

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 = emphasizer, 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 Ziroo 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 *haikiryoo 3000cc* ‘displacement 3000cc’, and the resulting phrases can modify an NP as in *nagasa 3m no turizao* ‘a 3m fishing rod’ and *haikiryoo 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. Tetsuya 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 kizutokeru.
 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 kenkyuusyo no menbaa no suu-nin ni*
 Taroo TOP that laboratory GEN member GEN several-CL DAT
zibun no ronbun o okutta.
 self GEN paper ACC sent
 ‘Taroo sent his paper to several of that laboratory’s members.’
- b. *Taroo wa ano kenkyuusyo no menbaa no tasuu ni zibun*
 Taroo TOP that laboratory GEN member GEN many DAT self
no ronbun o okutta.
 GEN paper ACC sent
 ‘Taroo sent his paper to many of that laboratory’s members.’
- c. *Taroo wa ano kenkyuusyo no menbaa no dare ka ni*
 Taroo TOP that laboratory GEN member GEN who P DAT
zibun no ronbun o okutta.
 self GEN paper ACC sent
 ‘Taroo sent his paper to one of that laboratory’s members.’
- d. *Taroo wa ano kenkyuusyo no menbaa no zen-in ni*
 Taroo TOP that laboratory GEN member GEN all-member DAT
zibun no ronbun o okutta.
 self GEN paper ACC sent
 ‘Taroo sent his paper to all of that laboratory’s members.’
- e. *Taroo wa ano kenkyuusyo no menbaa no subete ni zibun*
 Taroo TOP that laboratory GEN member GEN all DAT self
no ronbun o okutta.
 GEN paper ACC sent
 ‘Taroo 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
sagyooin o / sagyooin go-nin o / sagyooin 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*
 A class GEN student and B class GEN student all NOM A
gumi no gakusei to B gumi no gakusei ga subete} kita.
 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*
 government TOP Mitsui:related GEN bank and Resona:related
no ginkoo zen-bu o | Mituikei no ginkoo to
 GEN bank all-CL ACC Mitsui:related GEN bank and
Risonakei no ginkoo o zen-bu} enzyosita.
 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 class GEN student or B class GEN student several-CL NOM
A gumi no gakusei ka B gumi no gakusei ga suu-nin}
 A class GEN student or B class GEN student NOM several-CL
 kita.
 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*
 government TOP Mitsui:related GEN bank or Resona:related
no ginkoo san-sya o | Mituikei no ginkoo ka
 GEN bank three-CL ACC Mitsui:related GEN bank or
Risonakei no ginkoo o san-sya} enzyosita.
 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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