

AGENT FOCUS IN CHUJ REFLEXIVE CONSTRUCTIONS

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Table of Contents

1 Introduction	4
2 Chuj and the Mayan Family	4
3 Ergativity	6
4 Agent Focus	9
5 Puzzle: Reflexives	12
5.1 Strong Ban on AF	12
5.2 Weak Ban on AF	13
5.3 No Ban on AF	14
5.4 Summary of AF in Reflexive Constructions	16
6 Previous Accounts	17
6.1 Aissen (1999)	17
6.2 Stiebels (2006)	18
6.3 Coon, Mateo Pedro, and Preminger (2011)	20
7 Towards a Solution	21
7.1 Extending Stiebels (2006)	22
7.2 Extending Coon et al. (2011)	22
8 Conclusion	26
Abbreviations	26
References	26

1. Introduction

Two-thirds of Mayan languages make use of an “Agent Focus” (AF) morpheme, which is generally found in environments in which a transitive subject is focused, questioned, or relativized. Among the languages that have AF, however, there is great variation in how it is used.

In this thesis, I describe the contexts in which AF is found in the Mayan language Chuj, and I examine clauses with reflexive objects particularly closely. Although the topic of AF in reflexives clauses has been discussed in the literature with respect to various other Mayan languages, none of the existing analyses are able to directly account for my observation that Chuj optionally allows AF with two kinds of reflexives. In my attempt to extend Coon, Mateo Pedro, and Preminger (2011), I propose that Chuj reflexives are DPs that require case unless they are pseudo-incorporated into the verb. The ultimate goal is to obtain a unified account that captures the interactions between AF and reflexives displayed by all Mayan languages.

All of the data presented in this thesis come from original fieldwork with Magdalena Torres, a Chuj speaker of the San Mateo Ixtatán dialect who lives in Montreal. I communicated with her in French and mostly asked three types of questions: a) how to express French sentences in Chuj, b) whether certain strings were grammatical in Chuj, and c) whether different Chuj strings expressed the same meaning.

In §2, I present the basics of the Chuj language, including its classification, geographical area, orthography, and phoneme inventory. In §3, I introduce ergativity and the basic ways in which it is manifested in Chuj by giving examples of how person markers are used in the language. In §4, I discuss the AF construction and the contexts in which it is found in Chuj. In §5.1 to §5.3, I classify various languages into three categories based on how they treat AF in their reflexive clauses. In §5.4, I view these languages as a continuum and look for cross-linguistic patterns. In §6, I summarize three of the previous accounts that do address the issue of how AF behaves in reflexive clauses: Aissen (1999), Stiebels (2006), and Coon, Mateo Pedro, and Preminger (2011). In §7, I attempt to extend the latter two accounts, mostly focusing on the last one. Finally, I conclude in §8.

2. Chuj and the Mayan Family

Chuj is one of thirty-one Mayan languages, which are divided into five subgroups by Campbell and Kaufman (1985) as follows (where a semicolon represents a division in the subgroup, an asterisk denotes an extinct language, and controversial groupings are italicized):

1. *Huastecan*: Huastec and Chicomuceltec*.
2. *Yucatecan*: Yucatec, Lacandon; Mopan, Itza.
3. Cholan-Tzeltalan (or Greater Tzeltalan):
 - a. Cholan: Chol, Chontal; Ch'orti', Choltí*;
 - b. Tzeltalan: Tzeltal, Tzotzil.
4. *Q'anjob'alan-Chujean (or Greater Q'anjob'alan)*:
 - a. Q'anjob'alan: Q'anjob'al, Akatek, Jakaltek; Motocintlec;
 - b. Chujean: **Chuj**, *Tojol'ab'al*.
5. K'ichean–Mamean (or Eastern Mayan):
 - a. K'ichean: Q'eqchi'; Uspantek; Poqomchi', Poqomam; K'ichee', Kaqchikel, Tz'utujil, *Sakapultek*, *Sipakapense*;
 - b. Mamean: Teco, Mam; Awakatek, Ixil.

Outside of the thirty-one languages listed above, the Mayan family has no known genetic affiliations.

Chuj belongs to the Greater Q'anjob'alan branch of the family. Its closest relative is thought to be Tojol'ab'al, but this is somewhat controversial, as some have grouped the latter under Tzeltalan according to Campbell and Kaufman (1985).

Chuj is spoken primarily in Guatemala by around 40,000 people. Chuj speakers in Guatemala are located in three municipalities: San Mateo Ixtatán, San Sebastián Coatán and Nentón. All three municipalities are situated in the department of Huehuetenango, the area highlighted in the Google map in Figure 1:



FIGURE 1: MAP OF GUATEMALA WITH HUEHUETENANGO HIGHLIGHTED

There are two major dialects of Chuj: San Mateo Ixtatán and San Sebastián Coatán. I will only present data from the former.

This thesis uses standard Chuj orthography, which is similar to IPA except for the following notable differences: “j” is the voiceless velar fricative [x] in IPA, “x” is the voiceless palato-alveolar fricative [ç], “y” is the palatal glide [j], and “nh” is the velar nasal [ŋ]. The inventory of Chuj consonants is shown in Table 1:

	Labial	Alveolar	Palato-Alveolar	Palatal	Velar	Glottal
Nasal	m	n			nh	
Plosive	p	t			k	'
Implosive	b'					
Ejective		t' tz'	ch'		k'	
Affricate		tz	ch			
Fricative		s	x		j	h
Approximant	w			y		
Lateral Approximant		l				
Flap		r				

TABLE 1: CHUJ CONSONANTS

In addition, [b], [d], [g], and [f] occur as phonemes in Spanish loanwords.

Some online sources list [q] as a phoneme; however, Kaufman (1976) indicates that this phoneme is rare in Meso-American languages and that the proto-Mayan *q became [k] in Chuj, resulting in a loss of contrast as [k] is an independent phoneme.

Chuj has a standard five-vowel system, which is shown in Table 2:

	Front	Central	Back
High	i		u
Mid	e		o
Low		a	

TABLE 2: CHUJ VOWELS

I know of no source that claims any differences in phoneme inventory between the two dialects of Chuj.

3. Ergativity

All Mayan languages exhibit ergative-absolutive morphological alignment, which means that the subjects of intransitive verbs pattern together with the objects of transitive verbs in some way (see e.g. Dixon 1994). Compare this with English, which exhibits nominative-accusative alignment. This means that intransitive subjects and transitive

subjects pattern alike. In (1), for example, “he” is used to refer to all subjects, while “him” is used to refer to the transitive object.

(1) NOMINATIVE-ACCUSATIVE ALIGNMENT

- a. He saw him.
- b. He ran.

If English were an ergative language with respect to case assignment, then the same form of the pronoun (e.g. “he”) would be used to refer to the transitive object and to the intransitive subject, along the lines of what is shown in (2):

(2) ERGATIVE-ABSOLUTIVE ALIGNMENT

- a. Him saw he.
- b. He ran.

Figure 2 graphically depicts the difference between ergative-absolutive alignment and nominative-accusative alignment (where A for “agent” denotes transitive subjects, P for “patient” denotes transitive objects, and S for “subject” denotes intransitive subjects):

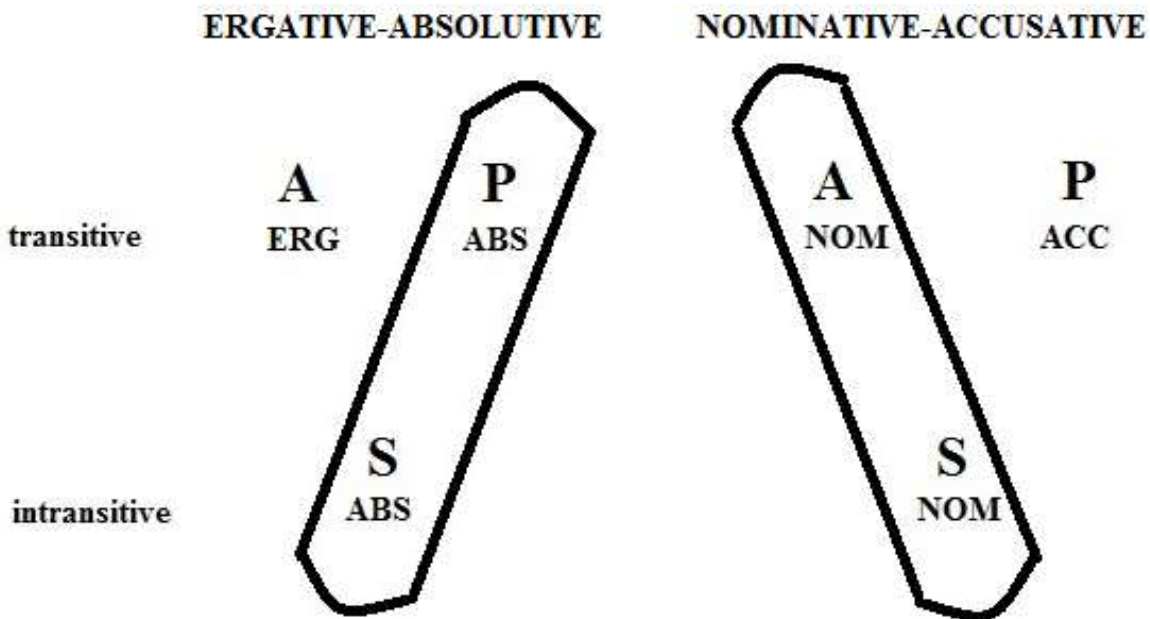


FIGURE 2: ERGATIVE-ABSOLUTIVE & NOMINATIVE-ACCUSATIVE ALIGNMENTS

Ergativity in Mayan languages can be seen by the person marking on the predicate. Chuj has two sets of person markers, as shown in Table 3. (Instead of the vowel-initial person markers in Table 3, Hopkins 1967 lists all of them with an initial “h”, which I have never observed.)

In a normal intransitive clause, only the absolutive marker is used:

- (5) ix-in-wayi
ASP-1ABS-sleep
'I slept.'

Notice that the prefix "in" cross-references the subject in (5) as opposed to the object in (3). This is typical of an ergative-absolutive alignment system.

The ergative markers in Chuj also cross-reference nominal possessors, as in (6):

- (6) ix-∅-in-mak' winh in-mam
ASP-3ABS-1ERG-hit CL 1ERG-father
'I hit my father.'

4. Agent Focus

It is common for languages with ergative-absolutive case alignment to show extraction asymmetries. While one can freely extract absolutive arguments (i.e. intransitive subjects and transitive objects), the extraction of ergative arguments (i.e. transitive subjects) is restricted. This is known in the literature as "syntactic ergativity" (see discussion in Deal 2012). We see in (7b) that the transitive object can be questioned with ease and that, in contrast, the questioning of the transitive subject is ungrammatical in (7c):

- (7) a. ix-∅-w-il winh
ASP-3ABS-1ERG-see he
'I saw him.'
- b. mach ix-∅-y-il winh?
who ASP-3ABS-3ERG-see he
'Whom did he see?'
- c. *mach ix-∅-y-il winh?
who ASP-3ABS-3ERG-see he
'Who saw him?'

Instead, the extraction of transitive subjects requires the verb to drop the ergative marker and to take a special suffix, called the "Agent Focus" (AF) morpheme in the Mayan literature. We see in (8) that it is possible to question the transitive subject if the AF morpheme *-an* is found on the verb:

- (8) WH-QUESTION:
 mach ix-Ø-il-an winh?
 who ASP-3ABS-see-AF he
 'Who saw him?'

In Chuj, the AF morpheme is usually obligatory in clauses where a third person (singular or plural) transitive subject is questioned, focused, or relativized.

- (9) FOCUS:
 a. ix-in-y-il ix
 ASP-1ABS-3ERG-see woman
 'The woman saw me.'
 b. ha ix ix-in-il-an-i.
 FOC woman ASP-1ABS-see-AF-STAT.ITR
 'It was the woman who saw me.'

AF marking causes semantically transitive clauses to appear intransitive in the following ways: A transitive verb bearing an AF suffix can only be prefixed by an absolutive marker, whereas a normal transitive verb is also preceded by an ergative marker. In addition, as seen in (9b), a transitive verb suffixed by an AF morpheme is able to bear the "status suffix" normally reserved for intransitive verbs. (Status suffixes appear on phrase-final verbs but differ for transitive and intransitive verbs: "i" is the intransitive status suffix.)

Indefinite subjects also trigger AF morphology in Chuj. However, if we assume that indefinites are always focused, then the contrast in (10) is to be expected: AF marking is present in (10a) because the subject is focused, and it is absent in (10b) because the object is focused.

- (10) NEGATIVE INDEFINITE SUBJECT:
 a. Ma-laj mach ix-il-an winh.
 NEG who ASP-see-AF he
 'Nobody saw him.'
 b. Ma-laj mach ix-y-il winh
 NEG who ASP-3ERG-see he
 'He saw nobody.'

Next, we see that the relativization of a transitive subject exhibits AF morphology while that of an object does not:

(11) a. RELATIVIZATION OF TRANSITIVE SUBJECT:

ha ix [ix-in-il-an] ol-wayi ix
FOC woman [ASP-1ABS-see-AF] ASP-SLEEP woman
'It's the woman [that saw me] who will sleep.'

b. RELATIVIZATION OF TRANSITIVE OBJECT:

ha ix [ix-Ø- w-il-a] ol-wayi ix
FOC woman [ASP-3ABS-1ERG-see-STAT.TR] ASP-sleep woman
'It's the woman [that I saw] who will sleep.'

(12b, c) show the contrast between the focusing of a third person transitive subject and that of a second person subject; the former triggers AF morphology, while the latter displays regular transitive agreement. Similarly, the focusing of a first person transitive subject does not trigger AF even when the object is third person, as seen in (12d):

(12) a. ix-in-y-il ix.
ASP-1ABS-3ERG-see woman
'The woman saw me.'

b. ha ix ix-in-il-an-i.
FOC woman ASP-1ABS-see-AF-STAT.ITR
'It was the woman who saw me.'

c. ha ach ix-in-Ø-il-a.
FOC 2ABS ASP-1ABS-2ERG-see-STAT.TR
'It was you who saw me.'

d. ha in ix-Ø-w-il ix.
FOC 1ABS ASP-3ABS-1ERG-see woman
'It was I who saw the woman.'

When verbs bear the AF suffix in Chuj, the only set of person markers that is allowed to appear on these verbs (i.e. absolutive markers) agree with the object, as seen in (13):

(13) OBJECT AGREEMENT:

a. mach ix-ach-mak'-an-i?
who ASP-2ABS-hit-AF-STAT.ITR
'Who hit you (singular)?'

b. mach ix-ex-mak'-an-i?
who ASP-2PL.ABS-hit-AF-STAT.ITR
'Who hit y'all?'

I summarize AF in Chuj as follows:

- The extraction of third person transitive subjects (through questioning, focusing, or relativization) requires the verb to bear the AF morpheme *-an*.
- Transitive AF verbs are able to bear an intransitive status suffix.
- While absolutive markers can co-occur with the AF marker in Chuj, ergative markers cannot.
- Absolutive markers agree with the object in AF constructions in Chuj; the subject does not agree with any marker.

5. Puzzle: Reflexives

The AF construction is obligatory in Chuj in the contexts described above with one important exception: Clauses with reflexive objects behave differently. In fact, reflexive constructions form an exception to generalizations about AF across the Mayan family.

5.1 Strong Ban on AF

Many Mayan languages disallow AF marking in regular reflexive constructions, in which the object is co-indexed with the subject. An example of such a language is Q'anjob'al, a close relative of Chuj. In (14a), we can see that the AF morpheme *-on* is needed to question the transitive subject when the object is not a reflexive; in contrast, the normal transitive form must be used in (14b) to question the transitive subject when the object is a reflexive.

(14) a. NON-REFLEXIVE (Q'ANJOB'AL)

maktxel	max-Ø-il- <i>on</i>	naq	winaq
who	ASP-3ABS-see-AF	CL	man
'Who saw the man?'			

b. REFLEXIVE (Q'ANJOB'AL)

maktxel	max-Ø-y-il	s	-b'a?
who	ASP-3ABS-3ERG-see	3ERG-SELF	
'Who saw herself?'			

(Coon et al. 2011:28)

In addition, Q'anjob'al disallows AF marking in clauses where the possessor of the transitive object is co-indexed with the subject. These are known as "extended reflexive" clauses, a term employed by Aissen (1999). To draw a clear distinction between the two kinds of reflexives discussed here, I will often use the term "simple reflexives" to refer to the regular kind. In (15), we see that AF marking is needed in order to question the transitive subject when the latter is distinct from the possessor of the object; however,

the normal transitive form must be used to question a transitive subject that is co-indexed with the possessor of the transitive object, as in (15b).

(15) a. NON-REFLEXIVE

maktxel max-Ø-b'on-on s-na?
 who ASP-3ABS-paint-AF 3ERG-house
 'Who_i painted his_{i/j} house?'

b. EXTENDED REFLEXIVE

maktxel max-Ø- s -b'on s-na?
 who ASP-3ABS-3ERG-paint 3ERG-house
 'Who_i painted his_{i/*j} (own) house?' (Coon et al. 2011:29)

The Mayan languages K'iche' and Tzotzil behave just like Q'anjob'al in that they ban AF in both simple and extended reflexive constructions (Stiebels 2006); I will refer to this as a "strong ban on AF". Most of the literature (e.g. Aissen 1999, Stiebels 2006, Coon et al. 2011) accounts solely for this phenomenon when addressing the topic of AF and reflexives.

5.2 Weak Ban on AF

However, some languages optionally allow or even require AF marking in extended reflexive constructions. Q'eqchi and Jakaltek are examples of such languages, but they still ban AF marking with simple reflexives.

We can see in (16a) that AF marking is possible (but optional) in Jakaltek when we extract a transitive subject that is co-referenced with the possessor of the object, whereas (16b) shows that the AF construction is not used when the object is a reflexive.

(16) a. JAKALTEK EXTENDED REFLEXIVE

ha' naj s-mak / x-mak-ni s-mam?
 FOC he 3ERG-hit / ASP-hit-AF 3ERG-father
 'It is he_i who hit his_i father.'

b. JAKALTEK REFLEXIVE

mac x-Ø- s-potx' s -ba
 who ASP-3ABS-3ERG-kill 3ERG-self
 'Who killed himself?' (Craig 1977:217-8)

In summary, we have thus far encountered two types of languages if we consider the contexts in which AF marking is banned. The two rows in Table 4 represent these two types of languages; an "X" is placed wherever AF marking is banned.

Language	Simple Reflexives	Extended Reflexives
Tzotzil, K'iche', Q'anjob'al	X	X
Q'eqchi, Jakaltek	X	

TABLE 4: STRONG & WEAK BANS ON AF

In addition to the two types depicted in Table 4, we might expect to find Mayan languages that ban AF marking in extended reflexive constructions only or, perhaps, languages that do not ban AF in either kind of reflexive constructions. Based on original fieldwork, my data reveal that Chuj belongs to the latter category.

5.3 No Ban on AF

Chuj optionally allows AF marking with both simple reflexives and extended reflexives; no other Mayan language is known to behave exactly like this. (However, Aissen 1999 documents that Tz'utujil is similar, in which AF is optional in simple reflexive clauses and obligatory in extended reflexive clauses.)

In (17), we see that a simple reflexive object is able to appear with and without the AF morpheme when the transitive subject is questioned; (17a) uses AF marking, whereas (17b) does not, but they are both acceptable. Similarly, (18) demonstrates the same optionality for the focusing of a transitive subject.

(17) CHUJ SIMPLE REFLEXIVE – WH-QUESTION

a. mach ix-il-an s-b'a t'a k'en nen?
 who ASP-see-AF 3ERG-self at CL mirror
 'Who saw himself in the mirror?'

b. mach ix-y-il s-b'a t'a k'en nen?
 who ASP-3ERG-see 3ERG-self at CL mirror
 'Who saw himself in the mirror?'

(18) CHUJ SIMPLE REFLEXIVE – FOCUS

a. ha winh ix-s-mak' s-b'a.
 FOC he ASP-3ERG-hit 3ERG -self
 'It was he who hit himself.'

b. ha winh ix-mak'-an s-b'a.
 FOC he ASP-hit-AF 3ERG-self
 'It was he who hit himself.'

In (19), we see that extended reflexives also grant this optionality. (19a) shows that it is grammatical to use AF marking in an extended reflexive construction when the agent is questioned, whereas (19b) shows that it is also grammatical to use the normal transitive

construction with no AF morpheme in order to express the same meaning.

(19) CHUJ EXTENDED REFLEXIVE

- a. mach ix-Ø-b'ik'-an s-k'ap?
 who ASP-3ABS-wash-AF 3ERG-hand
 'Who washed his own hands?'
- b. mach ix-Ø-s-b'ik' s-k'ap?
 who ASP-3ABS-3ERG-wash 3ERG-hand
 'Who washed his own hands?'

Next, an interesting question to ask is whether there are factors that condition this optionality. I have thus far noticed one difference between the AF form and the normal transitive form in Chuj: (20a) shows that the word “yesterday” can be inserted between the verb and the reflexive if AF marking is present, whereas (20b) shows that the same word cannot be inserted there if the AF construction is not used.

- (20) a. mach mak'-an ewi s-b'a?
 who hit-AF yesterday 3ERG-self
 'Who hit himself yesterday?'
- b. * mach s-mak' ewi s-b'a?
 who 3ERG-hit yesterday 3ERG-self
 Intended: 'Who hit himself yesterday?'
- c. mach s-mak' s-b'a ewi?
 who 3ERG-hit 3ERG-self yesterday
 'Who hit himself yesterday?'

Similarly, as we can see in (21), it is possible to insert a PP between the verb and the reflexive if the AF morpheme is present, but the same insertion is not permitted in the absence of AF morphology.

- (21) a. mach ix-il-an t'a k'en nen s-b'a?
 who ASP-see-AF at CL mirror 3ERG-self
 'Who saw himself in the mirror?'
- b. * mach ix-y-il t'a k'en nen s-b'a?
 who ASP-3ERG-see at CL mirror 3ERG-self
 Intended: 'Who saw himself in the mirror?'

c. mach ix-y-il s-b'a t'a k'en nen?
 who ASP-3ERG-see 3ERG-self at CL mirror
 'Who saw himself in the mirror?'

If the object is an extended reflexive, then the insertion of a word between the verb and the object appears to be more acceptable: The Chuj speaker often found (22a) and (22b) to both be acceptable, but she still sometimes found (22b) to be unacceptable.

(22) a. mach mak'-an ewi s-nun?
 who hit-AF yesterday 3ERG-mother
 'Who hit his mother yesterday?'

b. ? mach s-mak' ewi s-nun?
 who 3ERG-hit yesterday 3ERG-mother
 'Who hit his mother yesterday?'

5.4 Summary of AF in Reflexive Constructions

The variation among languages in their use of AF with reflexives can be summarized as follows (where "X"s represent the contexts in which AF marking is banned):

	Simple Reflexives	Extended Reflexives
Tzotzil, K'iche', Q'anjob'al	X	X
Q'eqchi, Jakaltek	X	
(unattested)		X
Chuj, Tz'utujil		

TABLE 5: CROSS-MAYAN VARIATION IN THE BANNING OF AF

Rather than falling into three internally-uniform categories, however, these languages form a continuum. See Table 6 for the details of how AF operates in both kinds of reflexive constructions in these different languages.

	Mandatory AF = 1			Optional AF = ½		No AF = 0
	No Reflexive	Extended Reflexive	Simple Reflexive	No Reflexive	Extended Reflexive	Simple Reflexive
Q'anjob'al	1	0	0			
Jakaltek	1	½	0			
Q'eqchi	1	1	0			
Chuj	1	½	½			
Tz'utujil	1	1	½			

TABLE 6: CROSS-MAYAN VARIATION IN SIMPLE AND EXTENDED REFLEXIVES

Notice that, for every language shown in Table 6, the numbers are in descending order from left to right (i.e. No Reflexive \geq Extended Reflexive \geq Simple Reflexive). This suggests the following: The AF form is needed the most under agent extraction when the object is not a reflexive; it is needed the least when the object is a simple reflexive; and extended reflexive constructions lie in between the two. My hypothesis is that this relation holds in all Mayan languages that make use of AF.

From Tables 5 and 6, we can see that simple and extended reflexive constructions do not always treat AF in the same way. However, previous analyses (such as the ones summarized below) have not accounted for the differences. In addition, both the “weak ban” and the “no ban” on AF described above pose problems for previous accounts, as they all strive to explain why AF is incompatible with both kinds of reflexives.

6. Previous Accounts

In this section, I summarize three existing analyses of reflexives in AF constructions and discuss whether they can account for Chuj.

6.1 Aissen (1999)

This paper aims to establish that Tzotzil AF verbs have two conditions: They require agent extraction and express the inverse function. Specifically, the AF verb occurs only when the primary object outranks the subject on the obviation hierarchy, which I will discuss shortly.

Inverse systems involve a contrast between direct and inverse verbs; direct verbs are used when the subject outranks the object with respect to a prominence hierarchy, and inverse verbs are used when the object outranks the subject.

Obviation refers to a system of prominence that ranks third persons. The paper argues that it is the obviation hierarchy that is relevant for determining whether the object outranks the subject in Tzotzil and thus whether AF is used. Since obviation is meaningful only in contexts with multiple third persons, first and second person arguments are not ranked. Therefore, when one or both arguments is first or second person, the object cannot outrank the subject. This explains why Tzotzil AF can only appear with two third-person arguments. The regular transitive form occurs only when the primary object does not outrank the subject on the obviation hierarchy (including when the two arguments are not ranked due to not being third person).

Animacy plays the most important role for evaluating the relative prominence of arguments even though definiteness is also important. In particular, humans are preferred over nonhumans when prominence has to be determined, regardless of definiteness.

Tzotzil differs from other Mayan languages in that the AF construction is not obligatory under the extraction of any specific kind of agents. When an agent is extracted from a normal transitive clause, however, there is ambiguity regarding whether it is agent or patient extraction if both arguments are third persons.

In addition, while some agent extractions can occur regardless of whether the AF verb is used, this is not always the case, and speakers also usually have preferences even in contexts where both the normal transitive verb form and the AF form are grammatical. This paper argues that the relative prominence of the subject and the object is the primary factor determining the distribution of these two forms; specifically, the AF form is required or preferred when the object is more prominent, whereas the normal transitive form is required or preferred when the subject is more prominent. When both verb forms are grammatical, the paper demonstrates that it is because the subject and object are close in obviation rank, in which case the paper determines preferences through examining data in texts or through the way speakers choose to translate Spanish clauses into Tzotzil.

Both simple and extended reflexive constructions disallow the AF verb in Tzotzil; the paper attributes this to the following principle (which is well established in Algonquian languages): A third person genitive outranks its head in obviation status. Since this principle would imply that simple and extended reflexives all have the direct configuration (as opposed to the inverse one), the paper concludes that the AF form is incompatible with the direct configuration.

While this inverse analysis of agent focus captures Tzotzil data extremely well, it cannot be extended to Chuj for the following reasons: The analysis hinges on the fact that AF in Tzotzil is limited to clauses with two third-person arguments, as obviation only ranks third persons, but Chuj does allow AF with first and second person objects. In addition, the above analysis predicts there to be AF optionality whenever the subject and object are sufficiently close in rank, but AF is optional in Chuj only in reflexive constructions. Lastly, it predicts that AF is always banned with reflexive and extended reflexives, which is not the case in Chuj. Due to the combination of these three reasons, I see no way of extending the above analysis to Chuj.

6.2 Stiebels (2006)

This paper provides an in-depth overview of how agent focus operates across the family by giving detailed descriptions of the numerous ways in which different Mayan languages exhibit differences in their AF constructions.

An analysis is presented within the Lexical Decomposition Grammar (LDG), where arguments of verbs are represented by λ -abstractors and are given the following two features: [hr] 'there is a higher role', and [lr] 'there is a lower role'. Mayan person markers are then described in terms of these features as well as Φ -features. For

example, ergative markers (denoted by E) all have the feature [+lr], and the lexical entry of the third person singular ergative marker is simply [+lr] because Φ -features are only specified when they are [+1], [+2], or [+pl]; in contrast, the second person plural absolutive marker is given the lexical entry [+2, +pl] because absolutive markers (denoted by N) have neither [+lr] nor [+hr]. In addition, the AF marker is given the lexical entry [+lr, +foc]. The paper then proposes markedness and faithfulness constraints along with their rankings in order to capture the agreement patterns observed in Mayan languages.

Stiebels provides a short sketch of an account that attempts to capture the incompatibility of AF with all reflexives (without distinguishing between simple and extended reflexives). She proposes the constraint MAX(Φ , +lr)/binder, which requires that the Φ -features and the feature [+lr] of the binder (always a subject) appear in the output; this dominates all other constraints.

I hereby present a detailed OT analysis in order to examine how the above proposal would work.

The constraint MAX(Φ , +lr)/binder would keep only those candidates that show ergative agreement with the subject (denoted by an 'E' in the position of 'x') because N has no [+lr] feature (as previously mentioned) and \emptyset has neither [+lr] nor Φ -features. (Note that E can never appear in the 'y' position, since 'y' represents the transitive object, which can never have ergative case.) Therefore, the remaining y-x candidates are the four presented in Table 7; the constraint rankings displayed here are the ones established by the paper for generalized AF.

Input: $\lambda y[+hr, -lr, -foc, \Phi] \lambda x[-hr, +lr, +foc, \Phi]$						
y-x	MAX(Φ , +lr) /binder	MAX (+lr)	*[+lr]	UNIQUE	MAX(+foc)	MAX(Φ)
N-E			*		*	
N-E; AF			**!	*		
\emptyset -E			*		*	*!
\emptyset -E; AF			**!	*		*

TABLE 7: ANALYSIS OF AF AND REFLEXIVES WITHIN LDG

MAX(+lr), which requires [+lr] in the input to have a correspondent in the output, is the highest-ranking constraint after MAX(Φ , +lr)/binder, but the latter is strictly more stringent than the former. Because the candidates in Table 7 were picked to satisfy MAX(Φ , +lr)/binder, they also trivially satisfy MAX(+lr).

Next in rank is the constraint *[+lr], which requires the avoidance of candidates specified with [+lr]. This eliminates the candidates N-E; AF and \emptyset -E; AF because they each contain E as well as AF, both of which have the [+lr] feature.

The subsequent constraint to be considered is UNIQUE(NESS), which rules out the appearance of markers that have identical specifications in terms of [lr] and [hr] in the same candidate. Although E and AF have identical specifications according to this constraint, we have already eliminated all candidates containing both E and AF. Then no new eliminations occur due to this constraint, as E is different from both N and \emptyset in terms of [lr] and [hr] features.

Ranked just below UNIQUE(NESS) is the constraint MAX(+foc), which requires the feature [+foc] in the input to have a correspondent in the output. Both of the remaining candidates violate this because they lack the AF morpheme from the input; therefore, we must continue further.

We finally consider the constraint MAX(Φ), which requires positive Φ -features in the input to have a correspondent in the output. This eliminates the candidate \emptyset -E, allowing N-E to be optimal.

Since N-E represents the normal transitive agreement pattern in Mayan, this proposal does manage to capture the avoidance of AF in both kinds of reflexive constructions in languages such as Tzotzil and Q'anjob'al. However, as noted by the author, this does not account for the differences between simple and extended reflexives exhibited by some languages. In fact, extending this account will be very difficult because it makes reference to the binder and not to the expression that is bound. There is no way to make the construction sensitive to the distinction between simple and extended reflexives if all that matters is realizing the binder's features. In addition, this analysis does not address AF optionality, which makes it not directly applicable to Chuj.

6.3 Coon, Mateo, and Preminger (2011)

Based on data from Q'anjob'al, the paper argues that agent extraction is restricted when the assignment of absolutive case cannot occur. Furthermore, the AF morpheme is proposed to assign absolutive case to the internal argument when this case is otherwise unavailable.

The paper follows the classification of Mayan languages into HIGH-ABS and LOW-ABS languages. In the former, the absolutive marker immediately follows the aspect marker; in the latter, the absolutive marker appears at the end of the verb stem. The paper then proposes that absolutive case comes from Infl^0 in HIGH-ABS languages but from v^0 in LOW-ABS languages.

Evidence for the above proposal is found in non-finite embedded clauses. By assuming that Infl^0 is occupied by ASPECT and that non-finite clauses in Mayan are the ones without aspect marking, the paper correctly predicts absolutive case to be unavailable in non-finite embedded clauses in HIGH-ABS Q'anjob'al. Similarly, it correctly predicts the availability of absolutive case in aspectless embedded clauses in LOW-ABS languages.

Because Q'anjob'al absolutive arguments are possible in aspectless clauses only in the presence of the AF morpheme *-on*, the paper proposes that *-on* assigns absolutive case to the internal argument if it is otherwise unavailable.

To account for the HIGH-ABS and LOW-ABS word orders, the paper gives the following explanation: Assume that transitive v^0 heads are phasal while intransitive v^0 heads are not. Then the transitive object must raise to the phase edge in order to receive absolutive case from Infl^0 in HIGH-ABS languages, since only elements at the phase edge are accessible to further syntactic operations. The paper stipulates that v^0 heads in HIGH-ABS languages have an EPP feature that attracts the internal argument to Spec-vP, where the argument then receives absolutive case from Infl^0 . In LOW-ABS languages, the paper stipulates that there is no EPP feature on v^0 and that no argument is raised.

The paper then argues that the problem with agent extraction lies with the internal argument: If the subject extracted out of the phasal vP, then the object would not be able to raise to the phase edge (assuming that there is only one way out) and would therefore not be able to receive absolutive case from Infl^0 .

AF constructions permit agent extraction in the following way: The AF morpheme assigns absolutive case to the transitive object, which allows Infl^0 to assign absolutive case to the subject. As a result, no ergative case is assigned, which makes v^0 intransitive (assuming that the transitivity of v^0 is determined by whether or not it assigns ergative case). Even though the object is still attracted to Spec-vP by the EPP feature of v^0 , the subject is now free to extract because an intransitive v^0 is not phasal.

Next, the paper claims that simple reflexives, extended reflexives, and bare NP objects are all caseless and licensed by being incorporated or pseudo-incorporated into the verb stem. Because they are smaller than DPs, they cannot satisfy the EPP feature of v^0 and therefore do not raise, which is not problematic given that they do not require case. The subject is then able to raise through the phase edge because the object is not there to block it. In other words, the agent is free to extract if the object is caseless.

The above proposal captures the data from Q'anjob'al because AF marking is not permitted in this language with either of the reflexive constructions. To account for the AF optionality in Chuj, however, the authors would need to claim that Chuj reflexives are only sometimes caseless. In §7.2, I will show how their work can be extended to predict the Chuj data.

7. Towards a Solution

In §7.1, I consider extending the analysis from Stiebels (2006). In §7.2, I turn to a case-based analysis following Coon et al. (2011).

7.1 Extending Stiebels (2006)

The difference between simple and extended reflexives lies in whether the possessed object is bound; simple reflexive objects are bound, while extended reflexive objects are not. Because 'x' binds 'y' in simple reflexive clauses (i.e. 'y' is the "bindee"), the Φ -features of 'x' and 'y' are identical; in extended reflexive clauses, however, the Φ -features of 'x' and 'y' may differ because 'x' does not bind 'y' (i.e. neither 'x' nor 'y' is the bindee). If a language treats simple and extended reflexives differently, then it seems necessary to have at least one high-ranking constraint that refers to the bindee.

If we wanted to account for AF optionality in all instances of agent extraction, we would need to have unranked constraints in a way such that the outputs N- \emptyset ; AF and N-E are both optimal, since the former represents AF with object agreement while the latter represents normal transitive agreement. This goal would result in the following modified ranking of Stiebels (2006)'s constraints:

UNIQUE, DEF/+hr >> MAX(+foc), MAX(Φ)

(Note: If MAX(+foc) >> MAX(Φ), then N- \emptyset ; AF wins. If MAX(Φ) >> MAX(+foc), then N-E wins. Therefore, these two constraints must be unranked when there is optionality.)

In order to capture AF optionality only in reflexive clauses as in Chuj, we cannot implement Stiebels (2006)'s proposal of the undominated constraint MAX(Φ , +lr)/binder that I previously examined, since this constraint eliminates all y-x candidates except those with E in the 'x' position (whereas Chuj reflexive clauses would still need N- \emptyset ; AF to be an optimal candidate).

7.2 Extending Coon et al. (2011)

When agent extraction occurs without AF morphology, the object has no way of receiving absolutive case according to Coon et al. Recall that the AF morpheme is proposed to assign absolutive case to the object. Therefore, when agent extraction occurs in an AF-marked clause, absolutive case is available to the object. Coon et al. demonstrate that Q'anjob'al reflexives are caseless, which explains the ungrammaticality of AF-marking in clauses with reflexive objects. (I assume that it is either because the language strives to be economical by avoiding unnecessary morphology, or because the AF morpheme has an unvalued absolutive case feature that caseless reflexives cannot check.)

In that vein, I make the following proposal in order to explain the optionality of AF-marking in Chuj reflexive clauses: Chuj reflexives are case-bearing DPs in clauses where absolutive case is available, but they are caseless NPs licensed by being pseudo-incorporated into the verb (see e.g. Massam 2001) in clauses where absolutive case is unavailable. (I assume that the relevant process is Pseudo Noun Incorporation undergone by an NP rather than incorporation undergone by an N^0 , since a Chuj reflexive needs to be more than an N^0 head in order to contain the ergative marker

cross-referencing the possessor, but the choice of assumption here will not change the analysis. What is important is that the diagnostic for a pseudo-incorporated NP is its necessary adjacency to the verb stem.)

One prediction of my proposal is that Chuj reflexives are necessarily adjacent to the verb in clauses where the agent undergoes extraction without AF morphology (i.e. when absolutive case is unavailable). This prediction is borne out by the data that we saw in (20-21). I repeat (20) here:

- a. mach mak'-an ewi s-b'a?
 who hit-AF yesterday 3ERG-self
 'Who hit himself yesterday?'
- b. * mach s-mak' ewi s-b'a?
 who 3ERG-hit yesterday 3ERG-self
 Intended: 'Who hit himself yesterday?'
- c. mach s-mak' s-b'a ewi?
 who 3ERG-hit 3ERG-self yesterday
 'Who hit himself yesterday?'

(20b) is ungrammatical because the reflexive is separated from the verb by “yesterday”; in the absence of AF morphology, the reflexive must be adjacent to the verb as in (20c). In contrast, the reflexive in (20a) does not need to be adjacent to the verb because it is a DP that receives absolutive case from the AF morpheme.

My proposal for Chuj does not distinguish between simple and extended reflexives, as they do not appear to behave differently in Chuj. However, my data for extended reflexives are less clear, since the speaker was unsure about whether the extended reflexive in (22) could be separated from the verb in the absence of AF morphology. Therefore, I present additional support in (23) for the required adjacency of the extended reflexive to the verb when absolutive case is unavailable. (23a) shows that the extended reflexive *s-tz'i'* can be separated from the verb stem by the noun classifier *nok'* when there is AF-marking. However, when the AF morpheme is not there to provide absolutive case, it is impossible to place the same classifier between the verb and the extended reflexive as in (23b); instead, the adjacency in (23d) is necessary.

- (23) a. mach ix-mak'-an nok' s-tz'i'?
 who ASP-hit-AF CL 3ERG-dog
 'Who hit his own dog?'

b. * mach ix-s-mak' nok' s-tz'i'?
 who ASP-3ERG-hit CL 3ERG-dog
Intended: 'Who hit his own dog?'

c. mach ix-mak'-an s-tz'i'?
 who ASP-hit-AF 3ERG-dog
'Who hit his own dog?'

d. mach ix-s-mak' s-tz'i'?
 who ASP-3ERG-hit 3ERG-dog
'Who hit his own dog?'

When there is agent extraction without AF morphology, Chuj is reminiscent of Coon et al.'s description of Q'anjob'al, which disallows noun classifiers from preceding extended reflexives because the latter are always caseless in Q'anjob'al.

We just saw evidence for the caselessness of Chuj reflexives in clauses with no absolutive case available. However, we remain to be convinced that Chuj reflexives are case-bearing DPs in clauses where absolutive case is available (either from Infl⁰ when there is no agent extraction, or from the AF morpheme): Although we saw that Chuj reflexives can be separated from the verb in an AF-marked clause, I still need to show that they are also DPs when there is no agent extraction (i.e. when absolutive case is available from Infl⁰). I assume that all unincorporated reflexives are DPs, that all DPs need case, and that NPs cannot bear case.

When there is no agent extraction, support for the DP status of Chuj reflexives can be found in (24), where the classifier *nok'* is permitted to separate the extended reflexive from the verb. This is in stark contrast to (23b), where the classifier was not permitted because agent extraction made absolutive case from Infl⁰ inaccessible to the reflexive.

(24) ix-w-il nok' in-tz'i'?
 ASP-1ERG-see CL 1ERG-dog
'I saw my dog.'

Additional support for the DP status of Chuj reflexives in the absence of agent extraction can be found in (25), which shows that word order can be either VSO or VOS in a Chuj simple reflexive clause. The fact that VSO is grammatical is evidence that the reflexive object in (25a) does not need to be adjacent to the verb. This is in contrast to Coon et al.'s description of Q'anjob'al, which does not permit VSO word order with reflexive objects (due to their caselessness) even though the normal word order in the language is VSO.

- (25) a. VSO WORD ORDER – SIMPLE REFLEXIVE
 ix-s-mak' winh s-b'a?
 ASP-3ERG-hit he 3ERG-self
 'He hit himself.'
- b. VOS WORD ORDER – SIMPLEX REFLEXIVE
 ix-s-mak' s-b'a winh?
 ASP-3ERG-hit 3ERG-self he
 'He hit himself.'

Although (25b) alone provides no evidence regarding the status of the reflexive that it contains, the above analysis predicts that this reflexive is a DP that receives absolutive case from Infl⁰.

To summarize, I first showed that Chuj reflexives are pseudo-incorporated into the verb in clauses where absolutive case is unavailable, and I then showed that they are unincorporated DPs in clauses where absolutive case is available.

Therefore, I account for AF optionality in Chuj reflexive clauses in the following way: When there is agent extraction, reflexive clauses lacking AF morphology have a caseless NP object that needs to be licensed by being pseudo-incorporated into the verb, whereas AF-marked reflexive clauses have a DP object that requires case.

Cross-linguistically, I propose that AF is mandatory with those reflexives that are required to be case-bearing DPs, that AF is optional if both NPs and DPs are allowed as in Chuj, and that AF is disallowed with those reflexives that are required to be caseless NPs. This is presented in Table 8, which is Table 6 modified to include the additional information. These predictions should be tested for the various languages.

Mandatory AF = 1	Optional AF = ½	No AF = 0
	Extended Reflexive	Simple Reflexive
Q'anjob'al	0 => caseless NP	0 => caseless NP
Jakaltek	½ => NP or DP	0 => caseless NP
Q'eqchi	1 => case-bearing DP	0 => caseless NP
Chuj	½ => NP or DP	½ => NP or DP
Tz'utujil	1 => case-bearing DP	½ => NP or DP

TABLE 8: CROSS-LINGUISTIC IMPLICATIONS

If we combine the new predictions in Table 8 with the previously-noted observation from Table 6 that the extended reflexive number is always greater or equal to the simple reflexive number, we obtain hypotheses such as the following: If extended reflexives must be caseless in a language, then simple reflexives must also be caseless in that

language. If simple reflexives always require case, then extended reflexives must also require case.

8. Conclusion

Extending the analysis from Coon et al., I have shown that Chuj reflexives are caseless NPs in clauses where absolutive case is unavailable and that they are case-bearing DPs in clauses where absolutive case is available. I then made similar predictions that can be tested for various other Mayan languages.

In addition, Table 6 led me to the hypothesis that extended reflexives need AF morphology at least as much as simple reflexives do in any given clause in all relevant languages. Combining this with the above case-based analysis results in additional hypotheses, such as the following: In any given language, if simple reflexives require case, then extended reflexives require case as well.

Abbreviations

ABS – absolutive; AF – agent focus; ASP – aspect marker; CL – classifier;
ERG – ergative; FOC – focus; ITR – intransitive; STAT – status suffix; PL – plural;
TR – transitive

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