one,’ *pan* ‘thing’ and *deɤ* ‘place.’ Only *hetʃ* seems to be part of complex NPIs. Although *pənav* can appear in the same context, the constituency and interpretation are different as seen from the examples below:

- (238) [[[*hetʃ deɤ*] mə] tʃi-katsi]
 ever place INDEF NEG-GO.PAST.1S
 ‘I didn’t go anywhere.’ (focus on place)
- (239) [*pənav* [[*deɤ mə*] tʃi-katsi]]
 ever place INDEF NEG-GO.PAST.1S
 ‘I never went anywhere.’ (focus on the going)

From this I conclude that *hetʃ*, unlike *pənav*, is capable of forming more complex NPIs like ‘ever-one,’ ‘ever-thing’ and ‘ever-where’ which also require some form of licensing.

One final comment about these two NPI words is that when they are in the scope of a downward entailing environment other than that of negation, then negation adds to the semantic interpretation as seen from the following example, which is identical to example (235) except for an added verbal negation on the first verb:

- (240) jete Aram-ə hetʃ/pənav tʃi-desne-s, indzi lur dur
 if Aram-DEF ever NEG-see-2S, 1S.DAT news give.2S.IMP
 ‘If you ever don’t see Aram, let me know.’

Besides the two lexical items corresponding to ‘ever’ there are two other NPIs: *vojeve-* that corresponds to ‘any’ and *jerpek* corresponding to ‘ever.’

The NPI *vojeve-* is a bound morpheme that can attach to *meg* ‘one,’ *pan* ‘thing’ and *deɤ* ‘place’ like the NPI *hetʃ*.²⁵ Just like the ‘ever’ NPIs, *vojeve-* requires a licenser, which sentential negation, yes/no questions or conditional constructions for example satisfy:

- (241) *jereg, vojeve-deɤ katsi
 yesterday, any-place go.PAST.1S
 ‘*I went anywhere yesterday.’

²⁵ Prescriptively there are two lexical items *vojeve-* and *voreve-* that correspond to ‘any.’ *vojeve-* is prescriptively supposed to be used with ‘one’ and *voreve-* with ‘thing’ or ‘place.’ However in the present day language almost all WA speakers use these two variants interchangeably.

- (242) *vojeve-pan* *tʃ-əri*
 any-thing NEG-do.PAST.1S
 ‘I didn’t do anything.’

A somewhat interesting construction is the one with *vojeve-* occurring with *pənav*, where *pənav* contributes a ‘never’ meaning:

- (243) *pənav vojeve pan tʃ-e-m ger-adz*
 ever any thing NEG-be-1S eat-PERF
 ‘I have never eaten anything.’

To get the ‘never’ interpretation with just one lexical item, the free standing morpheme *jerpek* is used, which also acts as an NPI. Morphologically it contains the string *jerp* which is the word for ‘when’ but *-ek* has no transparent meaning. Like the other NPIs mentioned before this word must also be in the scope of a downward-entailing expression:

- (244) *jerpek dun KATSI-R?*
 ever home go-2S
 ‘Did you ever go home?’

As the previous NPIs *jerpek* can stand as the answer to a question and as demonstrated in (240) for the ‘ever’ NPIs, an additional downward entailing environment will add to the meaning and not just be a vacuous licenser of the NPI, as shown in (245):

- (245) *jete jerpek dun tʃ-erta-s, indzi lur dur*
 if ever home NEG-go-1S, 1S.DAT news give.2S.IMP
 ‘If you ever don’t go home, let me know.’

16.19.2 Negative Concord

Negative indefinites as researched by Penka (2007), are found in WA with the lexical item *votf* corresponding to ‘no’. This is a free morpheme and since it acts as the ‘no’ of the language can unsurprisingly stand as the answer to a question. *votf-* can attach to *meg* ‘one,’ *-vok* ‘individual,’ *intf* ‘what’ and *deʃ* ‘place’ forming more complex negative strings:

- (246) *votf-intf desa*
 no-what see.PAST.1S
 ‘I didn’t see anything.’

As seen from the above example *votf-intf* does not require any licensing environment and is therefore not an NPI. The next example reveals that this string acts like a negative concord item since the addition of sentential negation does not negate the semantic interpretation of (246). The example in (248) shows that

any number of these negative indefinites can occur in a single phrase. For a detailed account and discussion of negative concord in Western Armenian see Khanjian (2010).

- (247) *votf-intf tʃi-desa*
 no-what NEG-see.PAST.1S
 ‘I didn’t see anything.’
- (248) *votf-meg-ə votf-meg-u-n votf-meg-pan-mə dəvav*
 no-one-DEF no-one-DAT-DEF no-meg-thing-INDEF gave.3S
 ‘No one gave anything to anyone.’

16.19.3 Negative Imperative

The lexical items *vajte/vajvor* are only used in imperative contexts. They are free morphemes that roughly translate to ‘don’t ever’.

- (249) *vajte/vajvor dun erta-s!*
 don’t.ever home go-2S.IMPR
 ‘Don’t you dare go home!’

Like the rest of the negative items discussed so far, *vajte/vajvor* can be uttered as an answer to a question. Sentential negation or any other licenser is not required, besides the imperative environment. Therefore *vajte/vajvor* are not NPIs. However unlike the negative indefinites formed with *votf*, sentential negation adds another negative element to the interpretation of the sentence as seen in (250):

- (250) *vajte/vajvor dun tʃ-erta-s!*
 don’t.ever home NEG-go-2S.IMPR
 ‘Don’t you dare not go home!’

The two negative imperatives *vajte* and *vajvor* can be used interchangeably, with a slight preference for *vajvor* for the majority of the people currently surveyed. Morphologically both of the lexical items contain the morpheme *vaj* which can be repeated three times, *vaj vaj vaj*, to form an interjection expressing concern. The second half of these morphemes *te/vor* are both complementizers corresponding to ‘that’ or ‘whether.’

16.20 Concluding Remarks

Western Armenian has:

- Monomorphemic *all*: *polor/amen*
- Monomorphemic *one*: *meg* (Historically the indefinite marker *mə* originated from the word for ‘one’ *mi* (Adjarian 1957))
- Monomorphemic proportional Det: ‘half’ *ges*

- Monomorphemic value judgement *many*: *jad*
- No monomorphemic *no*: The lexical item for ‘no’ *votf* contains the negative morpheme *tf*.
- The lexical item corresponding to ‘no’ *votf* is not monomorphemic. *tf* is the bound negation morpheme for predicates, as seen in (251).

(251) *tf-e, tf-erk-adz tf-ude-s χəntsor-ə!*
 NEG.be.3S, NEG-sing-PERF NEG-eat-2S.IMP apple-DEF!
 ‘NO, don’t eat the apple without having sung first!’

- Universal D-quantifiers: WA has at least five: *amen, polor, ləman, ampoχtf, jurakantfyr*
- A-quantifiers morphosyntactically more complex than D-quantifiers (Gil 1993): Generally true, most D-quantifiers are the building blocks of the A-quantifiers.
- D-Det selection: most determiners have no restrictions on number, animacy, or countability, but certain D-quantifiers only combine with count nouns.

16.20.1 Only

Two forms of ‘only’ are *mijag* and *mijajn*. Both of these forms contain what was historically the word ‘one’ *mi* (Adjarian 1957). *ajn* is the distal (3rd person) demonstrative. Therefore *mijain* might have been ‘that *one* over there.’

(252) *Aram-ə mijag ants-ən e-r vor dun kənats*
 Aram-DEF only individual-DEF be-PAST.3S that home go.PAST.3S
 ‘Aram was the only person who went home.’

(253) *mijajn Aram-ə dun kənats*
 only Aram-DEF home go.PAST.3S
 ‘Only Aram went home.’

(254) *hantes-i-n mijajn afagerd-ner jeg-adz e-ji-n*
 ceremony-DAT-DEF only student-PL come-PERF be-PAST-3P
 ‘Only students came to the ceremony.’

(255) *MIJAG/MIJAJN *Aram-ə dun kənats*
 only Aram-DEF home go.PAST.3S
 ‘Only Aram went home.’

(256) *mijag ARAM-ə dun kənats*
 only Aram-DEF home go.PAST.3S
 ‘The only Aram went home.’

From the examples above, it is clear that *mijag* and *mijajn* are not lexically identical. *mijajn* quantifies over the verb and therefore acts as an adverbial. As seen from *mijajn Aramə dun kənats* ‘Only Aram went home’, to get the desired

meaning, *mijajn* ‘only’ need to be quantified over the set of individuals who *dun kənat*s ‘went home’, giving *Aram*. However *mijag* acts as a determiner and requires an NP to quantify over as seen in *Aramə mijag antsən er vor dun kənat*s, where *mijag* ‘only’ quantifies over *antsən* ‘individual’, giving *Aram*.

It is also possible to add *mi-* ‘one’ to ‘only’ for emphasis as in (257).

- (257) *jes mi-mijajn dʒaf-i hamar ʒanut g-erta-m*
 1S one-only food-DAT for store IMPFV-go-1S
 ‘I only go to the store for food.’

A more complex quantifier can be formed for a negation of ‘only’, corresponding to the English ‘not only, but also’ as seen in (258).

- (258) *votʃ mijajn afagerd-ner-ə pajts/a(j)l najev usutsitʃ-ner-ə*
 no only student-PL-DEF but/also also teacher-PL-DEF
g-erke-n
 IMPF-sing-3P
 ‘Not only the students but also the teachers sing.’

16.21 Monomorphemic and Polymorphemic Quantifiers

16.21.1 Monomorphemic

Here is a list of the monomorphemic quantifiers discussed above: *hadʒax* ‘often’, *mift* ‘always’, *haziv/kərete* ‘just’, *kone* ‘at.least.’, *dʒift* ‘exactly’, *patsi* ‘except’, *fad* ‘many’, *kitʃ* ‘few’, *amen* ‘every’, *polor* ‘all’, *pavagan/pavarar* ‘enough’, *aveli* ‘more’, *bagas* ‘less’, *ankam* ‘times’, *kan* ‘than’, *tʃap* ‘amount’, *nəvaz* ‘negative’, *kani* ‘how many’, *vor* ‘which’, *intʃ* ‘what’, *ur* ‘where’, *jerp* ‘when’, *ov* ‘who’, *ləman* ‘whole’ *ampoxtʃ* ‘entire’, *ges* ‘half’, and the numerals 0–10, 20, 100, 1000, million, billion.

16.21.2 Polymorphemic

The majority of the quantifiers in Western Armenian are polymorphemic. Here is the list of morphologically complex quantifiers that are considered to be single phonological words:

Existential quantifiers:

- gark-mə* ‘certain’
kani-mə ‘a few’
kitʃ-mə ‘a small amount’
mas-mə ‘a portion’
ʒump-mə ‘a group’
tʃap-azants ‘excessive’

pazm-a-tiv ‘numerous’
 vor-kan ‘how much’
 The numerals 11–19, 30, 40, 50, 60, 70, 80, 90, 110... and all ordinal numerals,
 ex. das-erort ‘tenth’
 kar-ort ‘quarter’
 an-vertʃ ‘infinitely many’
 sahman-a-pag ‘just finitely many’
 vo-tʃ ‘no’
 nəvaz-a-kujn ‘at least’
 partsr-a-kujn ‘highest’
 jerp-emən ‘sometimes’
 gərgn-a-badig ‘twice’
 jerp-ek ‘never’

Universal quantifiers:

jur-a-kantʃyr ‘each’
 ov vor ‘whoever’
 jerp vor ‘whenever’
 ur vor ‘wherever’
 intʃ vor ‘whatever’
 intʃ-bes vor ‘however’
 vor-u(-n) vor ‘whomever’
 vor-meg-ə vor ‘whichever’

Proportional quantifiers:

medz-a-masn-utjun ‘majority’
 pokr-a-masn-utjun ‘minority’
 mi-jajn, mi-jag ‘only’
 hadʒaχ-agi-oren ‘frequently’
 hazv-a-teb-oren, hazv-a-kyd-oren ‘infrequently’
 kəlx-avor-a-bes ‘mostly’
 mas-amp ‘partly’
 əntanr-a-bes ‘usually’
 sovor-apar ‘generally’
 hazv-a-teb, hazv-a-kyd ‘rarely’

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Chapter 17

Wolof Quantifiers

Khady Tamba, Harold Torrence, and Malte Zimmermann

17.1 Introduction

Wolof is a member of the Atlantic sub-branch of the Niger-Congo family. Although classification schemes differ, there is consensus that the Atlantic group represents one of the earliest branchings within the Niger-Congo phylum (Greenberg 1963, Heine and Nurse 2000). Within Atlantic, Wolof is a member of the Senegambian group of the Northern branch. Pulaar and Sereer are Wolof's closest relatives (Sapir 1971, Doneaux 1978, Wilson 1989).

Wolof is spoken principally in Senegal, The Gambia, and Mauritania. There are also small numbers of speakers in Mali and Guinea-Bissau. The total number of native speakers is estimated to be approximately 3.2 million for all countries. However, the total number of speakers is approximately 7 million (Ethnologue) as Wolof is one of the national languages of Senegal and The Gambia and functions as a lingua franca. In no country however is it a language of formal education at any level (although there are materials for literacy programs). There are significant immigrant communities of speakers in France and the United States.

There are a number of Wolof dialects (Sauvageot 1965, Dialo 1983, Gamble 1991). The dialects mentioned in the literature oftentimes correspond to present or former political entities such as Waalo, Njamboor, Cajor, Jolof, Bawol, Presque'île (Cape Verde), Saalum, and Gambia. Sauvageot (1965) makes the observation that the differences between the dialects are principally in the phonetics and lexicon, but there are also differences in the morphology and syntax to a lesser extent. All dialects are mutually intelligible. In the present work, we focus on the variety spoken in Thiès, but bring in data from the St. Louis (Ndar) and Dakar dialects. There have been very few studies of specific dialects of Wolof (Sauvageot 1965 (Jolof), Njie 1982 (Gambia), and Halaoui 1984 (Mauritania)).

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The chapter is organized as follows. Section 17.2 presents background on Wolof clause and DP-structure including determiners, noun classes, relative clauses, and numerals. In Section 17.3, we turn to the expression of existential quantification in Wolof. Section 17.4 focuses on universal quantification. Value judgment quantifiers are discussed in Section 17.5. Section 17.6 covers proportional quantifiers. DPs modified with ‘only’ are introduced in Section 17.7, while Section 17.8 discusses Boolean compound quantifiers. Adverbial quantification is presented in Section 17.9. The Wolof existential construction is discussed in Section 17.10. Section 17.11 presents scopal interactions between universal quantifiers and indefinites. Section 17.12 discusses outstanding issues in the description and analysis of Wolof quantifiers.

17.2 Syntax

17.2.1 Clause Structure

This section presents the basic morpho-syntax of Wolof clauses and DPs. Wolof displays basic SVO word order and typologically mixed head-initial/head-final characteristics (e.g. post-nominal relative clauses, post-nominal definite determiners, and prepositions, but pre-nominal indefinite determiners, and Wolof is almost exclusively suffixing):

- (1) Ayda ak Jeynaba lekk-na-ñu ceeb
 ayda and jeynaba eat-FIN-3PL rice
- b-i ci kër g-i¹
 CL-DEF.PROX P house CL-DEF.PROX
 ‘Ayda and Jeynaba ate the rice at the house’

In (1), the verb *lekk* ‘eat’ and the preposition *ci* ‘at, on, in’ are both followed by their complements, *ceeb* ‘rice’ and *kër* ‘house’ respectively. However, the determiners *bi* and *gi* both follow their NP complements *ceeb* and *kër*. The articles, *bi* and *gi*, are distinct because *ceeb* and *kër* each belong to different noun classes (see Section 17.2.2.1 below). Verbs in Wolof show number agreement, but they do not agree with their subjects or objects in class. The *ñu* ‘3PL’ in (1) is simply ‘3PL’ and would occur with any 3PL subject in this construction. Because no single constituent in (1) is being focused, the verb surfaces in the left periphery of the clause after the topicalized subject and precedes the ‘neutral’ complementizer *-na* (which sits in FIN (Rizzi 1997, Zribi-Hertz and Diagne

¹ Abbreviations: CL: noun class marker, C_{REL}: relative clause complementizer, DEF.DIST: definite distal, DEF.PROX: definite proximal, FIN: head of FinP, IMPERF: imperfective auxiliary, INF: non-finite clause complementizer, NDEF: indefinite article, PART: partitive clitic, PL.AGR: plural agreement marker.

(2) **Table 17.1** Subset of Wolof clause types

Type	Example
<i>Na</i> Clause	a. Xale yi lekk-na-ñu gato bi child the.pl eat-FIN-3PL cake the 'The children ate the cake' (Entire clause is new information. No subconstituent is in focus.)
Negative	b. Xale yi lekk-u-ñu gato bi child the.pl eat-NEG-3PL cake the 'The children did not eat the cake' (No emphasis on anything. Negative of <i>na</i> -clause.)
Subject cleft	c. Xale yi (ñu) a lekk gato bi child the.pl 3PL COP eat cake the 'It's the children who ate the cake' (Subject is in focus.)
Non-subject cleft	f. Gato bi l-a xale yi lekk cake the XPL-COP child the.pl eat 'It's the cake that the children ate' (Non-Subject is in focus.)
Subjunctive	g. Bëgg-na-a ñu lekk-ko want-FIN-1sg 3PL eat-3SG 'I want them to eat it' (CP complement of predicates of desire, command, wish, etc.)
Adverbial	h. Tusuur ñu lekk-ko always 3PL eat-3SG 'They always eat it' (CP/TPs introduced by certain adverbs)
Optative	i. Xale yi na-ñu lekk gato bi child the.pl OPT-3PL eat cake the 'The children, may they eat the cake!' (Wish or desire of speaker)
Negative optative	j. Xale yi b-u ñu lekk gato bi child the.pl COMP-NEG-3PL eat cake the 'The children, may they not eat the cake!' (Wish or desire of speaker)
Presentative	m. Xale y-àngi lekk gato bi child CL-PROG eat cake the 'The children are eating the cake' (Ongoing actions or current states)
Predicate focus cleft	p. Xale yi da-ñu lekk gato bi child the.pl do-3PL eat cake the 'The children did eat the cake' 'Eat the cake is what the children did' (Focus on predicate)

2002, Koopman 2006)). Wolof clausal morpho-syntax is structured around a large number of clause types, some of which are given in Table 17.1²:

The clause types are distinguished by a number of structural factors, such as, the form of subject marker, the position of subject marking and the form and position of negation. For example, the verb precedes negation in (2b), but follows negation in (2j). Similarly, the subject marker (*ñu*) precedes the main verb in (2c), but follows main V in (2a). Table 17.1 also shows that Wolof morpho-syntactically distinguishes three kinds of focus clauses (Njie 1982, Robert 1991, Kihm 1999, Torrence 2005): subject focus, non-subject focus, and predicate focus. Wolof does not have predicate clefting. Instead, the predicate focus construction involves a grammaticalized form of the verb *def* ‘do, make’.³

17.2.2 DP Structure

In what follows, we first lay out the elements found in DPs like (3) below⁴:

- (3) juróóm i xaj [y-u réy] y-ii
 five PL.AGR dog CL-C_{REL} big CL-this
 ‘these five big dogs’

The linear order of the items in (3) can be summarized as:

- (4) Num > Agr > N > Adj > Det/Dem

In our description, we begin with the noun itself and move on to the other items inside of DPs.

17.2.2.1 Nouns and Noun Class

Like the other Atlantic languages (Migeod 1911, Greenberg 1963, Sapir 1971, Wilson 1989), Wolof is a noun class language with an intricate system of noun class (NC) agreement. Nouns do not occur with synchronic noun class prefixes or suffixes. Instead, noun class membership is expressed on other elements in DP, such as articles and demonstratives. Table 17.2 below shows different complex forms of the definite article. Wolof has approximately 15 noun classes (varying according to dialect)⁵: 8 singular, 2 plural, 2 locative, 1 diminutive, 1 manner, and 1 collective human class. Throughout, we refer to the different

² See Zribi-Hertz and Diagne (2002) and Torrence (2005) for a more complete list of clause types.

³ See Church (1981).

⁴ See Seck (1997) for additional overview of Wolof nouns and determiners.

⁵ The Dakar dialect, for example, essentially uses the *bi*, *yi*, *ki*, and *ñi* classes for the most part.

noun classes by the form of the proximal definite article. The plural class of most nouns is the *yi*-class. A small group of human nouns take plurals in the *ñi*-class:

(5) **Table 17.2** Wolof noun classes

Noun	Definite article	Translation	Class name	Number	
yàmbaa	j-i	the marijuana	' <i>ji</i> -class'	Singular	
nit	k-i	the person	' <i>ki</i> -class'		
xaj	b-i	the dog	' <i>bi</i> -class'		
mbagg	m-i	the shoulder	' <i>mi</i> -class'		
weñ	w-i	the metal	' <i>wi</i> -class'		
suuf	s-i	the ground	' <i>si</i> -class'		
ndap	l-i	the pot	' <i>li</i> -class'		
góór	g-i	the man	' <i>gi</i> -class'		
xaj	y-i	the dogs	' <i>yi</i> -class'		Plural
góór	ñ-i	the men	' <i>ñi</i> -class'		

Notice that the noun *góór* 'man' is in the *gi*-class in the singular, but in the *ñi*-class in the plural. Similarly, the noun *gaal* 'boat', is in the *gi*-class in the singular, but in the *yi*-class in the plural.

There are three 'defective' noun classes which do not contain any overt nouns. These classes nonetheless contain demonstratives, articles, and wh-words. The defective classes consist of the two locative classes and a manner class:

(6) **Table 17.3** Defective noun classes

'this X'	wh-word	Class name	Semantics
n-ii 'this way'	n-an 'how?'	' <i>ni</i> -class'	manner means
f-ii 'here'	f-an 'where?'	' <i>fi</i> -class'	location
c-ii 'in/at/on here'	%c-an 'in/at where?' ⁶	' <i>ci</i> -class'	location

Noun class membership is determined by a number of factors. Sy (2003) identifies phonological, semantic and morphological criteria that condition noun classification in Wolof and proposes an Optimality theoretic analysis to account for it. Phonologically, it has been noted for example that many nouns that begin with [w] are in the *wi*-class, many nouns in the *mi*-class have an initial [m], etc. (Thiam 1987, McLaughlin 1992, 1997). That lexical semantics plays a role can be seen from the fact that all trees are in the *gi*-class, while all fruits are in the *bi*-class (*tandarma gi* 'the date palm', *tandarma bi* 'the date (fruit)'). In Section 17.4.1.2, we will encounter more evidence showing that at least some NC-markers carry a certain amount of semantic load.

⁶ The '%' symbol indicates that not all speakers share this judgment.

The role of morphology in noun classification can be seen when certain derivational suffixes are present:

- (7) a. dox ‘walk (V)’ a’. dox-in **wi** ‘the way of walking’
 b. fecc ‘dance (V)’ b’. fecc-in **wi** ‘the way of dancing’
 c. bëgg ‘want (V)’ c’. bëgg-in **wi** ‘the way of desiring’
 d. bëgg ‘want (V)’ d’. mbëgg-éél **gi** ‘the desire’

Deverbal manner nouns with the *-in* suffix are invariably in the *wi*-class (7a–c), while deverbal nouns with the *-eel* suffix are in the *gi*-class (7d).

For some nouns, some speakers may put them in more than one noun class⁷:

- (8) a. góór **y-ii** ‘these men’ *yi*-class plural
 b. góór **ñ-ii** ‘these men’ *ñi*-class plural

The semantic basis of the noun class system can also be seen from the presence of ‘default’ noun classes. The singular human noun class is the *ki*-class, while the default plural human noun class is the *ñi*-class. These are default classes in the sense that if one wants to ask about a singular human as opposed to a plural human, different forms of the equivalent of *who* are used:

- (9) a. **k-an** ‘who (SG)’
 b. **ñ-an** ‘who (PL)’

Similarly, the default singular *thing* classes are the *li*-class and the *bi*-class, whereas the default plural *thing* class is the *yi*-class. This distinction can be seen in the words for *what*:

- (10) a. **l-an** ‘what (SG)’
 b. **y-an** ‘what (PL)’

17.2.2.2 Determiners

The determiner system of Wolof is built around three determiner vowels and a numeral-like expression. There are no simple equivalents to English expressions like *the* or *a*. Instead, Wolof has two definite articles and two indefinite articles, all agreeing in class with the NP. However, indefinite and definite NPs differ in word order, see below.

⁷ These two forms are not equivalent, however. This can be seen when the demonstrative is focused (and prenominal):

- (i) **y-ii** góór ‘THESE men’
 (ii) ***ñ-ii** góór

(ii) shows that the *yi*-class demonstrative can precede the noun, but the *ñi*-class demonstrative cannot.

- | | | | | | | |
|------|---------|------------------|-------------|-------------------------|-------------------|-------------|
| (11) | a. | xaj | b-i | b. | xaj | b-a |
| | | dog | CL-DEF.PROX | | dog | CL-DEF.DIST |
| | | ‘the dog (here)’ | | | ‘the dog (there)’ | |
| | c. | u/a-b | xaj | d. | b-enn | xaj |
| | NDEF-CL | dog | | CL-some | dog | |
| | | ‘a dog’ | | ‘a/some dog’, ‘one dog’ | | |

The first definite article, *cl-i*, encodes proximity in space, time, or conversation (roughly, ‘the x mentioned recently’), as in (11a). The second definite article, *cl-a*, encodes distance in space, time, or conversation (roughly, ‘the x mentioned a while ago’), as in (11b). One indefinite article, *u/a-cl*, has two variants. In the first variant, the determiner vowel is *u-*, while in the other form, the determiner vowel is *a-*. We do not know of any interpretive difference between the form with *u-* and that with *a-*. However, individual speakers may have preferences for one form or the other. The second indefinite article, *cl-enn*, is numeral-like (see Section 17.2.2.4), as indicated in the second translation in (11d). However, it also has plural forms, which means that it is not simply the numeral ‘1’:

- | | | | |
|------|----|--------------|------|
| (12) | a. | y-enn | xaj |
| | | CL.PL-some | dog |
| | | ‘some dogs’ | |
| | b. | ñ-enn | góór |
| | | CL.PL-some | man |
| | | ‘some men’ | |

The precise relationship between the two indefinite articles is unclear, as they appear to surface simultaneously:

- | | | | |
|------|--------------|------------|--------------------|
| (13) | g-enn | u-g | garab ⁸ |
| | CL-some | NDEF-CL | tree |
| | ‘a tree’ | | |

As for the differences in word order, the definite articles obligatorily follow NP, while the indefinite articles obligatorily precede NP.⁹ The orders are summarized in Table 17.4:

⁸ See (52) for further intricacies of multiple determiners.

⁹ Bare NPs are also indefinite and are typically interpreted as non-specific indefinites or generics; see Sections 17.3.1.1, 17.3.1.2 and 17.3.1.3 for more discussion.

- | | | | | |
|------|--|------------|------|-------|
| (i) | Xaj | d-u | macc | màngo |
| | dog | IMPERF-NEG | suck | mango |
| | ‘Dogs don’t suck mangos’ | | | |
| (ii) | Gis-na-a | xaj | | |
| | see-FIN-1SG | dog | | |
| | ‘I saw a dog (i.e. some dog or other)’ | | | |

(16) **Table 17.5** Wolof demonstratives

DET	Form	Example	
-i	NP CL-ii	xaj b-ii	
	NP CL-ile	'this dog'	
	NP CL-oo-CL-ii	xaj b-oo-b-ii	
	NP CL-oo-CL-ile	'this dog' 'this aforementioned dog' 'this recently aforementioned dog'	
-a	NP CL-ee	xaj b-ee	
	NP CL-ale	dog CL-that 'that dog'	
	NP CL-oo-CL-a	xaj b-oo-b-a	
		'that dog' 'that long ago aforementioned dog'	
	NP CL-oo-CL-ee	xaj b-oo-b-ee	
	NP CL-oo-CL-ale	'that long ago aforementioned dog'	
	-u	NP CL-oo-CL-u	xaj b-oo-b-u
		NP CL-oo-ule	'aforementioned dog'

- (17) a. xaj b-ii N dem
 dog CL-this
 'this dog'
- b. b-ii xaj DEM N
 CL-this dog
 'THIS dog'

One way of analyzing the word order differences would consist in assuming N(P)-movement into the left DP-periphery in (17a) (Longobardi 1994, Aboh 2004), which is blocked whenever the demonstrative itself is in focus (17b):

- (18) [_{DP} xaj]₁ [b-ii [_{NP} t₁]]

Wolof also possesses a general wh-determiner expression CL-*an* 'which', which agrees in class with an overt noun restriction if one is present. The wh-determiner can either precede or follow the NP (with no known interpretive difference):

- (19) a. góór g-an
 man CL-*wh*
 'which man'
- b. g-an góór
 CL-*wh* man
 'which man'

If there is no overt NP restriction, then the class marker is drawn from one of the default classes (as in (9a–b)):

- (20) a. **f**-an ‘where’ (*f*-class = default locative class)
 b. **n**-an ‘how’ (*n*-class = default manner class)

17.2.2.3 Relative Clauses and Adjectives

There are three basic types of relative clauses in Wolof (Torrence 2005):

- (21) a. *u*-Relative Clause
 (u/a-b) tééré b-u Abdu jënd-óón
 NDEF-CL book CL-C_{Rel} abdu buy-PAST
 ‘a book that Abdu bought’
- b. *i*-Relative Clause
 tééré b-i Abdu jënd-óón (b-i)
 book CL-C_{Rel} abdu buy-PAST CL-DEF.PROX
 ‘the book here that Abdu bought’
- c. *a*-Relative Clause
 tééré b-a Abdu jënd-óón (b-a)
 book CL-C_{Rel} abdu buy-PAST CL-DEF.DIST
 ‘the book there that Abdu bought’

We refer to the underlined strings in (21) as the ‘relative markers’, which are analyzed in Torrence (2005) as complementizers that agree in class with the relativized head noun. The presence of the different relative markers *CL-i*, *CL-u*, and *CL-a* corresponds to different interpretations of the head noun. Notice that the three vowels of the relative markers are identical to the by-now-familiar determiner vowels *u/i/a*. As the translations indicate, when the relative marker is *CL-u*, the head noun is interpreted as indefinite. When the relative marker is *CL-i*, the head noun is interpreted as definite and proximal. Similarly, when the relative marker is *CL-a*, the head noun is interpreted as definite and distal. These are the same interpretations as with ordinary NPs when they occur with these determiner vowels. The relative markers cannot be dropped, and they are followed by the relative clause material (e.g. subject, verb, and tense). Notice, too, that both the definite and indefinite articles are optional with relative clauses. When present, they surface on the far left (indefinite) and right (definite) edge of the entire DP. Templatically, relative clauses have the following form:

- (22) a. (u/a-CL) NP CL-*u* S V O *u*-Relative
 b. NP CL-*i* S V O (CL-*i*) *i*-Relative
 c. NP CL-*a* S V O (CL-*a*) *a*-Relative

The translational equivalents of attributive adjectives surface as relative clause structures in Wolof, with the adjectives being inflected like verbs (Church 1981, McLaughlin 2004). That attributive adjective modification involves relativization in Wolof can be seen from the occurrence of all three of the relative markers with attributive adjectives¹²:

- (23) a. (a/u-g) garab g-u wert u-Rel Marker
 NDEF-CL tree CL-C_{Rel} green
 ‘a green tree’
- b. garab g-i wert (g-i) i-Rel Marker
 tree CL-C_{Rel} green CL-DEF.PROX
 ‘the GREEN tree’
- c. garab g-a wert-*(oon) (g-a) a-Rel Marker
 tree CL-C_{Rel} green-PAST CL-DEF.DIST
 ‘the formerly green tree’

Relative clauses are germane to the discussion of Wolof quantification because a number of quantificational concepts, such as the value judgment quantifier corresponding to *many*, are expressed in the form of relative clauses¹³:

- (24) góór y-u bēri
 man CL.PL-C_{Rel} many
 ‘many men’

17.2.2.4 Numerals

Unlike in a wide range of languages including German, English, and Hausa (Hoeksema 1983, Higginbotham 1987, Zimmermann 2008), in which numerals behave like attributive adjectives in terms of word order, agreement, and other morpho-syntactic properties, numerals in Wolof are clearly not adjectival in nature: they occur without any signs of relativization, and unlike attributive (adjectival) relative clauses, numerals precede the noun (the construction corresponding to English modified numerals like *more than ten* is still different structurally, see Section 17.6). The different structural positions of numerals and adjectival relative clauses are illustrated again in (25d):

- (25) a. b-enn xale
 CL-some/one child
 ‘one child’

¹² In fact, there are a number of extremely interesting differences between ordinary relative clauses and adjectival relative clauses. For example, as indicated by the translations, changing the relative marker with adjectival relative clauses can trigger an emphatic reading, as in (23b). We leave these issues for future research as there is no systematic description of these effects. (See Torrence (2005) for some discussion.)

¹³ See Section 17.5 on value judgment quantifiers.

- b. ñett i xale
3 PL.AGR child
'three children'
- c. ñeent i xale
four PL.AGR child
'four children'
- d. [Numeral] [Adjectival RC]
juróóm ñett i xale y-u bég
five three PL.AGR child CL-C_{Rel} happy
'eight happy children'

As (25a–c) show, the form of the head noun does not change in the presence of a (plural) numeral. Instead, numerals higher than '1' are followed by an *i* morpheme when they occur with a noun. We analyze this *i* as a marker of plural agreement because it appears with non-singular nouns and the *i* itself is the vowel equivalent of *y-*, the default plural noun class marker in the language. Note that not all speakers use the plural agreement marker *i*. For these speakers, (25c) would be *ñeent xale* 'four children'.

Higher numerals pattern similarly, with the noun following the largest multiple of 10:

- (26) a. ñaar fukk ak juróóm
two ten and five
'25'
- b. ñaar fukk i góór ak juróóm
two ten PL.AGR man and five
'twenty five men'
- c. téémээр i xale
hundred PL.AGR child
'one hundred children'
- d. téémээр i xale ak ñaar fukk ak juróóm
hundred PL.AGR child and two ten and five
'one hundred and twenty five children'

In addition to the plural agreement maker, plural numeral DPs like (25b–c) trigger plural agreement on verbs (*-ñu*) and plural noun class agreement on relative clause complementizers (*y-u*), and take plural articles:

- (27) a. [A-y juróóm i xale y-u njool]
NDEF-CL.PL five PL.AGR child CL.PL-C_{Rel} tall
jàng-na-ñu tééré b-i
read-FIN-3PL book CL-DEF.PROX
'Five tall children read the book'

- b. Juróóm i xale y-u njool y-i
 five PL.AGR child CL.PL-C_{Rel} tall CL.PL-DEF
 jàng-na-ñu tééré b-i
 read-FIN-3PL book CL-DEF.PROX
 ‘The five tall children read the book’

The plural agreement is also found with a subclass of nominal dependents, like *other* in the plural:

- (28) a. w-eneen wundu
 CL-other cat
 ‘another cat’
 b. y-eneen (i) wundu
 CL-other PL.AGR cat
 ‘other cats’

Finally, when a definite determiner is added to an NP modified by numerals and (relative clause) adjective, it must occur after the adjective to yield a structure like the following:

- (29) a. %ñett xale y-u rafet y-i
 three child CL.PL-C_{Rel} beautiful CL.PL-DEF.PROX
 ‘the three beautiful children’
 b. [DP ñett xale y-u rafet]_{NP} y-i t_{NP}¹⁴
 three child CL.PL-C_{Rel} beautiful CL.PL-DEF.PROX

In (29a), the determiner is added only after all other modifiers have been attached to the head noun. Again, the resulting linear order can be accounted for by assuming movement of the entire modified NP to the left DP-edge as suggested in (18) in Section 17.2.2.2, and shown in (29b). Data like (29a) are telling for they suggest that what moves to the left edge of DP in Wolof is not just a syntactic N-head, but always a full NP, even in simpler cases. That a full NP raises is also supported by the existence of stranding in relative clauses. Wolof, like most other Niger-Congo languages, possesses a large class of idiom-like adverbs, so-called ‘ideophones’ (Welmers 1973, Diallo 1985). Ideophones are idiom-like in the sense that they typically only occur with literally a single specific predicate or one semantic class of predicate. (This makes ideophones similar to modifiers like *pitch* in the English *pitch black*.) Typically ideophones indicate intensity, manner, or degree.

¹⁴ Recall that not all speakers use the plural agreement marker *i*.

- (30) a. Daf-a **weex**/*xees/*ñuul/*diis **tàll**
do-COP white/light/black/heavy IDEO
‘It is very white’
- b. Daf-a **diis**/*réy/*gàtt **gann**
do-COP heavy/big/small IDEO
‘It is very heavy’

(30a) is intended to show that the ideophone *tàll* only occurs with the predicate *weex* ‘white’. Semantically similar predicates like *xees* ‘light’ cannot occur with *tàll*. Similarly, (30b) shows that the ideophone *gann* only occurs with the predicate *diis* ‘heavy’. It is therefore significant that the ideophone can occur to the right of a definite determiner in a relative clause construction:

- (31) [ñett i [xaj [y-u **diis**]]] y-i **gann**
three PL.AGR dog CL.PL-C_{Rel} heavy CL.PL-DEF.PROX IDEO
‘three very heavy dogs’

Torrence (2005) argues that ideophones like *gann* select for the predicates that they occur with. Under that analysis, cases like (31) are derived by movement of a large piece of syntactic structure containing a full NP into the left periphery of the DP, stranding the ideophone lower down.

17.3 Existential Quantifiers

17.3.1 Indefinites

17.3.1.1 Introduction

We showed in Section 17.2 two ways of expressing indefinite DPs in Wolof, namely, with either the *u/a-CL* or the *CL-enn*, as in (32a). In fact, there is a third type of indefinite which involves zero-marking, as shown in (32b)¹⁵:

- (32) a. Xadi gis-na **a-b/b-enn** sàcc
Xadi see-FIN NDEF-CL/CL- some thief
‘Xadi saw a thief’, ‘Xadi saw a certain thief’
- b. Xadi gis-na ∅ sàcc
Xadi see-FIN DET thief
‘Xadi saw a thief’, ‘Xadi saw a certain thief’

¹⁵ We discuss cases like (32b) in terms of a null determiner for the purpose of symmetry with the overt determiners. However, these could also simply involve bare NPs. We leave this as an open question here.

As indicated by the translations for (32a–b), all three indefinite forms allow for a specific ('a certain') and a non-specific interpretation, at least in principle. However, as we show in this section, in most cases, these forms are not ambiguous and each indefinite is associated with a particular interpretation. We noted previously that noun class membership is not synchronically indicated on nouns themselves. Zero-determiner DPs cannot be interpreted as plural:

- (33) a. Awa jàpp-na sàcc
 Awa catch-FIN thief
 'Awa caught a thief'
 *'Awa caught some thieves'
- b. Awa jàpp-na a-y sàcc
 Awa catch-FIN NDEF-CL.PL thief
 'Awa caught some thieves'

If the zero-determiner could occur with plural NPs, then we might expect that (33a) should be ambiguous between a singular or plural reading of NP, contrary to fact.

The first distributional difference between the determiners can be seen in the kinds of nouns that they occur with. Specifically, the overt indefinite determiners do not occur with mass nouns:

- (34) Jënd-na-a Ø/*a-b/*b-enn ceeb
 buy-FIN-1SG DET/NDEF-CL/CL-some rice
 'I bought rice'

The different behavior of Wolof mass nouns, which cannot occur with overt indefinite determiners, and plural count nouns, which cannot occur with the zero indefinite determiner (33a), is interesting from a cross-linguistic perspective since these two NP-types pattern alike in many languages of the world (e.g. both come with zero-determiners in English and German).

The zero-marked and the two overtly marked indefinites can all occur in a number of environments. (32a–b) involve a perfective episodic context. However, all three types of indefinites can also occur in habitual contexts:

- (35) a. Saa y-u fa y jaar guddi,
 time CL-C_{Rel} there IMPERF pass night
 dey mbëkkaale Ø nag...¹⁶
 IMPERF collide DET cow
 'Every time that it passes during the night it hits a cow.'

¹⁶ These examples sentences are based on those from Chung and Ladusaw (2004, #31).

- b. Saa y-u fa y jaar guddi,
 time CL-C_{Rel} there IMPERF pass night
 dey mbëkkaale **b-enn** nag. . .
 IMPERF collide CL-SOME cow
 ‘Every time it passes during the night it hits a cow.’
- c. Saa y-u fa y jaar guddi,
 time CL-C_{Rel} there IMPERF pass night
 dey mbëkkaale **a-b** nag. . .
 IMPERF collide NDEF-CL COW
 ‘Every time it passes during the night it hits a cow.’

17.3.1.2 Distributional and Interpretive Differences: Episodic Sentences

While the environments for zero-marked and overtly-marked indefinites do overlap to a significant extent, the three types show a number of differences in their overall distribution.

First, there is a subject/non-subject asymmetry for indefinites. Specifically, while zero-determiner indefinites can appear as the object in an episodic context like the perfective (32b), they cannot appear as subjects in this context (36b). In contrast, the overtly marked indefinites can appear as subjects in episodic contexts:

- (36) a. **A-b/b-enn** xale jàng-na tééré b-i
 NDEF-CL/CL-some child steal-FIN book CL-DEF.PROX
 ‘A child read the book’
- b. *∅ xale jàng-na tééré b-i
 DET child read-FIN book CL-DEF.PROX
 Intended: ‘A child read the book’

This restriction on zero-determiner indefinites extends to conditional contexts:

- (37) a. Su sama **a-m** mbokk gañ-u-ee,
 if my NDEF-CL relative hurt-REFL-PERF
 di-na-a donn-u kër
 IMPERF-FIN-1SG inherit-REFL house
 ‘If some relative or other of mine dies,
 I will inherit a house’

- b. Su sama **m-enn** mbokk gañ-u-ee,
 if my CL-some relative hurt-REFL-PERF
 di-na-a donn-u kër
 IMPERF-FIN-1SG inherit-REFL house
 ‘If some / a (certain) relative of mine dies,
 I will inherit a house’
- c. *Su sama Ø mbokk gañ-u-ee,
 if my DET relative hurt-REFL-PERF
 di na-a donn-u kër
 IMPERF-FIN-1SG inherit-REFL house
 ‘If some/a (certain) relative of mine dies,
 I will inherit a house’

There is a scopal difference between (37a) and (37b). In (37a), the indefinite scopes under the conditional obligatorily (i.e. ‘if some relative or other of mine dies. . .’). That is, the NDEF-CL is interpreted as a non-specific indefinite in this context. (37b) on the other hand is ambiguous. The indefinite can take scope under the conditional or take wide scope with respect to the conditional (i.e. ‘if a particular relative of mine dies. . .’). In other words, the CL-some can be interpreted as a specific or non-specific indefinite in this context.

However, a modified zero-determiner indefinite subject is fine:

- (38) **A-b/b-enn/Ø** xale [b-u njool] dem-na
 NDEF-CL/CL- some/DET child CL-C_{Rel} tall left-FIN
 ‘A tall child left’

A different pattern arises in negative episodic contexts. All three indefinite types are licensed as objects, but with different meanings:

- (39) a. Awa dóór-ul **a-b** xale
 awa hit-NEG NDEF-CL child
 ‘Awa did not hit any child’
 ‘Awa did not hit a certain child’
- b. Awa dóór-ul **b-enn** xale
 awa hit-NEG CL-some child
 ‘Awa did not hit a single child’
- c. Awa dóór-ul Ø xale
 awa hit-NEG DET child
 ‘Awa did not hit any child(ren)’

The NDEF-CL in (39a) in object position can scope over negation (yielding the specific indefinite reading) or under negation (which corresponds to the non-specific indefinite interpretation). The translations of (39b) and (39c) indicate that both the CL-enn and Ø marked indefinites are obligatorily interpreted in the

scope of negation. Interestingly, the scopal behaviour of the *CL-some* form and the *NDEF-CL* indefinite under negation is the exact opposite of that found with indefinites in conditional clauses, cf. (37a–b).

For subjects in negative episodic contexts, the overtly marked indefinites are fine, but they have distinct interpretations. In (40a) *NDEF-CL* scopes above negation and is interpreted as a specific indefinite. In contrast, in (40b) *CL-enn* must scope under negation and is interpreted as non-specific (and emphatic). As before, the zero-determiner indefinite is ungrammatical:

- (40) a. **A-b** xale jàng-ul tééré b-i
 NDEF-CL child read-NEG book CL-DEF.PROX
 ‘A (certain) child did not read the book’
- b. **B-enn** xale jàng-ul tééré b-i
 CL-some child read-NEG book CL-DEF.PROX
 ‘Not a single child read the book’
- c. *∅ xale jàng-ul tééré b-i
 DET child read-NEG book CL-DEF.PROX

Like the *CL-enn* form, numeral indefinites in both subject and object position obligatorily scope under negation:

- (41) a. $\neg > 3, *3 > \neg$
 Jàng-u-ma ñëtt i tééré
 read-NEG-1sg three PL.AGR book
 ‘I did not read three books’
- b. $\neg > 3, *3 > \neg$
 Ñëtt i xale jàng-u-ñu tééré b-i
 three PL.AGR child read-NEG-3PL book CL-DEF.PROX
 ‘It is not the case that three children read the book’

17.3.1.3 Distributional and Interpretive Differences: Generic Sentences

In non-episodic contexts, such as generic sentences, the zero-marked indefinites can function as subjects, while *NDEF-CL* is ungrammatical and the *CL-enn* yields an emphatic future episodic reading:

- (42) a. ∅ xaj d-u lekk màngo
 DET dog IMPERF-NEG eat mango
 ‘Dogs don’t eat mangos’
- b. ?**B-enn** xaj d-u lekk màngo
 CL-some dog IMPERF-NEG eat mango
 ‘Not a single dog will eat a mango’
 *‘A dog does not eat mangos’

- c. ***A-b** xaj d-u lekk màngo
 NDEF-CL dog IMPERF-NEG eat mango

Just as in (40b), the subject *CL-enn* in (42b) must scope under negation and has a non-specific indefinite interpretation. The same difference obtains in affirmative generic clauses. A preverbal zero-marked DP is fine (43a). However (43b) and (43c) show that both of the overtly marked DP are ungrammatical:

- (43) a. Xaj di-na lekk yàpp
 dog IMPERF-FIN eat meat
 ‘Dogs eat meat’
 *‘A dog eats/will eat meat’
- b. ??*A-b xaj di-na lekk yàpp
 NDEF-CL dog IMPERF-FIN eat meat
 *‘A dog will eat meat’
 ??‘A dog eats meat’
- c. *B-enn xaj di-na lekk yàpp
 CL-one dog IMPERF-FIN eat meat

17.3.1.4 Summary

The data discussed in this section are summarized in Table 17.6 below.

(44) **Table 17.6** Indefinite DPs in Wolof

	∅-DET N	NDEF-CL N	CL-some N
Count noun	✓	✓	✓
Mass noun	✓	*	*
Episodic object	✓	✓	✓
Episodic subject	*	✓	✓
Conditional	*	✓	✓
Generic Subj/Obj	✓	*	*

The data show that at least the zero-marked indefinites do not simply contain a dropped indefinite article. If this were so, one might expect the zero-marked form to pattern like *NDEF-CL* or *CL-some*, contrary to fact. In the range of environments reported in Table 17.6, the *NDEF-CL* and *CL-some* indefinites pattern identically. However, we show in Section 17.8, on existentials, that these two types of indefinites do not pattern the same in all environments. This suggests that these two forms are not just variants of each other.

17.3.2 Negative Indefinites and Negative Polarity Items

There are no dedicated negative indefinite pronominal paradigms in Wolof, such as the English *nobody/nowhere/nothing/etc.* series or negative determiners like *no*, as in *no book*. Instead, negative indefinites are expressed using indefinite articles or NPIs in the presence of sentential negation. Negative indefinite pronominals are formed using the by-now-familiar *CL-enn*:

- (45) a. **K-enn** jàng-ul tééré b-i ¬ > ∃, *∃ > ¬
 CL-some read-NEG book CL-DEF.PROX
 ‘Nobody read the book’
 *‘Somebody did not read the book’
- b. **Gis-u-ma** **k-enn**
 see-NEG-1SG CL-some
 ‘I did not see anyone’
- c. **Dem-u-ñu** **f-enn**
 go-NEG-3PL CL-some
 ‘They did not go anywhere’
- d. **Lekk-o-o** **l-enn**
 eat-NEG-2SG CL-some
 ‘You did not eat anything’

The *CL-enn* forms in (45) differ only in the initial noun class consonant. Recall that the *ki*-class is the default singular human noun class. Therefore, in (45a) and (45b), the noun-less forms are interpreted as *anybody, nobody*. Similar considerations apply to (45c) and (45d) given that the *fi*-class is the default locative class and the *li*-class is the default singular *thing* class. As indicated in (45a), even when a subject, the *CL-enn* form obligatorily scopes under negation. Thus, it cannot be interpreted with wide scope for the existential. To get the wide scope reading for the indefinite, an existential construction is used with the indefinite modified by a relative clause (underlined in (46)):

- (46) Am-na **k-enn** [k-u jàng-ul tééré b-i]
 have-FIN CL-some CL-C_{Rel} read-NEG book CL-DEF.PROX
 ‘Somebody did not read the book’
 (Literally, ‘There is somebody who did not read the book’)

The *CL-enn* forms can be used in affirmative clauses:

- (47) a. **K-enn** jàng-na t ééré b-i
 CL-some read-FIN book CL-DEF.PROX
 ‘Someone read the book’
- b. **Dem-na-a** **f-enn**
 go-FIN-1SG CL-some
 ‘I went somewhere’

17.3.3 Numerals and Partitive DPs

There are three partitive constructions in Wolof. These involve a complex DP, a preposition *ci*, or a partitive clitic pronoun, *ci*.

The plural partitive construction involves a complex plural DP with two determiners:

- (52) a. **Y-enn** **góór** **y-i** **jàng-na-ñu-ko**
 CL.PL-some man CL.PL-DEF.PROX read-fin-3PL-3SG_{OBJ}
 ‘Some of the men read it’
- b. **Jàng-na-a** **y-enn** **tééré** **y-i**
 read-fin-1SG CL.PL-some book CL.PL-DEF.PROX
 ‘I read some of the books’

The examples in (52) suggest that the CL-*enn* can take either zero-marked DPs (or bare NPs) or definite DPs as its argument:

- (53) [y-enn [DP **góór y-i**]] (= (52a))
 CL.PL-some man CL.PL-DEF.PROX
 ‘some of the men’

The existence of the plural partitive construction is surprising because the DP contains both an indefinite (*y-enn*) and a definite (*y-i*) determiner. The plural partitive construction, as the name implies, is only available for plural DPs:

- (54) ***Jàng-na-a** **b-enn** **tééré** **b-i**
 read-FIN-1SG CL-some book CL-DEF.PROX
 Intended: ‘I read some of the book’

The *NDEF-CL* indefinite article does not occur in this partitive construction:

- (55) ***a-y** **góór** **y-i**
 NDEF-CL.PL man CL.PL-DEF.PROX
 Intended: ‘some of the men’

The second partitive construction involves the preposition *ci*. This can be seen by first looking further at numeral constructions:

- (56) a. **ñeent** ‘four’
- b. **ñeent-*(i)** **góór** Numeral-*i* NP DET
 four-PL.AGR man
 ‘four men’

The NP can be raised out of neither the *i-* nor the *ci-* forms (59a), but the *ci + NP* string can be fronted, as in (59b):

- (59) a. *Xale y-i l-a-a gis **ñeent-i/ci**
 child CL.PL-DEF.PROX XPL-COP-1SG see four-PL.AGR/P
 Intended: ‘It’s the children that I saw four of’
- b. **Ci xale y-i** l-a-a gis ñeent-(*i)
 P child CL.PL-DEF.PROX XPL-COP-1SG see four-PL.AGR
 ‘It’s of the children that I saw four’

This pattern suggests that the *ci + NP* string forms a constituent to the exclusion of the numeral.

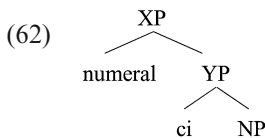
The *wh*-expression corresponding to the numeral is *ñaaata* ‘how many, how much’, which does not show class agreement with the following bare noun, although it obligatorily triggers plural subject agreement:

- (60) Ñaaata (ci/*i) xale ño-o
 how.many P/PL.AGR child 3PL-COP
 dajaloo ca lekkool b-a
 gather P school CL-DEF.DIST
 ‘How many children gathered at the school?’

Note that while the *ci-* form is compatible with *Wh*, the *i-* form is not. The noun and *ñaaata* can be split when the P *ci* is present, as shown in (61a)

- (61) a. Ñaaata l-a Isaa jënd *(ci) jën
 how.many XPL-COP isaa buy P fish
 ‘How many fish did Isaa buy?’
- b. Ñaaata (ci) jën l-a Isaa jënd
 how.many P fish XPL-COP isaa buy
 ‘How many fish did Isaa buy?’

The *wh* can only be extracted from the *ci*-form. This is consistent with *ñaaata* and the *ci + NP* string forming an underlying constituent (to the exclusion of the numeral) out of which the *wh*-expression is extracted, roughly:



The analysis in (62) is supported by the fact that the *ci*+ *NP* string can be pronominalized as the clitic *ci*, leaving only the numeral:

- (63) Di-na-a-ci dóór ñeent(*)¹⁸
 IMPERF-FIN-1SG -PART hit four-PL.AGR
 ‘I will hit four of them’

Further support for a structure like (62) comes from the fact that the plain numeral can be split from the noun when the *ci* is present, as in the non-subject cleft in (64) below:

- (64) **Juróóm** l-a-a gis *(ci) jën
 five XPL-COP-1SG see P fish
 ‘I saw FIVE fish’

This pattern is strongly reminiscent of *combien* extraction in French, where the NP can be stranded only if it is preceded by the preposition *de*.

To summarize what we have seen so far:

- (65) a. *i* and *ci* are in complementary distribution (56d), (56e).
 b. *i* and *wh* are in complementary distribution (60).
 c. *ci* and *wh* co-occur (60).
 d. *wh* (*ñáata*) can only be extracted from a *ci*-form.

The distributional facts above are interesting because there are two dependencies that do not seem to match up. That is, if *i* and *ci* are in complementary distribution, we might plausibly say that they are of the same category and thus the presence of one excludes the presence of the other; or that they are of different categories, but make partial use of the same pieces of structure (as for example, a Wh DP and a focus DP). The same could be said regarding the complementary distribution of *i* and Wh. Given this, we might expect *ci* and Wh to be in complementary distribution. But, they are not.

¹⁸ As pointed out by a reviewer, (63) looks very much like the partitive *en* construction in French:

- (i) J'en ai tappé quatre
 I of.them have hit four
 ‘I hit four of them’

17.4 Universal Quantification

17.4.1 Introduction

Universal quantification in Wolof is expressed through three different constructions: a determiner, a relative clause construction, or reduplication. We discuss each in turn.

17.4.1.1 Universal Determiner-Qs

The universal determiner is *CL-epp*, which can precede or follow the noun:

- (72) a. xale (% y-i) **y-epp**
 child CL.PL-DEF.PROX CL.PL-all
 ‘all of the children’
- b. **b-epp** xale (*b-i)
 CL- all child CL-DEF.PROX)
 ‘every child’

(72) shows that when *CL-epp* follows the noun it takes plural noun class agreement (*y-*) and corresponds to *all* in English (which occurs with plural count nouns). For some speakers, the definite article can co-occur with the following universal. If *CL-epp* precedes the noun, then it takes singular noun class agreement (*b-*) and corresponds to English *every* (which occurs with singular count nouns). At least on the face of things, the pronominal construction appears to be structurally parallel to indefinite expressions of the form [*CL-enn* [NP]], see e.g. (36a). The definite article cannot co-occur with the pronominal *CL-epp*, as (72b) shows.

The singular form also occurs postnominally, in which case, it means ‘entire, whole’, highlighting the modifying nature of postposed *CL-epp*:

- (73) Jàng-na-a **tééré** **b-épp**
 read-FIN-1SG book CL-all
 ‘I read the whole book’

A generic reading of the universal obtains with the pronominal variant, or when *CL.PL-epp* is postnominal without the definite article. The latter case is similar to combinations of *all + bare NP* in English, which also give rise to generic readings (Matthewson 2001).

- (74) a. **B-epp** xale bëgg-na ceeb
 CL-all child like-FIN rice
 ‘Every child likes rice’
- b. **Xale** **y-epp** bëgg-na-ñu ceeb
 child CL-all like-FIN-3PL rice
 ‘All children like rice’

For a subset of speakers, the pronominal *CL-əpp* is quite marginal unless the noun is modified (i.e. restricted) with a relative clause, for example:

- (75) B-əpp xale ^{??}(b-u jàng tééré b-i)
 CL-all child CL-C_{Rel} read book CL-DEF.PROX

 di-na kontaan
 IMPERF-FIN happy
 ‘Every child (who read the book) will be happy’

The *CL-əpp* can be used without an overt nominal restriction. As before, the interpretation will be dependent on the noun class:

- (76) a. **Ñ-əpp** lekk-na-ñu ceeb (*ñi* = plural human class)
 CL.PL-all eat-FIN-3PL rice
 ‘Everyone ate rice’

 b. Lekk-na-a **l-əpp** (*li* = singular thing class)
 eat-FIN-1SG CL-all
 ‘I ate everything’

 c. Dem-na-a **f-əpp** (*fi* = locative class)
 go-FIN-1SG CL-all
 ‘I went everywhere’

The universal quantifier may occur with DPs that have numerals. If the numeral is ‘two’, as in (77a), it corresponds to English ‘both’:

- (77) a. Ñaar i xale **y-əpp** dem-na-ñu¹⁹
 two PL.AGR child CL.PL-all go-FIN-3PL
 ‘Both children went’

 b. Fukk i xale **y-əpp** dem-na-ñu
 ten PL.AGR child CL.PL-all go-FIN-3PL
 ‘All ten children went’

¹⁹ Ka (1988) reports that the post-nominal universal quantifier *CL-əpp* is ATR harmonic to the noun. For some speakers though, in certain configurations, the postnominal *CL-əpp* is pronounced with a +ATR vowel. These are speakers who otherwise readily harmonize vowels. It is unclear what to make of this lack of vowel harmony. One possibility is that the lack of ATR harmony signals the presence of a related, but distinct universal quantifier. That is one universal is ATR harmonic and the other is not. This is particularly plausible given the data in Section 17.4.1.2 with mass nouns. We don’t pursue this further here, but leave it as a question for future research.

Finally, the universal can also occur with *wh*-expressions, in which case it appears to express the need for an exhaustive answer.

- (78) a. f-an f-epp
 CL-*wh* CL- all
 ‘where all’
- b. F-an **f-epp** l-a-ñu dem
 CL-*wh* CL- all XPL-COP- 3PL go
 ‘Where all did they go?’

17.4.1.2 Universals and Mass Nouns

So far we have focused on universal quantifiers combining with (plural) count nouns, but the postposed plural form can also combine with mass nouns, as shown in (79a–b), which are in the singular, as evidenced by the singular noun class agreement on the definite articles, *m-i* and *b-i*. (79c) shows that the plural universal quantifier cannot combine with a singular count noun:

- (79) a. ndox m-i **y- ëpp**
 water CL-DEF.PROX CL.PL-all
 ‘all the water’
- b. ceeb b-i **y- ëpp**
 rice CL-DEF.PROX CL.PL-all
 ‘all the rice’
- c. *xaj b-i **y-ëpp**
 dog CL-DEF.PROX CL.PL-all

Notice that the head noun in (79a–b) carries its NC-marker plus the singular definite (proximal) determiner. Thus, there is a mismatch between the singular definite article and the plural noun class marked universal. In addition, speakers that do not allow for the definite article to occur with *CL-epp* do however find (79a–b) grammatical. This suggests that the universal *y-ëpp* that appears in the construction in (79) has a different morpho-syntactic status than the universal that appears with count nouns.

The NC-marker and definite determiner can also be left out, but in such cases a change in meaning obtains: the resulting structures give rise to a plural count kind-reading according to which there are different kinds of water and rice, respectively:

- (80) a. ndox **y-ëpp**
 water CL.PL-all
 ‘all the waters’
- b. ceeb **y-ëpp**
 rice CL.PL-all
 ‘all the rices’ (literal meaning)

The data in (80) are most relevant for the discussion of NP-semantics in Wolof, for they appear to show that any kind of NP in Wolof, including apparent mass nouns, denotes into the domain of atomic individuals which can be quantified over by *y-epp*. If so, the massifying effect with such nouns would ultimately be due to the presence of the NC-markers *m-* and *b-* in (79a–b), which map the atomic sub-structure onto a lattice-structure without atomic subparts. This would suggest that at least some NC-markers have semantic import.²⁰ In a second step this lattice-structure is maximalized by means of the definite determiner *-i* in order to be amenable to universal quantification, along the same lines as in English *all the sugar*.

The pronominal singular universal does not occur with mass nouns:

- (81) a. ***M-epp** **ndox** tuuru-na
 CL-all water spill-FIN
 Intended: ‘All of the water spilled’
- b. ***B-epp** **ceeb** tuuru-na
 CL-all rice spill-FIN
 Intended: ‘All of the rice spilled’

To express the intended meanings in (81a–b), one uses the singular definite DP along with the plural invariable quantifier:

- (82) a. **Ndox** **m-i** **y-ëpp** tuuru-na
 water CL-DEF.PROX CL.PL-all spill-FIN
 ‘All of the water spilled on the table’
- b. **Ceeb** **b-i** **y-ëpp** tuuru-na
 rice CL-DEF.PROX CL-all spill-FIN
 ‘All of the rice spilled on the table’

17.4.2 *The Universal Relative Clause Construction*

Universal quantification is also possible with an indefinite relative clause construction built around the predicate *ne(kk)* ‘exist’:

- (83) a. Nit k-u ne(kk) lekk-na ceeb
 person CL-C_{Rel} exist eat-FIN rice
 ‘Each/every person ate rice’
- b. Lekk-na-a jën w-u ne(kk)
 eat-FIN-1SG fish CL-C_{Rel} exist
 ‘I ate every fish’

²⁰ See Kihm (2005) for discussion of noun class in Niger-Congo and Romance, focusing on the Atlantic language Manjaku.

- c. Dem-na-a f-u ne(kk)
 go-FIN-1SG CL-C_{Rel} exist
 ‘I went everywhere’

The relative clause is ‘indefinite’ in the sense that it contains the *u*-relative marker, which is associated with relative clauses whose head nouns are interpreted as indefinite. (Perhaps a more literal translation is ‘whichever (relevant) person that exists ate rice’ for something like (83a).)

Mass nouns cannot occur in the universal relative clause construction:

- (84) a. *Naan-na-a ndox m-u nekk
 drink-FIN-1SG water CL-C_{Rel} exist
- b. *Naan-na-a ceeb b-u nekk
 drink-FIN-1SG rice CL-C_{Rel} exist

That the relative clause universal can occur with count nouns, but not mass nouns indicates that it is similar to the English *every*.

17.4.3 Syntactic Distribution of Universally Quantified DPs

Having presented two types of morphologically distinct universal quantifiers, in this section, we briefly discuss their syntactic distribution. Generally, universally quantified DPs can occur in any argument position. They can occur as subjects:

- (85) a. **B-epp** xale ??(b-u nelaw) di-na kontaan²¹
 CL-all child CL-C_{Rel} sleep IMPERF-FIN happy
 ‘Every child (who slept) will be happy’
- b. **Xale** y-epp nelaw-na-ñu
 child CL-all read-FIN-3PL
 ‘Every child slept’
- c. **Xale** b-u nekk nelaw-na
 child CL-C_{Rel} exist read-FIN
 ‘Every child slept’

All three types of universal occur as objects:

- (86) a. Gis-na-a **b-epp** xale ??(b-u nelaw)
 see-FIN-1SG CL-all child CL-C_{Rel} sleep
 ‘I saw every child (who slept)’

²¹ Recall that the pronominal CL-*epp* + N is typically modified, especially in episodic contexts.

- b. Gis-na-a **xale** **y-epp**
 see-FIN-1SG child CL-all
 ‘I saw every child’
- c. Gis-na-a **xale** **b-u** **ne(kk)**
 see-FIN-1SG child CL-C_{Rel} exist
 ‘I saw every child’

All three types occur as objects of prepositions:

- (87) a. Wax-na-a ak **b-epp** **xale** ?(b-u nelaw)
 speak-FIN-1SG with CL-all child CL-C_{Rel} sleep
 ‘I spoke with every child (that slept)’
- b. Wax-na-a ak **xale** **y-epp**
 speak-FIN-1SG with child CL-all
 ‘I spoke with every child’
- c. Wax-na-a ak **xale** **b-u** **ne(kk)**
 speak-FIN-1SG with child CL-C_{Rel} exist
 ‘I spoke with every child’

To varying degrees, they can occur as possessors:

- (88) a. *xaj u **b-epp** **xale** (b-u jang tééré b-i)
 dog POSS CL-all child CL-C_{Rel} read book CL-DEF.PROX
 Intended: ‘every child’s dog’
- b. ??xaj u **xale** **y-epp**
 dog POSS child CL-all
 ‘every child’s dog’
- c. xaj u **xale** **b-u** **ne(kk)**
 dog POSS child CL-C_{Rel} exist
 ‘every child’s dog’

(88a) shows that the prenominal *CL-epp* cannot occur as a possessor. The plural universal in (88b) is also marginal. Instead, the relative clause form is used, as in (88c). The data in (88a–c) highlights the fact that the three different universals are indeed syntactically distinct.

17.4.4 *Universals and Distributivity*

The prenominal (CL-*epp* N), post-nominal (N CL-*epp*), and relative clause (N CL-C_{Rel} *nekk*) universal quantifiers pattern differently with respect to distributivity. This can be seen by how they interact with collective predicates like

daje ‘gather, meet’. As the paradigm in (89) shows, the prenominal and relative clause universals cannot be the subjects of a collective predicate like *daje* ‘meet’:

- (89) a. N *CL-epp* + Collective Predicate
 Xale **y-ëpp** daje-na-ñu
 child CL-all gather-FIN-3PL
 ‘All the children gathered’
- b. N *CL-C_{Rel}*+ Collective Predicate
 *Xale **b-u ne(kk)** daje- na-ñu
 child CL-C_{Rel} exist gather-FIN-3PL
- c. *CL-eppN* + Collective Predicate
 ***B-epp** xale daje-na
 CL-all child gather-FIN

An identical pattern of grammaticality is seen with the verbal affix *-andoo*, which roughly corresponds to English *together*. The affix occurs with a plural subject:

- (90) a. N *CL-epp* + *-andoo*
 Xale **y-ëpp** lekk-**andoo**-na-ñu ceeb b-i
 child CL-all eat-together-FIN-3PL rice CL-DEF.PROX
 ‘All children ate the rice together’
- b. N *CL-C_{Rel}*+ *-andoo*
 *Xale **b-u nekk** lekk-**andoo**-na ceeb b-i
 child CL-C_{Rel} exist eat-together-FIN rice CL-DEF.PROX
- c. *CL-eppN* + *-andoo*
 ***B-epp** xale lekk-**andoo**-na ceeb b-i
 CL-all child eat-together-FIN rice CL-DEF.PROX

The grammaticality of (89a) and (90a) suggests that the *N CL-epp* construction corresponds to English *all*, while the *N CL-C_{Rel}* and *CL-epp N* are more akin to English *every* or *each*, which are more strongly distributive.

17.4.5 Reduplication

A third construction for expressing universal quantification is the reduplicative *NP-oo-NP*:

- (91) a. **Góór-óó-góór** ma gis-kó
 man-oo-man 1SG see-3SG
 ‘I saw every single man’
- b. Dem-na-a **kër-óó-kër**
 go-FIN-1SG house-oo-house
 ‘I went to every single house’

The *NP-oo-NP* DP focuses on distributivity. For example, (91a) emphasizes that I talked to each and every man. Fal (1999) gives examples of this type of universal, but it is not discussed elsewhere in the literature on Wolof to our knowledge.²² Interestingly, there is a strong preference for *NP-oo-NP* DPs to surface on the left edge of the clause and be resumed by a singular clitic, as in (91a). In addition, when this type of universal occurs on the left edge of the clause, it is typically of the ‘adverbial’ type, as in (2h).²³

17.4.6 Quantifier Float

Quantifier float is possible, with the exact form and position of the quantifier varying according to clause type. In a neutral *na*-clause like (92a), when the quantifier moves from its original position it has to occur with a strong third person plural pronoun, *ñoom*, as shown in (92b–c):

- (92) a. Xale **y-ëpp** dem-na-ñu
 child CL.PL-all go-FIN- 3PL
 ‘All (the) children went’
- b. Xale y-i *(**ñoom**) **ñ-ëpp** dem-na-ñu
 child CL.PL-DEF.PROX they CL.PL-all go-FIN-3PL
 ‘The children all went’ (lit.: the children they all went)
- c. Xale y-i dem-na-ñu *(**ñoom**) **ñ-ëpp**²⁴
 child CL.PL-DEF.PROX go-FIN-3PL they CL.PL-all
 ‘The children went all’ (lit. : the children went they all)

Note that the plural *children* is in the *yi*-class in (92a), while the floated quantifier is in the *ñi*-class in (92b–c). We showed earlier that strong pronouns trigger *ñi*-class agreement on the universal. This suggests that the floated quantifier actually agrees with the strong pronoun. When a DP contains a universal and a numeral, the numeral can be floated along with the universal:

- (93) a. Xale y-i **ñoom** **ñaar** **ñ-ëpp** dem-na-ñu
 child CL.PL-DEF.PROX they two CL.PL-all leave-FIN-3PL
 ‘Both children left’ (lit.: the children two of them all left)
- b. Xale y-i dem-na-ñu **ñoom** **ñaar** **ñ-ëpp**
 child CL.PL-DEF.PROX leave-FIN-3PL they two CL.PL-all
 ‘Both children left’

²² See Gil (1995) for much relevant discussion of reduplication as a means of expressing universal quantification.

²³ See Beghelli (1995) for discussion of left peripheral quantifiers.

²⁴ Intonationally, floated quantifiers that occur on the right edge of the clause are typically preceded by a (potentially very short) pause and have higher pitch than the rest of the sentence. See Rialland and Robert (2001) for discussion of intonation in Wolof.

In A'-extraction constructions like clefting, the quantifier can be floated, with or without an accompanying strong pronoun, as shown for the *WH-*əpp** quantifier in (94)²⁵:

- (94) **Ñ-an** l-a Awa wax ne **ñ-əpp** l-a-a gis
 CL.PL-*wh* XPL-COP awa say that CL.PL-all XPL-COP-1SG see
 'Who all did Awa say that I saw?'

17.4.7 Related Universal-Type Constructions

Other quantifier constructions are formed from indefinite relative clauses, like the universal relative clause. We briefly discuss these here.

Free choice items are constructed with a noun modified by an indefinite relative clause containing the modal possibility auxiliary *mën* 'can' and the verb *doon* 'be'²⁶:

- (95) a. Xale b-u mu mën a doon mën-na wey
 child CL-C_{Rel} 3sg can INF BE can-FIN sing
 'Any child can sing'
- b. Jàng-al **tééré** **b-u** **mu mën-ti doon**²⁷
 read-IMPER book CL-C_{Rel} 3sg can-? BE
 'Read any book!'
- c. Jàng-al **tééré** **y-əpp** !
 read-IMPER book CL.PL-all
 'Read every book!'

The relative clause contains either the verb *mën* 'can' followed by the infinitival marker *a*, as in (95a), or *mën* is suffixed with *-ti* and the *a* is dropped (95b). The presence of the possibility modal *mën* plus the verb *doon* 'to be' suggests an analysis of the free choice effect in terms of an intentionalized interpretation

²⁵ See Torrence (2010) for fuller discussion of A'-quantifier float.

²⁶ The verbal element *doon* is complex and appears to be composed of the imperfective marker *di* plus the past tense marker *-oon*. For the purposes of this paper, we treat it as an auxiliary-type verb.

²⁷ A related construction is used to form concessive conditionals, which involve either a free relative clause and verb reduplication (i) or a free relative clause and *mën-ti* (ii):

- (i) **L-u** **ma** **lekk** **lekk**, da-ma xiif
 CL-C_{REL} 1sg eat eat do-1SG hungry
 'No matter what I eat, I am hungry'
- (ii) **L-u** **ma** **mën-ti** **lekk** da-ma xiif
 CL-C_{REL} 1SG can-? eat do-1SG hungry
 'No matter what I eat, I am hungry'

‘An NP-entity in some possible world compatible with the actual world in the relevant aspects.’ (95a) is ambiguous between a universal and free choice reading. However, these can be distinguished in imperatives, for example, as indicated in the translations for (95b) and (95c).

Some exceptive phrases are also formed using indefinite relative clauses, marked by the presence of the *u*-relative complementizer:

- (96) a. Gis-u-ma [k-u d-ul Awa]
 see-NEG-1SG CL-C_{Rel} IMPERF-NEG awa
 ‘I did not see anyone but Awa’
- b. *Gis-na-a [k-u d-ul Awa]
 see-FIN-1SG CL-C_{Rel} IMPERF-NEG awa
 Intended: ‘I saw everyone but Awa’
 (i.e. ‘I saw anyone who was not Awa’)

In (96a), the (bracketed) object of the verb consists of a free relative clause with singular noun class agreement, *k*-, on the relative complementizer, *-u*. (Recall that the *ki*-class is the singular human noun class. This is why (96a) is interpreted as ‘anyone’.) (96a) is more literally translated as, ‘I did not see anyone who was not Awa’. That is, ‘I saw only Awa’. In fact, the construction in (96a) is a negative polarity item, as the absence of negation in the matrix clause in (96b) leads to ungrammaticality.

Interestingly, the construction in (96a) also distinguishes the zero-marked indefinite from the overtly marked ones. This is because the overtly marked indefinites are ungrammatical:

- (97) Gis-u-ma [k-u d-ul Ø/*b-enn/*a-b xale]
 see- NEG-1SG CL-C_{Rel} IMPERF-NEG DET/CL-some/NDEF-CL child
 ‘I did not see anyone but a child’ (I.e. ‘I saw only a child’)

17.4.8 Modified Universals

All three types of universal quantifiers can also be modified by *daanaka* ‘almost’:

- (98) a. **Daanaka xale (y-i) y-epp** wey-na-ñu
 almost child CL.PL-DEF.PROX CL.PL-all sing- FIN- 3PL
 ‘Almost all of the children sang’
- b. **Daanaka b-epp xale** jàng-na tééré b-i
 almost CL-all child read-FIN book CL-DEF.PROX
 ‘Almost every child read the book’
- c. **Daanaka xale b-u nekk** jàng-na tééré b-i
 almost child CL-C_{Rel} exist read-FIN book CL-DEF.PROX
 ‘Almost every child read the book’

From the perspective of English, (98c) is somewhat unexpected given that the relative clause universal seems to otherwise pattern very similarly to English *each*.

The post-nominal *y-ëpp* that occurs with mass nouns (Section 17.4.1.2) can also be modified by *daanaka*:

- (99) a. **Daanaka ndox m-i y-ëpp** tuuru-na
 almost water CL-DEF.PROX CL-all spill-FIN
 ‘Almost all of the water spilled on the table’
- b. **Daanaka ceeb b-i y-ëpp** tuuru-na
 almost rice CL-DEF.PROX CL-all spill-FIN
 ‘Almost all of the rice spilled on the table’

17.5 Value Judgment Expressions

Value judgment expressions like English *many* or *few* are expressed using relative clause constructions in Wolof. The equivalent of *many* involves the stative verb *bëri* ‘be many, be much’:

- (100) a. **Góór y-u bëri** d-u-ñu tux
 man CL.PL-C_{Rel} be.many IMPERF-NEG-3PL smoke
 ‘Many men don’t smoke’
- b. Xadi gis-na **góór y-u bëri**
 Xadi see-FIN man CL.PL-C_{Rel} be.many
 ‘Xadi saw many men’

bëri also combines with (singular) mass nouns, in which case it corresponds to *be much* or *be a lot* in English:

- (101) a. Xadi naan-na **meew m-u bëri**
 Xadi drink-FIN milk CL-C_{Rel} be.much
 ‘Xadi drank a lot of milk’
- b. **Meew m-u bëri** tuur-u-na
 milk CL-C_{Rel} be.much spill-REFL-FIN
 ‘A lot of milk spilled’

The expression of *few/little* varies according to whether a mass noun or count noun is present. For count nouns, *few* involves the negation of *bëri*. Such a construction is ambiguous between a ‘few’ interpretation and a ‘not many’ interpretation. This construction is most naturally found in generic statements:

- (102) Xaj y-u bëri-wul mën a jàng
 dog CL.PL-C_{Rel} be.many-NEG can INF read
 ‘Few dogs can read’
 ‘Not many dogs can read’

In episodic contexts, it is much more natural to use (negated) *bēri* as a matrix verb:

- (103) Tééré [y-i ma jàng] **bēre-wu-ñu**
 book CL.PL-C_{Rel} 1SG read be.many-NEG-3PL
 ‘I read few books’ (Lit. ‘The books that I read were not many’)
 ‘I did not read many books’

With mass noun the adjectival predicate *tuuti* ‘small’ (104a) is used to express ‘some/little’, in which case it precedes the NP (104b–c) and seems to function as a genuine modifier²⁸:

- (104) a. Xaj b-i am-na nopp y-u **tuuti**
 dog CL-DEF.PROX have-FIN ear CL.PL-C_{Rel} small
 ‘The dog has small ears’
 b. Xadi lekk-na **tuuti** **ceeb** Mass Noun
 Xadi eat-FIN small rice
 ‘Xadi ate some/little rice’
 c. Xadi mey-na-ma **tuuti** **suukër** Mass Noun
 Xadi give-FIN-1sg small sugar
 ‘Xadi gave me some/little sugar’

Count nouns cannot be used with the pronominal *tuuti*:

- (105) *Awa gis-na tuuti góór
 awa see-FIN small man
 Intended: ‘Awa saw some/few men’

²⁸ That *tuuti* is a quantifier inside of the DP, as opposed to a modifier of the verb is supported by the fact that *tuuti* and the object can be clefted together, suggesting that they form a constituent. This is unexpected if the *tuuti* is a verbal modifier:

- (i) [Tuuti ceeb] l-a-a lekk
 small rice XPL-COP-1SG eat
 ‘I ate A LITTLE RICE’

Coordination facts also suggest that in cases like (104b–c), *tuuti* quantifies over the noun:

- (ii) Lekk-na-a **tuuti** **ceeb** ak **tàndarma** y-u **bēri**
 eat-FIN-1SG small rice and date CL.PL-C_{Rel} be.many
 ‘I ate a little rice and many dates’

If *tuuti* were modifying the extent of the action of the verb in (ii), then we might expect (ii) to be contradictory or at least quite strange. This is because (ii) would mean that the extent of my eating was little, but I ate a lot of dates. Instead, it simply indicates that the quantity of rice was small and the quantity of dates was big.

The relative clause construction with a mass noun yields only the canonical adjectival reading:

- (106) #Xadi lekk-na ceeb b-u tuuti
 Xadi eat-FIN rice CL-C_{Rel} small
 *‘Xadi ate some/little rice’
 ‘Xadi ate tiny rice’

17.6 ‘Most’

The proportional quantifier ‘most’ is expressed using the verb *ëpp* ‘exceed, surpass’ in a free relative clause construction:

- (107) a. Xale y-i ñu-a ëpp góór y-i
 child CL.PL-DEF.PROX 3PL-COP exceed man CL.PL-DEF.PROX
 ‘The children outnumber the men’
- b. [L-u ëpp ci jigéen y-i] dem-na-ñu
 CL-C_{Rel} exceed P woman CL.PL-DEF.PROX leave-FIN-3PL
 ‘Most of the women left’
 (Lit. ‘what exceeds among the women left’)

In (107a), the transitive verb *ëpp* occurs in the subject focus construction. In (107b), the bracketed free relative clause occurs preverbally in a neutral clause. In terms of agreement, (107b) is unexpected. The relative clause has a *li*-class agreeing complementizer on the left edge, *l-u*. While the *li*-class is a singular noun class, the verb *dem* ‘leave’, has 3PL subject agreement, *ñu*.

Generic subjects with proportional quantifiers carry the definite article:

- (108) [L-u ëpp ci góór *(y-i)]
 CL-C_{Rel} exceed P man CL.PL-DEF.PROX
 d-u-ñu tox
 IMPERF-NEG- 3PL smoke
 ‘Most men don’t smoke’

Cases like (108) contrast with ordinary generic statements, which take the zero-determiner and trigger singular agreement on verbs:

- (109) a. Góór d-u tox
 man IMPERF-NEG smoke
 ‘Men don’t smoke’
- b. Góór y-i d-u-*(ñu) tox
 man CL.PL-DEF.PROX IMPERF-NEG-3PL smoke
 ‘The men don’t/will not smoke’
 *‘Men don’t smoke’

The expression of ‘more’ also involves the predicate *ëpp*, but allows for definite and indefinite NPs. If definite, the preposition *ci* is used, as with the ‘most’-interpretation in (107b) above:

- (110) a. [L-u **ëpp** **ñëtt** **i** **jigéén]** dem-na-ñu
 CL-C_{Rel} exceed three PL.AGR woman leave-FIN-3PL
 ‘More than three women left’
- b. [L-u **ëpp** **ci** **ñëtt** **i** **jigéén** **y-i]**
 CL-C_{Rel} exceed P three PL.AGR woman CL.PL-DEF.PROX
 dem-na-ñu
 leave-FIN-3PL
 ‘More than three of the women left’

17.7 ‘Only’ DPs

There are three Wolof particles that correspond to ‘only’: *rekk*, *kese*, and *doŋŋ*. These particles occur on the far right edge of DP and follow modifiers and the definite article:

- (111) a. xaj b-i **rekk/kese/doŋŋ.**
 dog CL-DEF.PROX only
 ‘only the dog’
- b. xaj [b-u ñuul] **rekk/kese/doŋŋ**
 dog CL-C_{Rel} black only
 ‘only a black dog’

If a subject occurs with *only*, it must be focused, the same as in many other West African languages (see e.g. Grubic and Zimmermann 2011). This can be seen in the contrast between (112a) and (112b). In (112a), with a neutral clause (i.e. nothing is in focus), the *only* subject is ungrammatical. In (112b) on the other hand, the subject focus clause is fine.

- Neutral Clause
- (112) a. ***Ayda rekk /doŋŋ /kese** jàng-na teere b-i
 ayda only read-FIN book CL-DEF.PROX
 Intended: ‘Only Ayda read the book’
- Subject Focus
- b. **Ayda rekk /doŋŋ /kese** mo-o jàng tééré b-i
 ayda only 3SG-COP read book CL-DEF.PROX
 ‘It is only Ayda who read the book’

Only can also combine with a numerically quantified DP:

- Subject Focus
 (113) Juróómi ndongo rekk /doŋŋ /kese ño-o wey
 five student only 3PL-COP sing
 ‘Only five students read the book’

Unlike subjects, a DP object with *only* is fine in situ in a neutral clause ((114a–b)) or it can be focused (114c):

- Neutral Clause
 (114) a. Ayda jàng-na tééré rekk /doŋŋ /kese
 ayda read-FIN book only
 ‘Ayda read only a book’
- Neutral Clause
 b. Ayda jàng-na tééré b-i rekk /doŋŋ /kese
 ayda read-FIN book CL-DEF.PROX only
 ‘Ayda read only the book’
- Object Focus
 c. [Tééré rekk /doŋŋ /kese] l-a Ayda jàng
 book only XPL-COP ayda read
 ‘It’s only a book that Ayda read’

17.8 Boolean Connectives and the Exceptive Construction

Wolof expressions of Boolean combinations of DPs are more structurally complex than in English. For example, *both...and* is rendered as in (115), with a numeral, strong pronoun (*ñoom* ‘3PL’), and a universal quantifier:

- (115) [Awa ak Ayda ñoom ñaar ñ-ëpp] wey-na-ñu
 awa and ayda they two CL-all sing-FIN- 3PL
 ‘Both Awa and Ayda sang’

The equivalent of *either...or* involves topicalization of the *either...or* DP and a partitive with the clitic *ci*:

- (116) Awa wala Ayda, am-na k-u ci wey
 awa or ayda exist-FIN CL-C_{Rel} PART sing
 ‘Either Awa or Ayda sang’
 (Lit. ‘Awa or Ayda, there is someone among them who sang’)

The expression of *all but* involves a circumlocution:

- (117) Ñ-ëpp a jàng tééré b-i ba mu des Awa
 CL-all COP read book CL-DEF.PROX until 3SG remain awa
 ‘Everyone but Awa read the book’

(117) involves a separate adverbial clause introduced by *ba* ‘until’. (117) is more literally given in English as something like, ‘Everyone read the book, excepting Awa’.

17.9 Adverbial Quantifiers

Adverbial quantifiers take several forms in Wolof. For the equivalent of *once*, *twice*, etc., a numeral is used with the word *yoon* ‘time, occasion’²⁹:

- (118) a. Awa dem-na Dakar **b-enn** **yoon**
 awa go-FIN Dakar CL-one time
 ‘Awa went to Dakar one time’
 b. Awa dem-na Dakar **ñaar** **i** **yoon**
 awa go-FIN dakar two PL.AGR time
 ‘Awa went to Dakar two times (twice)’
 c. Awa dem-na Dakar **ñeent** **i** **yoon**
 awa go-FIN dakar four PL.AGR time
 ‘Awa went to Dakar four times’

The restructuring verb *mës* ‘do once’ also expresses A-quantification and its negative is used as ‘never’:

- (119) a. Awa mës-na dem Dakar
 awa do.once-FIN go dakar
 ‘Awa has gone to Dakar (once)’
 b. Awa **mës-ul** dem Dakar
 awa do.once-NEG go dakar
 ‘Awa has never gone to Dakar’

²⁹ The word *yoon* is like the French *fois* ‘time’ in the sense of ‘occasion’, rather than *temps* ‘time’ the abstract concept.

Adverbial quantifiers like *always* can be formed using nominal adjuncts consisting of a noun like *saa* ‘time, moment’ modified by the universal relative clause construction:

- (120) a. **Saa** [**s-u** **ne(kk)**] da-ma-y lekk gerte
 time CL-C_{Rel} exist do-1sg-IMPERF eat peanut
 ‘I always eat peanuts’ (Lit. ‘I eat peanuts every time’)
- b. Da-ma-y lekk gerte **saa** [**s-u** **ne(kk)**]
 do-1SG-IMPERF eat peanut time CL-C_{Rel} exist
 ‘I always eat peanuts’ (Lit. ‘I eat peanuts every time’)

DP adjuncts like *saa su nekk* ‘every time’ can appear preverbally or post-verbally, as (120a–b) attest. Other expressions of time can be used similarly, with the expected compositional meaning:

- (121) a. **Bës** [**b-u** **nekk**] da-ma-y lekk yaasa
 day CL-C_{Rel} exist do-1SG-IMPERF eat yaasa
 ‘Every day I eat yaasa’
- b. Da-ma-y lekk yaasa **bës** [**b-u** **nekk**]
 do-1SG-IMPERF eat yaasa day CL-C_{Rel} exist
 ‘I eat yaasa every day’

The borrowed adverb *tusuur* (from French *toujours*) is also used for ‘always’. However, *tusuur* typically triggers the adverbial clause type, without the imperfective marker *di*:

- (122) *Tusuur* *ma* lekk gerte
 always 1SG eat peanut
 ‘I always eat peanuts’

‘Sometimes’ involves a complex DP with *saa* ‘time’:

- (123) a. **Y-enn** **saa** **y-i** di-na-a dem Dakar
 CL.PL-some time CL.PL-DEF.PROX IMPERF-FIN-1SG go dakar
 ‘Sometimes I go to Dakar’
- b. Di-na-a dem Dakar **y-enn** **saa** **y-i**
 IMPERF-FIN-1SG go dakar CL.PL-some time CL.PL-DEF.PROX
 ‘I go to Dakar sometimes’

The DP adjunct can appear on either the left or right edge of the clause, as shown in (123a–b). The DP itself contains both the plural indefinite article *y-enn* and the plural definite article *y-i*. Thus, it is more literally ‘some of the times’, as in the partitive construction discussed in Section 17.3.3 (example (52)).

The proportional A-quantifier *often* is expressed using the restructuring verb *faral* followed by the imperfective auxiliary. In the negative *faral* corresponds to ‘rarely,’ or ‘not often’:

- (124) a. Di-na-a faral di lekk dibi
 IMPERF-FIN-1SG often IMPERF eat dibi
 ‘I often eat dibi’
- b. D-u-ma faral di lekk dibi
 IMPERF-NEG-1SG often IMPERF eat dibi
 ‘I rarely eat dibi’
 ‘I do not often eat dibi’

17.10 Existential Constructions

Wolof lacks overt expletives in canonical matrix clauses. Existential constructions are formed by using the verb *am*:

- (125) a. **Am**-na ñëtt i jumaa ca dëkk b-a
 exist-FIN three PL.AGR mosque P town CL-DEF.DIST
 ‘There are three mosques in the town’
- b. **Am**-na tééré y-u bëri ci bibliotek b-i
 exist-FIN book CL.PL-C_{Rel} be.many P library CL-DEF.PROX
 ‘There are many books in the library’
- c. **Am**-na (a-y) xale y-u y daw
 exist-FIN NDEF-CL.PL child CL.PL-C_{Rel} IMPERF run
 ‘There are some children running’
- d. **Am**-na xale b-u y lekk ceeb
 exist-FIN child CL-C_{Rel} IMPERF eat rice
 ‘There is a child that is eating rice’

However, certain clause types, like subjunctives, require overt subjects. In that case, the 3sg subject marker is used:

- (126) Bëgg-na-a [Subjnc ***(mu)** am a-y
 want-FIN-1SG 3SG exist NDEF-CL.PL
 xale y-u y daw]
 child CL.PL-C_{Rel} IMPERF run
 ‘I want there to be children running’

In fact, there is no single Wolof verb that corresponds to English *be*. For example, the existential verb *am* is also used in possessive *have* clauses:

- (127) a. Xadi **am-na** xaalis
 xadi have-FIN money
 ‘Xadi has money’
- b. Muus **am-na** tànk
 cat have-FIN leg
 ‘Cats have legs’
- c. **Am-na-a** loxo
 have-FIN-1SG hand
 ‘I have hands’

DPs in existential constructions must be indefinite. This can be seen in (128a–d), which show that definite DPs with *the* or *this* and strong quantifiers like *most* or *all* cannot be used in existential clauses. (128e) shows that an *NDEF-CL* DP is fine in an existential clause:

- (128) a. *Am-na **góór** **g-i** ci néég b-i **the*
 exist-FIN man CL-C_{Rel} P room CL-DEF.PROX
- b. *Am-na **góór** **b-ii** ci néég b-i **this*
 exist-FIN man CL-this P room CL-DEF.PROX
- c. ??/*Am-na **l-u** **ëpp** **ci góór y-i** ci **most*
 exist-FIN CL-C_{Rel} exceed P man CL-DEF.PROX P
- arme b-i?
 army CL-DEF.PROX
- d. *Am-na **góór** **y-ëpp** ci arme b-i **all*
 exist-FIN man CL.PL-all P army CL-DEF.PROX
- e. Am-na **a-y** **góór** ci arme b-i *NDEF*
 exist-FIN NDEF-CL.PL man P army CL-DEF.PROX
 ‘There are men in the army’

While only indefinites can appear in existential clauses in Wolof, not all indefinites can do so. Specifically, neither simple zero-marked or *CL-ENN* DPs can appear in existentials³⁰:

- (129) a. *Am-na \emptyset **góór** ci arme b-i * \emptyset -DET
 exist-FIN DET man P army CL-DEF.PROX
- b. *Am-na **y-enn** **góór** ci arme b-i *CL-*some*
 exit-FIN CL-SOME man P army CL-DEF.PROX

17.11 Scopal Interactions

In this section, we briefly turn to scopal interactions between subject and object universals and indefinites. This reveals further differences between the universal quantifiers.

When an indefinite is a subject and a universal is an object, the object cannot scope over the subject:

- (130) a. **A-b/b-enn** xale jàng-na **b-epp** tééré³¹
 NDEF-CL/CL-SOME child read-FIN CL-all book
 ‘A (particular) child read every book’ $\exists > \forall, * \forall > \exists$
- b. **A-b/b-enn** xale jàng-na tééré **b-u** **ne(kk)**
 NDEF-CL/CL-SOME child read-FIN book CL-C_{Rel} exist
 ‘A (particular) child read every book’ $\exists > \forall, * \forall > \exists$

(130) shows that neither the prenominal nor relative clause universals can take inverse scope in object position.

In contrast, when a universal is the subject and an existentially quantified DP is the object, there are two scope patterns.

- (131) a. Xale **b-u** **ne(kk)** jàng-na a-b/b-enn/* \emptyset tééré
 child CL-C_{Rel} exist read-FIN NDEF-CL/CL-some/DET book
 ‘All the children read a/some book’ $\forall > \exists, \exists > \forall$

³⁰ If these DPs are modified, they become grammatical in existentials:

- (i) Am-na **góór** [y-u **njool**] ci arme b-i \emptyset -DET
 exist-FIN man CL.PL-C_{Rel} tall P army CL-DEF.PROX
 ‘There are tall men in the army’
- (ii) Am-na **y-enn** **góór** [y-u **njool**] ci arme b-i CL-SOME
 exist-FIN CL.PL-SOME man CL.PL-C_{Rel} tall P army CL-DEF.PRO
 ‘There are some tall men in the army’

³¹ Recall that zero-marked DPs cannot be subjects in episodic contexts. Thus, we cannot test them here.

- b. **B-*ep*** xale jàng-na **a-b/b-enn**/* \emptyset tééré
 CL-all child read-FIN NDEF-CL/CL-some/DET book
 ‘Every child read a book’ $\forall > \exists, * \exists > \forall$

(131a) shows that when the relative clause type of universal is the subject and NDEF-CL or CL-some is the object, inverse scope is possible. Thus (131a) is compatible with a situation in which there is a single book that every child read. (131b) shows that when the subject DP has the (morphologically singular) pronominal universal, *CL-all*, an existentially quantified object cannot take wide scope over the subject. Interestingly, (131a–b) show that the zero-marked indefinite is ungrammatical in this context. We saw earlier (e.g. (32b)) that zero-marked indefinites are fine as objects in episodic contexts. Therefore, it is the presence of the universal subject in (131) that is the source of the ungrammaticality.

17.12 Conclusions and Open Issues

In this investigation of Wolof quantifiers, we have established several descriptive and analytical points along the way. At the same time, this first foray into Wolof quantifiers opens up a number of issues for further research. We have shown that the morphological differences among the indefinites and universals corresponds to distinct syntactic and semantic properties. That is, the morphological differences between the different DP types cannot be taken lightly. Instead, these differences potentially provide important clues about the DP-internal syntax, the semantics of the DP-internal morphemes, and how this is related the external distribution of DPs. Wolof is a particularly good language for such issues as it possesses a rich system of noun class and concord. While there are many studies of noun class morphology and syntax, little attention has been paid to the role of noun class in quantificational structures. As most Niger-Congo languages possess noun classes, study of quantification and its interaction with noun class, for example, promises to supply a rich new source of data for investigation of natural language semantics.

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Chapter 18

Overview

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18.1 Preliminary Generalizations

Here we take a first pass at generalizing over the 17 preceding articles. We count English, [Chapter 1](#), in our sample and also include Finnish, drawing on Suihkonen (2007) whose quantifier inventory is built on the same semantic classification as ours. At certain points we also draw on Matthewson (2008) and Bach et al. (1995).

In what follows we call an expression ‘lexical’ if its meaning is understood as a unit rather than computed as a function of the denotations of subconstituents. This is close to ‘monomorphemic’ but the notions diverge when the morphological analysis is fine enough. For example we treat *always* as lexical though it consists of *all+ways* (the *s* on *ways* is historically the genitive *s* not the plural *s*). Also a lexical item is not necessarily a phonological word (a notion Nikolaeva regards as unclear in Adyghe).

Gen 1 All 18 languages (Ls) in our sample present both D- and A-quantifiers which are intersective (Generalized Existential), in fact cardinal.

All the Ls in our sample present monomorphemic low numerals: *one, two, ...* And A-quantifiers are commonly derived from D-quantifiers: Malagasy *dimy* ‘five’ \Rightarrow *indimy* ‘five times’. Often (Hebrew, Russian, Japanese, Mandarin) the format [D + *times*] builds A-quantifiers: *some / a few / ten times*. Also common are lexical interrogatives *which* and *how many*. (Both are intersective, the latter cardinal: *Which students are bilingual?* just asks us to identify the members of the intersection of the set of students with the set of bilinguals. And *How many?* queries the cardinality of that intersection.)

Gen 1 supports **Gil’s Generalization** (Gil 1993): *verbal quantification is morpho-syntactically more complex than nominal quantification*. We return to this topic at the end of this chapter.

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Gen 2 All 18 Ls in our sample allow modification of D-cardinal quantifiers: *more than* / *less than* / *exactly n*, *nearly* / *approximately* / *about n*. By Gen 1 we expect, and find, A-quantifiers like *more than five times*, etc.

Gen 3 All 18 Ls present *value judgment* D-cardinals (*many*, *few*). They may be modified: *very many*, *too few*, *not enough*, *surprisingly many*. These modifiers extend to the A-quantifiers as well: *very many times*, *very often*, *too seldom*.

Such quantifiers carry, more or less strongly, a value judgment that the number of elements in the intersection is more (or less) than expected.

Gen 4 All 18 Ls in our sample present both D- and A-quantifiers which are *co-intersective* (Generalized Universal).

- a. All have one (often several) lexical D-quantifiers meaning ALL.
- b. All have at least one lexical A-quantifier meaning ALWAYS.

Gen 5 All 18 Ls in our sample distinguish phonologically between a *collective* universal and a *distributive* one.

The collective builds expressions that bind arguments of collective predicates like *gather* – *All the students gathered in the square*. Distributives, such as *each*, do not: **Each student gathered in the square*.

Gen 6 All 18 Ls in our sample present both D- and A-*proportionality* quantifiers

Proportionality D-quantifiers: *half* is the most common lexical one. English, Hebrew, Finnish, W. Armenian, Russian, Pima, Japanese and Malagasy have (a delicately) lexical HALF. *Most* is rarely monomorphemic; it is lexical in English, Russian, Hebrew and Finnish, and nearly so in Hungarian and German where it requires a definite article. In Finnish and German it is a superlative form and so bimorphemic. Commonly *most* = ‘the majority of’ or ‘the greater part of’.

Proportionality A-quantifiers: Seven of our Ls appear not to present lexical proportional A-quantifiers at all: Adyghe, Basque, Garifuna, Hebrew, Pima, Telugu, and W. Armenian. The other Ls all have at least a lexical *often* and sometimes a lexical *rarely*, *seldom*, or *usually*. And all have productively derived A-quantifiers such as *two times out of three* or *most* / *two thirds of the time*, formed with a proportional D-quantifier and a weak noun. In fact 11 of our Ls have A-quantifiers of the form *n* (out) of *m*. Case marking Ls (Adyghe, Basque) may use adverbial cases to derive A-quantifiers.

Gen 7 All 18 Ls allow Noun ellipsis following some cardinal D-quantifiers.

- (1) The ties were on sale, so I bought some, several, a dozen, ten, between five and ten, more than ten, *no, *a, *all, *almost all, *most, *?half, *?seven out of ten, *30%, *that flashy red

But English (and Hebrew) universal, proportional and definite Dets do not enjoy ellipsis in this context though many are fine with an appropriate complement: *all/most of them, that flashy red one, all that I could find*. Mandarin and Hungarian allow such ellipsis with some co-intersective and proportional Dets.

Gen 8 In all 18 Ls, quantified noun phrases (QNPs) built from a D-quantifier (DNPs) occur in all major argument positions (subject, object, object of adpositions, possessor) subject to subclass restrictions and lexical constraints (*all/each cat).

Gen 8 is surprising as many constraints on the distribution of DNPs are cited in the literature. In our Questionnaire (Chapter 1) we noted that San Lucas Quiavini Zapotec, normally VSO, fronts quantified subjects (Lee 2008). VSO Chamorro (Chung 2008) must front a QNP subject from a basic transitive sentence. And Garifuna (VSO) frequently but not obligatorily fronts quantified subjects. Languages regularly impose distributional constraints on subclasses of DNPs: In the partitive *two of DNP*, the DNP must be definite plural: **two of no cats*. Interrogative and downward entailing DNPs may be required to occupy a focus position if there is one. In Russian many QNPs with modified numeral quantifiers must occur in nominative or accusative positions. Definite DNPs may be excluded as pivots in Existential Ss: **Aren't there the older boys in your class?*.

Gen 9 All the Ls in our sample exhibit some type of quantifier scope ambiguity.

We count classical scope ambiguities between QNPs, as in *Some editor read every manuscript*, as well as Quantifier-Negation ambiguities: *Everyone doesn't know that* (which might be used to mean 'everyone is ignorant of that' or 'Not everyone knows that'). The presence of scope ambiguities is likely a language universal (Keenan 1988 suggests an explanation). Languages do seem to differ with regard to how easy it is to induce scope ambiguities. Languages with productive scrambling (Hungarian, Japanese, Basque) are likely to front a QNP forcing wide scope. There is also a cross-family tendency (a universal?) for the choice of quantifier expression to limit or force the choice of scope reading (Russian, Malagasy, Wolof). (The Malagasy chapter here eschews discussion of scope preferences due to unreliable speaker judgments. But this accepts that speakers exhibit different scope judgments).

Gen 10 All Ls in our sample have at least one demonstrative (*that, those*) which combines with a property denoting expression to form a **definite** DNP, one that may or may not (Straights Salish, Jelinek 1995) occur in argument position.

In our sample, Finnish, Russian, Telugu, and Mandarin lack a definite article or affix distinct from a demonstrative. Only English (and marginally Telugu) have an indefinite article segmentally distinct from the numeral *one* (WALS 2005:158–162). In German, Italian, Basque and Hungarian the numeral *one* is

used both as a numeral and as an indefinite article, whereas this is not the case in Russian, Malagasy or Japanese. In both English and Telugu the indefinite article is a phonologically reduced form of ‘one’ and one might argue that unstressed *egy* ‘one’ (Hungarian), *ein* (German) and *bat* (Basque) are indefinite articles, but, as in Italian, in careful speech they do not differ segmentally from the numeral.

Gen 11 All Ls in our sample have **partitive QNPs**: *two of those boys* (structurally indistinguishable from proportional QNPs in Telugu).

Gen 12 All 18 Ls in our sample have lexical expressions for ONE, ALL, ALWAYS, and MANY.

Not common is a lexical NO, present here only in English *no*, German *kein*, and Mandarin *mei*. (The two Germanic cases, like Danish *ingen*, are historically derived from [*ne* + (def) + *one*]. The Mandarin case seems derived from *mei* + the existential verb *you*).

Gen 13 All 18 Ls in our sample have at least one lexical ONLY.

The quantifier status of bare *only* is debatable, but it clearly builds complex quantifiers (inter alia) in English (*How many boys showed up? Only six*) and so is of interest here. Languages may have several synonyms of ONLY. English, Adyghe, Basque and Italian have three: *He was the sole/lone/only survivor*. Malagasy has five (*tokana*, + two in this volume, + two others in Keenan 2008).

Gen 14 All 18 Ls in our sample express equivalents of multiply-headed QNPs of the sort *more men than women*, as in *More men than women get drafted*.

This is surprising as such expressions seem complex and their syntax has not been well studied typologically. Notice that in English they do occur in various argument positions: *Sue has argued with fewer linguists than philosophers*, *Fewer girls than boys’ bikes were stolen*, *More students than teachers were believed to have signed the petition*, *More boys than girls read as many plays as poems over the vacation*, (Keenan 1987). We have not specifically elicited constituency checks in languages other than English, but did observe some diversity. For example, the Greek counterpart of the comparative *more women than men* shows rather clear non-constituent behavior.

Gen 15 All Ls in our sample allow some logical equivalents of Boolean compounding (AND/BUT, OR, NOT, NEITHER...NOR...) at the level of QNP: *most students but not all teachers* and often at the level of the quantifier: *most but not all poets* (English, German, Hungarian, Malagasy, Greek, W. Armenian, Russian, Basque, Adyghe, Japanese, Mandarin).

Basque, Garifuna, German, and Telugu present some systematic restrictions on Boolean compounding. Expressions equivalent to certain Boolean compounds of determiners are common in our sample: *exactly ten* denotes the same as *at*

least ten and not more than ten; *between six and ten* denotes the same as *at least six and at most ten*.

Gen 16 17 of our 18 languages present downward entailing DNPs.

Downward monotonicity may arise from the quantifier: *no, less than six, neither Jack nor Jill* or from overt negation: *not more than six*, or possessive DNPs with decreasing possessors: *no child's doctor*. Telugu lacks decreasing arguments, using predicate negation with an existential (or NPI), as in: *He something not+ saw* / *He didn't see anything*.

Gen 17 17 of our 18 languages present quantifiers built from the same roots as interrogatives. In Wolof interrogatives have a dedicated root but share class prefixes with other D-quantifiers.

The derived quantifiers seem to be of two types: one, illustrated by Greek and English *whoever, whatever*, etc. has a universal interpretation. The other, illustrated by Japanese, builds existential QNPs: *Dare?* 'Who?', *Dare ka* 'Someone'. Telugu and Russian have both types.

Gen 18 15 of the 18 languages present type (2) quantifiers, illustrated in *Different people like different things*.

Data are lacking for Finnish, Greek, and Wolof; again, this generalization might hold for all 18 languages in our sample.

Gen 19 14 of our 18 languages present rate phrases (*twice a day, 100 kilometers per hour*). We suspect that all Ls have such phrases, but we lack confirming data from Finnish, Japanese, Pima and Wolof.

Gen 20 In our sample the simplest partitives are usually syntactically complex.

Japanese and Finnish have a lexical *which of the two?*. English *both* and *neither* are lexical partitives, denoting the same functions as *each/none of the two*. Italian, German, Russian and Finnish (below: Suihkonen 2007:59) have a *both*:

- (1) Molemma+t lapse+t halus+i+vat lähte+ä koti+in
 both+pl.nom child+pl.nom want+past+3pl go+1inf home+sg.ill
Both children wanted to go home

We have not explicitly elicited BOTH, NEITHER or WHICH OF THE TWO so their distribution may be wider than we indicate here.

Gen 21 14 of our 18 languages allow at least one quantifier to float. Garifuna, Telugu, W. Armenian basically don't allow floating. In Basque quantifier float is limited. We lack the relevant data for Finnish.

The most common type of floating is of universals from the subject. But Russian, Japanese, Pima, Hebrew and Mandarin allow some floating of numerals, and Japanese, Pima, Mandarin and German allow some objects to host floating.

Gen 22 11 of our 18 languages allow quantifiers with exception phrases. We illustrate with Finnish (Suihkonen 2007:91):

- (2) Kaikki paitsi viisi matkustaja+a
 all+pl.nom except five passenger+sg.partitive
All but five of the passengers

We have not sought constituency tests for the Quantifier + Exception Phrase and in a few cases the exception phrase is not adjacent to the quantifier.

Gen 23 Quantifiers as Bare Predicates arise in Ss like **The boys who passed were five*. 11 of our Ls present such quantifier predicates: Adyghe, Basque, German, Hebrew, Hungarian, Italian, Malagasy, Mandarin, Russian, Pima and W. Armenian.

Most often only cardinal Qs (*ten*) or value judgment cardinals (*many*) are used predicatively. German and W. Armenian seem restricted to value judgment cardinals; Italian and Russian allow some proportionality quantifier predicates, and Adyghe seems to allow most D-quantifiers as predicates. Telugu and English do not generally allow predicate quantifiers. We lack the relevant data on Garifuna, Finnish, Japanese, Wolof and Greek.

Gen 24 15 of our 18 Ls have analogs of distributive numerals. In 10, distributive numerals have special morphological marking (Adyghe, Basque, Garifuna, Hungarian, Japanese, Malagasy, Pima, Telugu, and W. Armenian). At least six more have syntactic exponents of distributivity in NPs with numerals, employing either an equivalent of binominal *each* (English, Greek, Hebrew, Italian, and Russian) or a specialized distributivity marker (German *je*, Russian *po*).

Gen 25 10 of the Ls in our sample present Boolos Sentences

Boolos sentences (Boolos 1981) are ones of the form ‘For every A there is a B.’ (A,B disjoint one place predicates). Two of his examples are: *For every philosopher that has studied Spinoza thoroughly, there is one that hasn’t even read the Ethics*; and, more cutely, *For every drop of rain that falls, a flower grows*. Boolos notes that these Ss are equivalent to the claim that there is a one to one function from the As into the Bs, that is, the set of objects with property B is at least as large as the set with A, and such comparative cardinality Ss are known not to be definable in first order logic (Boolos gives a short classical proof).

Boolos Ss, not mentioned in the Quantifier Questionnaire, arose in response to the expression of *indexing* by the universal quantifier in Ss like *More people buy Toyotas every year*. *Every year* provides an index set for people who buy

Toyotas. That is, the interpretation of the S treats *people who buy Toyotas* as a function F mapping years y to the number of people who bought Toyotas in y. The S is true iff whenever a year y was prior to a year y' then $F(y) < F(y')$. At least eight of our Ls (Adyghe, Basque, English, Hebrew, Malagasy, Mandarin, Russian, and Telugu) present such indexing uses. And in Adyghe, Basque and English the universal quantifier cannot be sensibly replaced with a non-universal one. Is this a new use of the universal quantifier?

And the eight languages with indexing plus Garifuna, Italian and W. Armenian all presented Boolos Sentences. For the other Ls in our sample we lack the relevant data on indexing and Boolos Ss.

18.2 Remarks on Selected Topics

We conclude with a few topics of general interest but for which our data do not provide a basis for a strong generalization – not more than half of our Ls have the relevant property.

Binominal *Each* (Safir and Stowell 1988, Zimmermann 2002) as in *The TAs graded sixty exams each*. 7 of our 18 languages have a comparable item, which may fail to be a D-quantifier. It forces a distributive reading. The languages are: Adyghe, Hebrew, Italian, Mandarin, Japanese, Russian and English.

Existential *There* Sentences (ETSs) are ones used to assert, query or deny the existence or number of objects with a certain property and which are lexically or syntactically distinct from simple declarative sentences. Only 15 of our languages present ETSs; Adyghe, Japanese, and Russian lack dedicated existential constructions. Ls with ETSs that exhibit a ‘definiteness effect’ (= disallowing universals as pivots) are Wolof, English, Finnish, Malagasy, Mandarin, Basque, Greek and Hungarian. (Greek is complicated as it has three ETSs with somewhat different properties, but one of them does show a definiteness effect). Languages with ETSs but without a definiteness effect, allowing some universal DNPs as pivots, are: German, Garifuna, Hebrew (minor definiteness effect), Italian, Pima, Telugu (marginal definiteness effect), W. Armenian.

This variability supports that attempts to distinguish ‘strong’ from ‘weak’ QNPs on the basis of occurrence in ETSs are not reliable cross-linguistically.

Open Issues (1) The languages studied here do not in general present quantificational expressions properly within the verbal morphology (though the Questionnaire included such examples from Kalaallisut (Eskimo-Aleut; Bittner and Trondhjem 2008:42), Mayali (Evans 1995:209) and Passamaquoddy (Bruening 2008:97). Examples (156) from Adyghe and (23) from Russian are our best (but lone) counterexamples to this claim. (2) We did not elicit data on *ordinals* – *the tenth*, etc. Sometimes they show up with universals, as in *Every second dog was inoculated*. (3) A deeper topic ignored here is *anaphoric determiners*, as in: *Some*

students hold a job while in school. *Such* students should be awarded scholarships. And a second, elliptical, type: *Fairly many* students attended the first lecture but *many fewer* / *hardly any* attended the second. (4) We studied A-quantifiers expressing frequency but not duration: *He has been ill all week*, *He missed class three days in a row*, etc. (5) How true is it cross-linguistically that modified numerals in object position favor object narrow scope readings? Here this is asserted for Basque, English and Italian but denied for Adyghe.

Lastly, how representative of languages in general is our sample? We can not generalize from 18 languages to the 5,000–8,000 extant languages. Our hope of course is that others will check our generalizations to see how well they hold or can be modified for other languages. For example, limiting ourselves to our data we could give a somewhat more precise formulation of Gil's Generalization:

Gil's Generalization reformulated: All Ls form some A-quantifiers productively from D-quantifiers, but no L forms D-quantifiers productively from A-quantifiers.

Much of our data cited above supports this form of Gil's Generalization, especially data on intersective and proportionality quantifiers. Our best candidate for a counterexample to the second conjunct above is an Adverb to Quantifier 'back formation': *a frequent visitor*, *an occasional sailor*, Russian *každodnevnyj ritual* 'everyday ritual', from *každyj den'* 'every day', etc. We note that Bittner (1995) exhibits for Greenlandic Eskimo a variety of pairs of D- and A-quantifiers where each is derived from a common stem with different suffixes. So in these cases D- and A-quantifiers seem symmetrically related, neither being derived from the other. But nothing rules out that there might be other processes, like [D- times], deriving A-quantifiers from D-ones.

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