Chapter 13
Pima Quantifiers

Marcus Smith

13.1 Introduction

This chapter discusses quantification in Pima, a Uto-Aztecan language spoken in central and southern Arizona.[1] It is mutually intelligible with the better studied dialect Tohono 'O'odham (Zepeda, 1983). Few studies of quantification in this language have been undertaken, the most readily available being the description of quantifier float in Munro (1984).

Before describing the quantifier patterns, some basic familiarity with the language is necessary. Pima is a quintessential 'non-configurational' language. Indeed, its sister dialect Tohono 'O'odham was one of the original languages used by Hale (1982) and Jelinek (1984) to argue for this class of languages. I point this out, not to make a claim about the proper theoretical analysis of the data to come, but to give some typological expectation of the patterns to be encountered. All six logical permutations of subject, object, and verb are possible, with interpretive differences (if any) lying largely in the information structure (Hale, 1992; Payne, 1992). The sentences in (1) are adaptations of those given by Hale (1992) for a different dialect. Flexibility of word order extends into the major constituents, so both possessor-possessum and possessum-possessor orders occur (2, 3). Also, both prepositional and postpositional structures are possible for the same adposition (8, 9). (In some cases, adpositions split the object phrase, creating a kind of 'impositional' structure.) There appears to be little to no effect on relative scope

[1] I'd like to thank my Pima language consultant, Virgil Lewis, for sharing his language with me. Any mistake in here is my own fault. I also think Pam Munro, Jena Barchas-Lichtenstein, Edward Keenan, and other regular attendants of the American Indian Seminar at UCLA for helpful comments and suggestions. The orthography used here was developed by the Pima Working Group at UCLA.

M. Smith (✉)
Department of Linguistics, University of California, Los Angeles, CA 90095, USA
e-mail: marcus.anthony.smith@gmail.com

E.L. Keenan, D. Paperno (eds.), *Handbook of Quantifiers in Natural Language*,
Studies in Linguistics and Philosophy 90, DOI 10.1007/978-94-007-2681-9_13,

or binding possibilities based on different orderings of the major syntactic constituents. This flexibility among the lexical constituents is not reflected as strongly in the functional constituents, where the ordering of elements is more strict. The most consistent word order pattern is the presence of a second position auxiliary, which encodes subject agreement, aspect, and modality. Only constituents can appear in pre-auxiliary position. The second position pattern can be seen in each permutation in (1).[2]

(1) a. Vakial 'o heg vipsilo ha-cecposid (SOV)
cowboy aux det p,calf 3p-p,brand
'The cowboy is branding the calves.'
b. Vipsilo 'o ha-cecposid heg vakial. (OVS)
c. Ha-cecposid 'o heg vakial heg vipsilo. (VSO)
d. Vipsilo 'o heg vakial ha-cecposid. (OSV)
e. Ha-cecposid 'o heg vipsilo heg vakial. (VOS)
f. Vakial 'o ha-cecposide heg vipsilo. (SVO)

(2) a. heg John kalit
det John car
'John's car'

b. heg kalit-aj heg John
det car-3poss det John
'John's car'

Null anaphora is pervasive: independent pronouns are optional as arguments of a verb, possessors, and objects of adpositions.[3] It is not uncommon for a sentence in a narrative to lack any nouns whatsoever. Person and number (to a lesser extent) are usually recoverable via agreement morphemes found on the auxiliary and verb (compare 3 against 1), possessum (4 against 2), and adposition (5).

[2] The following abbreviations are used in this paper: 1 – first person, 2 – second person, 3 – third person, adj – adjective, ana – anaphor, aux – auxiliary, c – complementizer, cop – copula, cont – continuous, det – determiner, dist – distributive, dub – dubitative modal, fr – deictic particle 'away from center', gfr – greater distal deictic, hab – habitual, hrsy – hearsay evidential, inc – inceptive, intr – introducer, ints – intensifier, irr – irrealis, nr – deictic particle 'towards' center, p – plural, part – partitive, pf – perfective, pos – possessor, prt – particle, pst – past, s – singular, q – polar question marker, stat – stative, unposs – unpossessed object. When an abbreviation is set off by a comma, it is morphologically represented by reduplication. The glossing of perfective on verbs is put in parenthesis to represent truncation or suppletion. Verbs that are unmarked for aspect are imperfective.

[3] Independent pronouns are virtually non-existent as a possessor in natural discourse. Under elicitation, my consultant judges the structures as grammatical, but 'why would you want to [say that]?'

(3) ha-cecposid 'a-ñ
3p-p,brand aux-1s
'I am branding them.'

(4) heg kalit-aj
det car-3poss
'his/her car'

(5) heñ-wui
1s-to
'to me'

13.2 Quick Overview of Quantifier Patterns

13.2.1 Overview of D-Quantifiers

The d-quantifiers in Pima are not determiners; they are adnominal expressions that may occur within the determiner phrase. The form of the DP is strongly influenced by where in the larger syntactic structure the phrase appears. There are four elements that distribute as determiners: the demonstratives *'iida* 'this' and *hega'i* 'that', a specific indefinite (with some unclear semantic issues) *ge*, and a 'default' determiner *heg*. While the first three determiners appear according to the meaning, the presence or absence of *heg* appears to be mostly determined by syntactic position.[4] *Heg* is used when the DP is not in certain syntactic configurations, including sentence initial, before a selecting adposition, before a selecting possessum, and when serving as a main or secondary predicate. In most other cases, *heg* is required to be present. There is no apparent change to the meaning regardless of whether or not *heg* is present (Hale, Jeanne, and Platero, 1977; Fitzgerald, 1994).

(6) **Keli** 'a-t 'am hii
man aux-pf fr see(pf)
'The man went there.'

(7) M-a-t hii **heg** **keli**
fr-aux-pf see(pf) det man
'The man went there.'

[4] Fitzgerald (1994) argues the distribution is based on the prosody of the sentence rather than syntactic positioning. While there is much to recommend this analysis, there are additional complexities she did not consider that need a syntactic analysis.

(8) **Kii** 'amjed:
house from
'from the house'

(9) 'amjed **heg** **kii**
from det house
'from the house'

Definite, indefinite, and generic DPs are not morphosyntactically well-differentiated. Generics must be plural, but that appears to be the sole restriction placed on one of the three but not the others (10, 11). The addition of demonstratives or quantifiers can make definiteness or indefiniteness more explicit, but there are no words or patterns to explicitly mark generics. In all three types of DP, the determiner *heg* can used if the word order allows it.

(10) Gogogs 'o totot k
p,dog aux p,bark
'The dogs are barking.', 'Some dogs are barking.', 'Dogs bark.'

(11) Gogs 'o totk
dog aux bark
'The dog is barking.', 'A dog is barking.', *'Dogs bark.'

This means that in negative sentences, a simple DP can be definite and scope out, or indefinite and (possibly) scope under negation.

(12) Pi 'a-ñ ha-ñeid heg 'u''uhig
not aux-1s 3p-see det p,bird
'I don't see the birds.', 'I don't see any birds.'

D-quantifiers are usually added into the DP before the noun and after a determiner, if any (10). This changes in partitives, which will be discussed below (Section 13.6.4). However, the language prefers to float quantifiers whenever possible (13, 14). The lack of *heg* in a wide range of cases and the frequency of floating means that it is rare to see a d-quantifier clearly in the middle of a determiner phrase.

(13) Suzanne 'a-t 'am 'i ha-gi'ig **heg** **gook** **'i'iks**
Suzanne aux-pf fr inc 3p-shake(pf) det two p,blanket
'Suzanne shook (the) two blankets.'

(14) Suzanne 'a-t 'am **gook** 'i ha-gi'ig **heg** **'i'iks**
Suzanne aux-pf fr two inc 3p-shake(pf) det p,blanket
'Suzanne shook (the) two blankets.'

13.2.2 Overview of A-Quantifiers

A-quantifiers function as adverbs, generally appearing before the verb, but with significant flexibility. (15) shows a typical pattern. (16) shows an adverb fronted before the auxiliary.

(15) Gogogs 'o **gokko** tototk
p,dog aux twice p,bark
'The dogs barked twice.'

(16) **Shel** 'a-ñ hem-veehejed: hihidod:
always aux-1s 2s-for cook
'I always cook for you.'

13.3 Existential Quantifiers

13.3.1 Existential D-Quantifiers

Momentarily setting aside the indefinite pronouns, there are four words with existential semantics: *hema* 'one, a, some (singular)', *ha'i* 'some (plural)', *mu'i* 'many', and the specific indefinite *ge*. The first three distribute like standard d-quantifiers, the last more like a determiner. For the examples below, recall that the default determiner *heg* is missing from sentence initial contexts.

(17) **Hema** gogs 'o totk
a dog aux bark
'A dog is barking.'

(18) **Ha'i** gogogs 'o tototk
some(p) p,dog aux p,bark
'Some dogs are barking.'

(19) **Mu'i** gogogs 'o tototk
many p,dog aux p,bark
'Many dogs are barking.'

The most frequently encountered context for *ge* is to introduce unique and significant individuals into a narrative.

(20) Gam-hu sha'i na'a m-a-sh **ge** **ce'ul** 'am o hebii keek
gfr-far intns extent c-aux-hrsy certain willow fr irr where stand
'Long ago, where there stood a willow tree,...'

13.3.1.1 Cardinal Quantifiers

The native monomorphemic cardinal quantifiers cover the numbers from 'one' to 'nine'. The words *siant* 'hundred' and *miil* 'thousand' are borrowed from Spanish. The word for 'ten', *vest-maam*, is derived from the phrase *vees maam* 'all fingers'. Multiples of tens, hundreds, and thousands, are expressed using the frequentative form of a number (= frequency adverb, see Section 13.3.2), and the ones place is added using *gami*, a shortened form of the distal locative adverb *gama'i* 'over there'.

(21) gokko vest-maam gami gook
twice ten over.there two
'twenty-two' (lit: 'twice ten [and] two over there')

13.3.1.2 Indefinite Pronouns

Counting interrogatives as a type of indefinite, the indefinite pronouns come in three parallel sets (Table 13.1). The exact syntactico-semantic distinctions between the sets are unclear at times, but there are some generalizations to be made. The two sets that occur in declarative sentences seems to correlate best with specificity, or identifiability. I therefore refer to them as the specific and non-specific indefinite pronouns. The non-specific indefinite pronouns can also be used as alternatives to the interrogative pronouns in constituent questions (Section 13.3.1.3).

Consider the following two cases. Both are existential questions, differing only in which set the indefinite pronoun is drawn from. There may be a greater suggestion that one could identify the individual in (22) but not (23); but this is not strictly necessary. (It is not at all clear whether the difference in the English translations reflects the same difference in the Pima.)

Table 13.1 Some indefinite pronouns in Pima

	Specific	Non-specific	Interrogative
Someone, who	hema	hed:a'i	doo
Something, what	hema, ha'icu	has, hascu	sha, shacu
Somewhere, where	hasko	heba'i	baa
Sometime, when	hekid	hekid	hekid

(22) No ’am **hema** ha’icug kii c-’ed:?
q-aux fr someone exist house unposs-in
‘Is there someone in the house?’

(23) No ’am **hed:a’i** ha’icug kii c-’ed:?
q-aux fr someone exist house unposs-in
‘Is there anybody in the house?’

The two sets are also used differently depending on the polarity of the sentence. In affirmative assertions, the specific set tends to be used (24), while in negative assertions the non-specific is used (25). Again, this is a tendency, not an absolute rule. The exact reasons for the choice between indefinite types are as yet unclear.

(24) M-o **hema** ha’icug kii c-’ed:
fr-aux someone exist house unposs-in
‘There is someone in the house.’

(25) Pi ’am-hu **hed:a’i** ha’icug kii c-’ed:
not fr-far someone exist house unposs-in
‘There isn’t anybody in the house.’

13.3.1.3 Interrogatives

As mentioned above, interrogatives come in two sets: the wh-words and the non-specific indefinites. The choice of which to use appears to be largely syntactic. Wh-words are obligatorily fronted to sentence initial position. In such cases, the second position auxiliary usually encliticizes to the wh-word (26, 27).

(26) **Doo**-p-t naam?
who-2s-pf meet
‘Who did you meet?’

(27) **Baa**-t hii heg Rebecca?
where-pf go(pf) det Rebecca
‘Where did Rebecca go?’

The non-specific pronouns are used when the constituent is not fronted. They may occur sentence initially, but they are not moved there by obligatory wh-movement. The most common occurrence of a non-specific pronoun as

interrogative is when wh-movement is blocked. In one common pattern, the pre-auxiliary position is filled by a complementizer *ku-*, which serves to connect the sentence to the broader discourse. In such a case, there is no empty initial position to move a wh-pronoun into, so the indefinite is used (28). Similarly, in embedded questions the initial position is filled with a complementizer, so the indefinite appears in-situ (29). Movement is blocked when part of a conjunction (30). Echo questions (31) and multiple wh-questions (32) also appear to lack wh-movement, though these patterns are less well understood.[5]

(28) Ku-s **hascu** ha-nolav heg Melissa
c-dub something 3p-buy(pf) det Melissa
'I wonder what Melissa bought.'

(29) S-maac 'a-ñ m-a-p **hed:a'i** ñeid tako
stat-know aux-1s c-aux-2s someone see yesterday
'I know who you saw yesterday.'

(30) Jason c **hed:a'i** 'am heñ-ñeid?
Jason and someone fr 1s-see
'Jason and who see me?'

(31) **Hed:a'i** ha-nolav heg komkjed:
someone 3p-buy(pf) det turtle
'Who bought a turtle?'

(32) **Hascu** **hed:a'i** ha-'ees?
something someone 3p-steal(pf)
'Who stole what?'

If there is a difference in meaning between questions with wh-pronouns and non-specific indefinite pronouns, it is one of how the questioned constituent relates to the broader discourse, not the semantics of the question form itself. The following pairs of examples are reported to be synonymous.[6]

(33) **Doo-**t o mua heg kooji?
who-pf irr kill det pig
'Who will kill the pig?'

[5] The ha- clitics in examples (28), (31), and (32) are impersonal 'them', filling in for the source role of the verb 'buy' or 'steal'.

[6] The expressions for 'why' in (35) and (36) are derived from the phrase 'saying what'. The variation seen regarding the presence or absence of final -c is as of yet not understood.

(34) Ku-t **hed:a'i** o mua heg kooji?
c-pf someone irr kill det pig
'Who will kill the pig?'

(35) **Shacu**-p-t **'aagc** o mua heg kooji?
what-2s-pf saying irr kill det pig
'Why are you going to kill the pig?'

(36) Ku-p-t **hascu** **'aag** o mua heg kooji?
c-2s-pf what saying irr kill det pig
'Why are you going to kill the pig?'

13.3.2 Existential A-Quantifiers

There are three existential a-quantifiers that are not productively constructed: *hekid* 'some time', *hebicuc* 'sometimes', and *hemho* 'once'. All others are derived. 'Never' is produced by negating *hekid* 'some time'.

(37) **Pi** 'a-ñ **hekid** hoohid heg John.
not aux-1s some.time like det John
'I never liked John.'

Frequency adverbs are derived by suffixing *-ko* to a d-quantifier, e.g., *gokko* 'twice' (< *gook* 'two') and *vaikko* 'thrice' (< *vaik* 'three'). This pattern is fully productive. Even syntactically complex numbers can take the *-ko* suffix, e.g., *gokko vest-maam gami vaikko* 'twenty-three times' (< *gokko vest-maam gami vaik* 'twenty-three, lit. twice ten over there three'). Non-numerals also feed the pattern: *mu'iko* 'many times' (< *mu'i* 'many').

13.4 Universal Quantifiers

13.4.1 Universal D-Quantifiers

There is only a single universal d-quantifer, *vees* 'all'. It can be used with either a singular or plural restriction. If used with a singular, it quantifies over the totality of the object (38); if used with a plural, it quantifies over members of the set (39). The number of the object in the following examples can be seen from the agreement morphology on the verb.

(38) **Vees** huu 'a-t **heg** **pas-tiil**.
all eat(pf) aux-pf det pie
'He ate the whole pie.'

(39) **Vees** ha-huu 'a-t **heg** **pas-tiil**.
all 3p-eat(pf) aux-pf det pie
'He ate all the pies.'

The restriction can also be a coordinated expression, in which case the range covers all members of each conjunct. So, in the following example, every man, woman, and child vacated the city; nobody remained.

(40) **Vees kekel, 'o'oki, c 'a'al** 'a-t daagto heg kiihim.
all p,man p,woman and p,child aux-pf leave det town
'All men, women, and children left the city.'

Non-specific indefinite pronouns can receive a universal interpretation when the head of a free relative clause. The relative clauses in the following examples begin with *m-*, the complementizing proclitic to the auxiliary. The non-specific indefinite pronouns are in the first position syntactically available, given that the auxiliary has to be the second constituent and the complementizer takes the first position.

(41) 'Am g cindat m-a-p **hed:a'i** ñeid!
fr imper kiss c-aux-2s someone see
'Kiss whoever you see!'

(42) 'Am g ha-nolav m-a-p **hascu** 'i-tatcua!
fr imper 3p-buy(pf) c-aux-2s something inc-want
'Buy whatever you want!'

13.4.2 Universal A-Quantifiers

Just as there is only a single universal d-quantifier, but universal interpretations can be assigned to other constructions, so it is also with the a-quantifiers. The single universal a-quantifier is *shel* 'always'. Like the English translation, this word is frequently used hyperbolically, so that translating it as 'most of the time' or 'often' more accurately reflects the real usage.

(43) **Shel** 'a-ñ ha'icu s-maac.
always aux-1s something stat-know
'I always know something.'

(44) **Shel** 'a-ñ 'absh 'am 'i-keishpa.
always aux-1s just fr inc-walk
'I always just walk.'

Other universals can be built from the indefinite *hekid* 'some time'. This can either be done through prefixing with *vees* 'all' or *cum* 'any'. Both phrases seem to have the same meaning as *shel* 'always', though it is likely subtler shades of meaning could come to light with further research.

(45) **Cum** **hekid** 'a-ñ ha'icu s-maac.
any some.time aux-1s something stat-know
'I always know something.'

(46) **Vees** **hekid** 'a-ñ ha'icu s-maac.
all some.time aux-1s something stat-know
'I always know something.'

Clauses can get a universal reading if the verb is in the habitual with no temporal adverbs. The first sentence below (47) shows a sentence with an implied specific time reference, the second (48) a more universal reading. This universal interpretation is an implicature, though, not an entailment, as can be seen in (49), where a temporal adverb cancels the implicature.

(47) Heñ-**hiksh** 'a-ñ m-a-n-t 'am heñ-hihiviu.
1s-cut aux-1s c-aux-1s-pf fr 1s-shave(pf)
'I cut/was cutting myself when I shaved.'

(48) Heñ-**hikkash** 'a-ñ m-a-ñ 'am heñ-hihivium.
1s-cut(hab) aux-1s c-aux-1s fr 1s-shave
'I (always) cut myself when I shave.'

(49) **Hebicuc** 'a-ñ heñ-**hikkash** m-a-ñ 'am heñ-hihivium.
sometimes aux-1s 1s-cut(hab) c-aux-1s fr 1s-shave
'Sometimes I cut myself when I shave.'

13.5 Proportional Quantification

13.5.1 Proportional D-Quantifiers

Pima has no monomorphemic proportional d-quantifiers. It does, however, have an idiomatic expression *'ed:a hukkam* 'half', literally 'within the edge'. This expression distributes like a partitive d-quantifier (50), except that it has not been observed to float. (Grammaticality judgments on floating of *'ed:a hukkam* are not available.) Note that if one uses a non-partitive construction (see Section 13.6.4 for details), 'half' appears to modify the type of individual, rather than the quantity, even if that meaning does not make much sense (51).

(50) **'Ed:a** **hukkam** **heg** **'a'al** 'a-t 'am ñei.
inside edge det p,child aux-pf fr sing(pf)
'Half of the children sang.'

(51) #**'Ed:a** **hukkam** **'a'al** 'a-t 'am ñei.
inside edge p,child aux-pf fr sing(pf)
'The half-children sang.'

13.5.2 Proportional A-Quantifiers

There are no basic proportional a-quantifiers in the language. Proportional interpretations are generally created productively through modification of the universal and existential quantifiers. There is one idiomatic expression composed of a complementizer and particle, *ku-...hiva*, that together are interpreted as 'usually'.

(52) **Ku**-ñ **hiva** 'ii'e heg kavhii sisalmad.
c-1s prt drink det coffee p,morning
'I usually drink coffee in the morning.'

(53) **Ku**-p **hiva** memd:a Cuk-shon wui.
c-2s prt drive Tuscon to
'You usually drive to Tuscon.'

13.6 Complex Quantifiers

Pima productively constructs complex quantificational phrases based around the core quantifiers.

13.6.1 Approximate Values

The most straightforward cases of complex quantifier constructions involve adding an adverb to slightly modify the value. *Sha* 'about' indicates that the value expressed next is an approximate figure (54). *Cemalo* 'almost' means that the quantity falls just short of expectation (55).

(54) **Sha** **vees** 'a'al 'o ñe'e.
about all p,child aux sing
'Just about all children sing.'

(55) **Cemalo** **vest-maam** ‘a’al ’o ñe’e.
almost ten p,child aux sing
‘Almost ten children are singing.’

These same modifiers can be applied to a-quantifiers.

(56) **Cemalo** **shel** ’a-ñ memlicud cikpan wui.
almost always aux-1s drive(hab) work to
‘I almost always drive to work.’

(57) **Sha** **hebicuc** ’a-ñ memlicud cikpan wui.
about sometimes aux-1s drive(hab) work to
‘I mostly drive to work.’

Imprecise quantities can be intensified, for example with *si* ‘very’ (58). The more emphatic *shi* ‘very (emphatic)’ often carries judgmental undertones (59). The judgmental tone can be emphasized by further adding *’absh* ‘just’ (60).

(58) John ’a-t **si** **mu’i** hemajkam ha-wui ñe’o.
John aux-pf very many person 3p-to speak(pf)
‘John spoke to very many people.’

(59) John ’a-t **shi** **mu’i** hemajkam ha-wui ñe’o.
John aux-pf very(emph) many person 3p-to speak(pf)
‘John spoke to too many people.’

(60) John ’a-t **’absh** **si** **mu’i** hemajkam ha-wui ñe’o.
John aux-pf just very many person 3p-to speak(pf)
‘John spoke to too many people.’

Cum ‘any’ precedes non-specific indefinite pronouns, serving as a domain widener.

(61) Va-n-t o **cum** **hascu** ha-nolav.
fut-1s-pf irr any something 3p-buy
‘I’ll buy anything-at-all.’

(62) **Cum** **hebai** daash!
any somewhere put
‘Put it anywhere!’

13.6.2 Comparative Quantities

Quantities can be compared using the standard comparative construction. The comparative meaning 'more/greater than' is formed with the adposition *ba'ic* 'in front of' and the proximate locative proclitic *'i* (63). 'Less/fewer than' is expressed with *veeco* 'under'. Equality in the comparison is expressed with *maasma* 'like, the same as'. In all three subtypes, the standard of comparison is introduced with *mam* 'than'.

(63) Eric 'o **ba'ic** **'i-cuatk** **mam** **'aañi'i**.
Eric aux in.front pr-tall than I
'Eric is taller than I.'

The only feature unique to comparing quantities is that a quantifier or quantified noun is used. The compared value is usually given as *mu'i* 'many', though *ha'i* 'some (plural)' is also acceptable. The standard can be either a simple individual (64, 65, 67) or a quantified individual (66). Note that in (64) and (65) the entire complex quantifier expressions *ba'ic 'i-mu'i* 'more' and *maasma mu'i* 'as many as', respectively, have been floated from the restrictions. In (66) and (67), the entire construction, including the standard of comparison, may precede the auxiliary, indicating that it is one large constituent. That is, the particle *mam* 'than, as' is not a conjunction introducing a clause with ellision. If it were introducing a clause, the standard of comparison would have to be sentence final.

(64) Homer 'a-t **ba'ic** **'i-mu'i** ha-huu **heg** **pas-tiil** **mam**
Homer aux-pf in.front pr-many 3p-eat(pf) det pie than
'aapi.
you
'Homer ate more pies than you.'

(65) B-a-ñ 'ab sha'i **maasma** **mu'i** s-ha-maac **heg** **kekel**
nr-aux-1s nr at.all like many stat-3p-know det p,man
mam **heg** **'o'oki**.
than det p,woman
'I know just as many men as women.'

(66) **Ba'ic** **'i-mu'i** **mam** **hetasp** **hemajkam** 'a-t 'am dada.
in.front pr-many than five person aux-pf fr come(p)
'More than five people came.'

(67) **Ba'ic** **'i-mu'i** **heg** **kekel** **mam** **heg** **'o'oki** 'at 'ii
in.front pr-many det p,man than det p,woman aux-pf here
dada piasta wui.
come(p) party to
'More men than women came to the party.'

Maximum values can be given by using the negative to introduce the comparative construction, replacing the usual alternatives *ba'ic 'i* 'in front, more than' or *maasma* 'like, as'. This usually implies 'less than'.

(68) **Pi sha'i mu'i mam hetasp hemajkam** 'a-t 'am dada.
not at.all many than five person aux-pf fr come(p)
'Not as many as five people came.', 'Less than five people came.'

13.6.3 Boolean Compounds

There are few boolean compounds of quantifiers, though they do exist. Cases generally involve the negation of the quantifier with *pi* 'not'. Such boolean compounds are restricted to sentence initial position, and are among the few cases where word order and scope interact. In particular, note that negation is expressed twice in these examples, once with the quantifier and again following the auxiliary. This will be covered in depth in Section 13.7.8.

(69) **Pi vees-ij** heg 'a'al 'o pi hoohid heg John.
not all-part det p,child aux not like det John
'Not all of the children like John.'

(70) **Pi ha'i** kekel 'a-t pi 'am dada piasta wui.
not some p,man aux-pf not fr come(p) party to
'No men came to the party.'

Even though bare nouns can be interpreted as indefinite, they cannot be negated like a quantifier can. In such cases, the negation applies to the type of individual, not the quantity.

(71) **Pi hemajkam** 'a-t pi 'am dada piasta wui.
not person aux-pf not fr come(p) party to
'A non-person didn't come to the party.' (*'No person came to the party.')

13.6.4 Partitives

Partitives are distinguished by a change in word order and, with some quantifiers, an additional morpheme. While typically quantifiers occur between determiner and noun, in partitives the quantifier appears outside the determiner. *Vees* 'all', *mu'i* 'many', and *ha'i* 'some (plural)' also take the suffix *-(i)j*.[7] Recall that the default determiner is not expressed when it would otherwise be sentence initial; in partitives, since the determiner follows the quantifier, the determiner is present.

[7] Saxton, Saxton, and Enos (1983) suggest this suffix converts the quantifier into a pronoun.

(72) **Vees** **‘o’oki** ’o ’e-vaila.
all p,woman aux ana-dance
‘All women dance.’

(73) **Vees-ij** **heg** **‘o’oki** ’o ’e-vaila.
all-part det p,woman aux ana-dance
‘All of the women are dancing.’

Partitives can float, just like other quantifiers (74, 75). These cases are unambiguous where the quantifier takes a suffix, but otherwise they are ambiguous. *Mu’i* in (74) is unambiguously non-partitive, because the partitive form of the quantifier, *mu’ij*, can also float (75). A quantifier that does not have a distinct partitive form, such as *gook* ‘two’, does not provide any clues about partitivity when floated.

(74) **Mu’i** ’a-ñ ha-ñeid **heg** **ceceoj**.
many aux-1s 3p-see det p,boy
‘I see many boys.’

(75) **Mu’-ij** ’a-ñ ha-ñeid **heg** **ceceoj**.
many-part aux-1s 3p-see det p,boy
‘I see many of the boys.’

13.6.5 Exception Phrases

All exception phrases I have elicited have been built off of the partitive construction, though there may be other patterns available in the language. The exception phrase is introduced with *shaba* ‘but’, and appears at the end of the quantified expression. The entire phrase can be placed before the auxiliary, showing that the quantified expression and the exception phrase are a single constituent. Exception phrases can be added to expressions lacking a specified restriction (76) or one with an explicit restriction (77). That is, in (76) the larger group may or may not contain people that are not students, but in (77) everyone under consideration is a man.

(76) **Vees-ij** **shaba** **ga’i** **gook** **ha-mamshcamdam** ’a-t ’am ñei.
all-part but only two 3p-p,student aux-pf fr sing(pf)
‘All of them except two students sang.’

(77) **Vees-ij** **heg** **kekel** **shaba** **pi** **heg** **John** ’a-t ’am dada
all-part det p,man but not det John aux-pf fr came(p)
piasta wui.
party to
‘All of the men except John came to the party.’

13.6.6 Proportional Quantities

The only solid proportional quantity expression in the language appears to be the quantifier *'ed:a hukkam* 'half' (Section 13.5.1). Nevertheless, expressions referring to sub-quantities of a larger quantity can be expressed in a few different ways. Such constructions always indicate an exact number, not a mere proportion. That is, expressions like *gook heg vaik* 'two of three' refer to two objects out of three, and cannot be used for proportionally similar amounts like 'four of six' or 'twenty of thirty'.

Such expressions follow a partitive pattern containing two quantifiers. The numerator is the initial, partitive quantifier; and the denominator is expressed within the restricting determiner phrase.

(78)	**Gook**	**heg**	**vaik**	**pas-tiil**	**hikkmiaka**	'a-n-t	ha-huu.
	two	det	three	pie	p,slice	aux-1s-pf	3p-eat(pf)
	'I ate two of three pie slices.'						

Another strategy is to express the larger quantity via the adposition *amjed:* 'from, out of'. This adpositional phrase is attached to the end of the quantified expression.

(79)	**Veevkam**	**'a'al**	**'ab**	**vest-maam**	**'amjed:**	'a-t	'am	ñei.
	seven	p,child	nr	ten	from	aux-pf	fr	sing(pf)
	'Seven children out of ten sang.'							

13.7 Selected Topics

13.7.1 Type (2) Quantifiers

Type (2) quantifiers are possible in the language to the extent the vocabulary is present to create them. There is a specific word *go'ol* 'different' (80, 81), but no specific words for 'each' or 'same'. 'Same' is expressed using the demonstratives, thus are actually deictic references to a particular individual (82). There are no special constructions or patterns for this kind of quantification.[8]

(80)	Vees	ceceoj	'o	go'ol	'uvi	s-hoohid.
	all	p,boy	aux	different	girl	stat-like
	'All the boys like a different girl.'					

[8] The *s-* on *hoohid* 'like' in (80) is a positive polarity morpheme that attaches to certain lexically specified stative predicates. Earlier examples involving *hoohid*, such as (37) and (69), have been negative, so the s- was suppressed.

(81) Go'ol kiik c-'ed: 'o kii 'am kiihim c-'ed:.
different p,house unposs-in aux live fr town unposs-in
'They live in different houses in the town.'

(82) Vees-ij heg ceceoj 'o s-hoohid hega'i 'uvi.
all-part det p,boy aux stat-like that girl
'All of the boys like that (the same) girl.'

13.7.2 Distributive Numerals and Binominal Each

Pima lacks an equivalent of English 'each', but it has a distinct morphological distributive plural pattern used with quantifiers and nouns. While collective plurality is indicated by reduplication, distributive plurality is indicated by a form of 'double reduplication' (with a lot of complicating phonology, see examples in Table 13.2). While some quantifiers have distinct distributive forms, the extent of this pattern is still unknown.

Distributive forms of the cardinal quantifiers get translated as groups of the base value.

(83) **Go'ogok** **kekkel** 'a-t 'am dada.
two(dist) dist,man aux-pf fr come(p)
'The men came in pairs/twos.'

(84) **Vavaik** **kekkel** 'a-n-t 'am ha-naam.
three(dist) dist,man aux-1s-pf fr 3p-meet
'I met the men three at a time.'

The same meanings can be achieved using distributive adverbs. These are constructed by suffixing *-pa* to one of the cardinal numbers.

(85) Ha-mamshcamdam 'a-t **gook-pa** 'e-vaav.
3p-p,student aux-pf two-dist ana-line
'The students lined up in pairs/twos.'

Table 13.2 Examples of singular, collective, and distributive forms

	Singular	Collective	Distributive
Child	'ali	'a'al	'a''al
Pet	shoiga	shoshiga	shoshshiga
Chair	daikud:	dadaikud:	daddaikud:
Ear	naak	naank	naa'ank
Two		gook	go'ogok
Three		vaik	vavaik

13.7.3 Mass Quantifiers and Noun Classifiers

Vees 'all' and *'ed:a hukkam* 'half' can quantify either count or mass nouns (86, 87). Most if not all other quantifiers are strictly reserved for either count or mass. The three strictly mass quantifiers I am aware of are *he'es* 'how much' and the re-purposed adjectives *ge'e* 'big, a lot, much' and *al ha'as* 'little, a little'. All others quantify count nouns. For example, *mu'i* 'many' can modify a count noun (88), but not a mass noun (89). The correct way to express 'much' with a mass noun is with *ge'e* 'big, a lot, much' (90).

(86) vees kiiki
all p,house
'all houses'

(87) vees shuudagi
all water
'all the water'

(88) mu'i kiiki
many p,house
'many houses'

(89) *mu'i shuudagi
many water
'many/much water' (intended)

(90) ge'e shuudagi
big water
'a lot of water'

The language does not seem to have any noun classifiers, though there are plenty of container and measure words. These expressions immediately follow the quantifier. The container/measure word can float along with the quantifier (91–94). Container words are treated like count nouns and appear in the singular or plural form as appropriate (91, 92); measure words are treated like mass nouns and are singular (93, 94).

(91) John 'a-t **hetasp** **haha'a** ha-'ii **heg** **navait**.
John aux-pf five p,bottle 3p-drink(pf) det beer
'John drank five bottles of beer.'

(92) **Oreos** 'a-tt **gook** **kokstal** ha-nolav.
Oreos aux-1p:pf two p,bag 3p-buy(pf)
'We bought two bags of Oreos.'

(93) **Hetasp** **pisal** ’a-n-t ha-nolav **heg** **pilkañ**.
five pound aux-1s-pf 3p-buy(pf) det wheat
‘I bought five pounds of wheat.’

(94) **Gi’ig** **novi** **cev** ’a-t tatcua **heg** **vijna**.
four arm long aux-pf want det rope
‘I need four arm-lengths of rope.’

13.7.4 Existential Constructions

There are two common existential constructions. One is a typical intransitive sentence with one of a small number of existential verbs. The most semantically vague of these is *ha’icug* ‘exist’, but others include *shuudagi* ‘exist (liquid)’, *kuubs* ‘exist (smoke)’, and *kaac* ‘exist (lots of small particles)’. If the subject is inanimate, it is common to leave the verb implied (95), but a verb is almost always present with an animate subject (97). Often, the subject will take the determiner *ge* ‘a certain’, but this is not always the case.

(95) **Ge** **hahag** ’o ’am miish veeco **(ha’icug)**.
certain leaf aux fr table under exist
‘There is a leaf under the table.’

(96) **Ge** **‘o’od** ’o ’am kooba c-’ed: **kaac**.
certain sand aux fr cup unposs-in exist
‘There is sand in the cup.’

(97) **Gook** **kekel** ’o kii c-’ed: ***(ha’icug)**.
two p,man aux house unposs-in exist
‘There are two men in the house.’

The other pattern is to convert the noun denoting the individual into a predicate adjective (98). The noun is almost always in the plural form, though in some elicited examples the singular has been found. This construction always has a locative phrase in it, and there does not appear to be any subject.[9] That the denominal adjective is the predicate can be shown by affixing tense/aspect morphology to it (99).

(98) Kui veeco ’o **s-totobi-g**.
tree under aux stat-p,rabbit-adj
‘There are rabbits under the tree.’

[9] It is possible the locative phrase is the subject, but I am not aware of any syntactic tests that would decide the issue.

(99) Kui veeco 'o **s-totobi-g-kahim**.
tree under aux stat-p,rabbit-adj-pst:cont
'There used to be rabbits under the tree.'

The same derivational suffix is used to derive characteristic adjectives from nouns.

(100) **S-kui-g** 'o heg 'oid:ag.
stat-tree-adj aux det field
'The field is tree-y [full of trees].'

(101) **S-jevd:a-g** 'o heg cevho kii.
stat-dirt-adj aux det gopher house
'Gopher's house is dirt-y [made of dirt].'

Despite the adjectival morphology, the underlying nouns still behave as nouns in some respects: they can be quantified and they can antecede a pronoun (102, 103). In these constructions, the quantifier is in the typical quantifier float position before the predicate adjective.

(102) M-o **mu'i** **s-totobi-g** kui veeco. N-a-p ha-ñeid?
fr-aux many stat-p,rabbit-adj tree under q-aux-2s 3pl-see
'There are lots of rabbits under the tree. Do you see them?'

(103) M-o **vees** **s-totobi-g** kui veeco. N-a-p ha-ñeid?
fr-aux all stat-p,rabbit-adj tree under q-aux-2s 3pl-see
'All of the rabbits are under the tree. Do you see them?'

Both types of existential constructions behave like typical intransitive predicates. There are no significant differences regarding negation or question formation.

13.7.5 Floating Quantifiers

All d-quantifiers can be floated to pre-verbal position, forming a loose constituent with the verb, as discussed in depth by Munro (1984). The rules for resolving which noun the quantifier was floated from get complex, and the patterns exhibited by my consultant differ from those of Munro's consultant. It should be noted that Munro's consultant and mine were from different generations and different communities, so this is likely a dialectal difference. Indeed, it

seems likely that my consultant's dialect simply has stricter resolution rules, not a completely different set of them.

In the case of a simple transitive sentence, the floated quantifier is interpreted with the object.

(104) 'O'oki 'a-t **vees** 'i ha-daad:sh heg 'e-'a'al.
p,woman aux-pf all inc 3p-p,make.sit det ana-p,child
'The women sat all their children down.'
*'All the women sat their children down.'

Munro (1984) reports that her consultant would allow the quantifier to associate with the subject, if the object was semantically incompatible. For example, in a case where the quantifier requires a plural noun, but the object is singular, the quantifier can associate with a plural subject. My consultant rejects such sentences.

(105) %Hegam ceceoj 'o **vees** ñeid heg Alice.
those p,boy aux all see det Alice
'Those boys all saw Alice.' (intended)

Either object of a ditransitive verb can float a quantifier. There are differences between Munro's consultant and mine here as well, though there are also some telling similarities. The main difference is that Munro's consultant allowed both objects to float quantifiers at the same time. Both move to the standard pre-verbal position, and which object each quantifier is associated with is determined by linear precedence: the first quantifier quantifies over the first object, the second quantifier the second object. This is irrespective of which is the direct object or indirect object. Word order is free amongst arguments, so this is a pure linear order issue.

(106) Rina 'a-t **gook** **ha'i** ha-maa heg 'e-'o''ohan hegam
Rina aux-pf two some 3p-give(pf) det ana-p,book those
mamakai.
p,doctor
'Rina gave two of her books to some of the doctors.'

(107) Rina 'a-t **gook** **ha'i** ha-maa hegam mamakai heg 'e-'o''ohan.
Rina aux-pf two some 3p-give(pf) those p,doctor det ana-p,book
'Rina gave some of her books to two of the doctors.'

My consultant only permits one quantifier to be floated, but it can float from either object. There is a preference for the quantifier to modify the linearly closest object, but this is only a preference, not a requirement. Thus, though

there are different syntactic patterns between these two varieties of Pima, there appears to be a core similarity at work.

(108) Heñ-nawpuj 'a-t **ha'i** ha-maa hegam ceceoj heg 'o''ohan.
1s-p,friend aux-pf some 3p-give(pf) those p,boy det p,book
'My friends gave the books to some of the boys.' (preferred) or
'My friends gave some of the books to the boys.'

Munro reports that intransitive verbs allow quantifier float from their subject. She makes no reference to distinctions between different types of intransitive verb. With my consultant, whether or not floating is possible depends on the lexical class of the verb. There is a three way distinction: Unaccusative verbs allow float from the subject (109, 110). Verbs with incorporated objects allow float from that underlying object (111, 112).[10] Unergative verbs generally do not permit floating at all, though the data here are noisy: occasionally my consultant judged (113) and (114) as acceptable.

(109) Kekel 'a-t **gook** 'ii dada.
p,man aux-pf two here come(p)
'Two men arrived.'

(110) Gogogs 'a-t **gook** ko'ok.
p,dog aux-pf two die(p,pf)
'Two dogs died.'

(111) Kekel 'o **gook** kii-t.
p,man aux two house-make
'The men are building two houses.'

(112) 'O'oki 'o **gook** paan-t.
p,woman aux two bread-make
'The women are making two loaves of bread.'

(113) *Gogogs 'o **gook** totot k.
p,dog aux two p,bark
'Two dogs are barking.' (intended)

(114) *'A'al 'o **gook** shoañ.
p,child aux two cry
'Two children are crying.' (intended)

[10] Munro (1984) does not discuss this sort of verb, so it is unknown how her consultant would have interpreted them.

There is one further difference in floated quantifiers between the two consultants: Munro reports that quantifiers can be floated from possessors of objects. My consultant can only interpret such sentences with the quantifier modifying the object, not the object's possessor. In the following example, the object is singular and therefore not an acceptable restriction for *vees* 'all'. Munro's consultant accepted it, but mine does not.

(115) %**Vees** ñei 'a-n-t heg heñ-nawpuj ha-maakai-ga.
all see(pf) aux-1s-pf det 1s-p,friend 3p-doctor-poss
'I saw the doctor of all my friends.' (intended)

The patterns observed from Munro's consultant and my own differ in many crucial respects, but not in random ways. It appears that my consultant's variety has a reduced syntactic distribution of floated quantifiers by disallowing them in all contexts where the restriction is not a syntactic object in some sense. This extends into the intransitive domain, where arguments that are standardly accepted to be object-like (the subject of unaccusatives and incorporated nouns) permit floating, but arguments that are more subject-like (the subject of unergatives) do not.

13.7.6 Bare Quantifiers as Arguments

It is possible that all quantifiers can be used as bare arguments, though the data are not convincing. The issue is that virtually any argument can be zero pronominalized; thus it could be difficult if not impossible to determine if the quantifier is the sole element of the argument, or if it is modifying a silent pronoun. It is worth pointing out, though, that adjectives and postpositional phrases cannot be stranded by zero pronominalization. Thus, if quantifiers can be, the rules for zero pronominalization apply different to them than any other adnominal modification. The two examples below are about as clear evidence as you can find. Still, (116) could alternatively be analyzed as 'They are two women' (with quantifier float), and (117) could be 'She kissed them all' (with pro-drop):

(116) **Gook** 'o-d: 'o'oki.
two aux-cop p,woman
'Two are women.'

(117) M-a-t **vees** ha-cindat.
fr-aux-pf all 3p-kiss
'She kissed everyone.'

13.7.7 Bare Quantifiers as Predicates

In certain cases, a quantifier can serve as the main predicate. Cardinal numbers cannot serve as a predicate on their own. However, they are acceptable with the copula. This suggests they are functioning like a predicate nominal in these cases. Verbal, adjectival, and adpositional predicates do not co-occur with the copula.

(118) *'Iidam 'o **gook**.
these aux two
'They are two (in number).' (intended)

(119) 'Iidam 'o-d: **gook**. (Mark 16:12; Papago and Pima Translators, et al. 1975)
these aux-cop two
'They are two (in number).'

The partitive forms *veesij* 'all of', *ha'ij* 'some of', and *mu'ij* 'many of' can be predicates, but the non-partitive forms cannot. Evidence that they are predicates comes from the presence of tense/aspect morphology. (It is worth pointing out that quantifiers as main predicates have only been observed under direct elicitation. They have not been spontaneously produced.)

(120) Kui veeco 'o **mu'i-j-kahim** heg totobi.
tree under aux many-part-pst:cont det p,rabbit
'There were many rabbits under the tree.'

(121) Totobi 'o 'am **vees-ij-kahim** kui veeco.
p,rabbit aux fr all-part-pst:cont tree under
'All the rabbits were under the tree.'

Mu'ij 'many of' can serve as a predicate by itself (122). *Veesij* 'all of' is ungrammatical without a locative phrase (123 vs. 121). The acceptability of *ha'ij* 'some of' in such a context is unknown.

(122) Totobi 'o **mu'-ij**.
p,rabbit aux many-part
'The rabbits are many.'

(123) *Kekel 'o vees-ij.
p,man aux all-part
'The men are all.' (intended)

13.7.8 Scope Ambiguities

When more than one quantificational expression appears in a single clause, they can usually scope in either order. There is no correlation between scope and word order, part of speech, or floating status. There may be some preferences for one reading over another in certain environments, but these have not been successfully teased apart at this point.

(124) **Hema** ’ali ’a-t **vees** ha-ñeid heg ‘o’’ohan.
a child aux-pf all 3p-see det p,book
‘A child read all the books.’ (some > all, all > some)

(125) **Hema** ‘o’idam ’a-t **gook** ha-kokkeda heg huahi.
a hunter aux-pf two 3p-kill(p) det p,deer
‘A hunter killed two deer.’ (some > two, two > some)

While this is the general case, there are times when scope is judged to be unambiguous. It is not clear when or why this is true. In the following case (126), each hunter killed a separate deer. The reading where a single deer is killed by all the hunters collectively is reported to be impossible.

(126) **Vees-ij** heg ‘o’’idam ’a-t **hema** mua heg huai.
all-part det p,hunter aux-pf a kill det deer
‘All of the hunters killed a deer.’

Quantified subjects scope over or below sentential negation based on relative word order. When the quantifier is to the left of negation, it scopes over the negation (127). When the quantifier is to the right, negation scopes over it. This is regardless of whether the quantifier is floated (129) or not (128).

(127) **Hema** keli ’a-t **pi** ’am jivia piasta wui.
a man aux-pf not fr arrive party to
‘A man didn’t come to the party.’ (some > not)

(128) **Pi** ’a-t ’am jivia heg **hema** keli piasta wui.
not aux-pf fr arrive det a man party to
‘No man came to the party.’ (not > some)

(129) **Pi** ’a-t ’am **hema** jivia heg keli piasta wui.
not aux-pf fr a arrive det man party to
‘No man came to the party.’ (not > some)

If the quantified noun phrase needs to scope under negation, but needs to be to the left of it for discourse reasons, both the quantifier and the sentence are negated (130). The quantifier cannot be modified by negation if it is already under the scope of sentential negation (131).

(130) **Pi** **hema** keli 'a-t **pi** 'am jivia piasta wui.
not a man aux-pf not fr arrive party to
'No man came to the party.'

(131) ***Pi** 'at 'am jivia heg **pi** **hema** keli piasta wui.
not aux-pf fr arrive det not a man party to
'No man came to the party.' (intended)

Quantified objects are reported to be scope ambiguous when they occur before negation.

(132) **Hema** keli 'a-ñ **pi** ñeid.
a man aux-1s not see
'I didn't see a man.' (some > not, not > some)

There is still much work to be done before scope in Pima is understood, but the above gives some idea of the patterns observed thus far.

13.7.9 Only

The syntax and semantics of 'only' are not well understood at this point. There are two apparent morphemes that translate as 'only'. *'Absh* 'just, only' distributes as an adverb and restricts predicates. This includes verbal and nominal predication.

(133) 'Iiya 'a-c 'absh dad:he.
here aux-1p just p,sit
'We just sat here. (We did not do anything else.)'

(134) D-a-ñ 'absh 'o'odham.
cop-aux-1s just human
'I'm only human.'

Individuals are restricted via a series of words that all seem to include a suffix *-a'i*: *va'i*, *ma'i*, and *ga'i*. There may be others. These words are typically

found very close in front the verb. They can modify either the subject (135) or object (136, 137); and the noun modified can precede (137) or follow (136) the particle.

(135) Hega'i 'uvi 'o va'i cikpan.
that young.woman aux only work
'Only that young woman is working (nobody else).'

(136) M-a-ñ ga'i ñeid heg John.
fr-aux-1s only see det John
'I saw only John.'

(137) Pam 'a-ñ ma'i s-maac.
Pam aux-1s only stat-know
'I only know Pam.'

Ga'i 'only' is occasionally found at the beginning of a determiner phrase, before demonstratives (138) or quantifiers (139). The other two forms do not appear inside determiner phrases.

(138) ga'i hegam ceceoj
only those p,boy
'only those boys'

(139) ga'i hemako ceoj
only one boy
'only one boy'

The most obvious analysis of these forms would be so segment off the *-a'i* as meaning 'only', attaching to common adverbial particles: *va* a certain future, *'am* the 'behind' deictic, and *ge* the specific indefinite, respectively. This may be true; however, the words meaning 'only' appear at times in sentences were the particles would not normally be found, suggesting they may have an independent existence. For example, *ge* does not appear before demonstratives, but *ga'i* appears before one in (138); and the aspectual particle *va* only appears in futures and in certain modal contexts, but appears in an imperfective sentence in (135). The details of distribution have not been worked out yet.

There is no clear difference in meaning between any of these three forms. All three can modify a subject or an object (135 vs. 136). However, they are not interchangeable in all contexts. For example, *ga'i* and *ma'i* are judged interchangeable in (140) and (141), but *va'i* in the same context is unacceptable (142). The conditions governing the distribution are as yet unknown.

(140) Pam 'a-ñ ga'i s-maac.
Pam aux-1s only stat-know
'I only know Pam.'

(141) Pam 'a-ñ ma'i s-maac.
Pam aux-1s only stat-know
'I only know Pam.'

(142) *Pam 'a-ñ va'i s-maac.
Pam aux-1s only stat-know
'I only know Pam.' (intended)

13.8 Conclusion

The description of quantifiers in Pima presented in this paper is far from a complete accounting of the patterns in the language, but it shows that the topic is a rich one, with much still to explore. Nevertheless, it seems clear that quantification is complex and productive.

References

Fitzgerald, Colleen. 1994. Prosody drives the syntax. In *Proceedings of the twentieth annual meeting of the berkeley linguistic society*, eds. S. Gahl, A. Dolbey, and C. Johnson, 173–183. Berkeley, CA: Berkeley Linguistics Society.

Hale, Kenneth. 1982. Preliminary remarks on configurationality. In *NELS* 12, eds. James Pustejovsky and Peter Sells, 86–96. Amherst, MA: Graduate Linguistics Student Association.

Hale, Kenneth. 1992. Basic word order in two 'free word order' languages. In *Pragmatics of word order flexibility*, ed. Doris Payne, 63–82. Philadelphia, PA: John Benjamins Publishing Company.

Hale, Kenneth, LaVerne Jeanne, and Paul Platero. 1977. Three cases of overgeneration. In *Formal syntax*, eds. Peter Culicover, Thomas Wasow, and Adrian Akmajian, 379–416. New York, NY: Academic Press.

Jelinek, Eloise. 1984. Empty categories, case, and configurationality. *Natural Language and Linguistic Theory* 2(1):39–76.

Munro, Pamela. 1984. Floating quantifiers in Pima. In *The syntax of native American languages*, eds. Eung-Do Cook and Donna Gerdts, 269–287. New York, NY: Academic Press.

Papago and Pima Translators and the Wycliffe Bible Translators, Inc. 1975. Jiosh Wechij O'ohana. South Holland, IL: The World Home Bible League.

Payne, Doris. 1992. Nonidentifiable information and pragmatic order rules in 'O'odham. In *Pragmatics of word order flexibility*, ed. Doris Payne, 63–82. Philadelphia, PA: John Benjamins Publishing Company.

Saxton, Dean, Lucille Saxton, and Susie Enos. 1983. *Tohono O'odham/Pima to English, English to Tohono O'odham/Pima Dictionary*. Tucson, AZ: The University of Arizona Press.

Zepeda, Ofelia. 1983. *A Papago Grammar*. Tucson, AZ: The University of Arizona Press.