

Anti-locality and optimality in Kaqchikel Agent Focus

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Many Mayan languages show a syntactically ergative extraction asymmetry whereby the \bar{A} -extraction of subjects of transitive verbs requires special verbal morphology, known as *Agent Focus*. In this paper I investigate the syntax of Agent Focus in Kaqchikel, a Mayan language spoken in Guatemala. I argue that this extraction asymmetry in Kaqchikel is the result of a particular anti-locality constraint which bans movement that is *too close*. Support for this claim comes from new data on the distribution of Agent Focus in Kaqchikel that show this locality-sensitivity.

The distribution and realization of Agent Focus will then be modeled using a system of ranked, violable constraints operating over competing derivations. This theoretical choice will be supported by details in the pattern of agreement in Agent Focus. **I will then show how rerankings of the proposed constraints can model the attested distribution of Agent Focus in a number of other Mayan languages. I also discuss extensions of this approach to other patterns of anti-agreement.**

Keywords: Agent Focus, Mayan, ergativity, extraction asymmetries, anti-locality, agreement, anti-agreement, violable constraints

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1 Introduction

In a subset of Mayan languages, \bar{A} -extraction of subjects of transitive clauses triggers a change to that verb's morphology. This construction is called *Agent Focus (AF)* in the Mayan literature (Aissen 1999a; Stiebels 2006; Norcliffe 2009; Coon et al. 2011; a.o.). AF is traditionally described as obligatory whenever the subject of a transitive clause is \bar{A} -extracted. In this paper I will discuss the distribution and derivation of the AF construction in Kaqchikel, a Mayan language of Guatemala, **and consequences for the theory of \bar{A} -movement and its interaction with agreement.**

Consider the basic transitive clause in (1). The verb "eat" is realized here as *xutěj*. When the subject of this transitive clause is extracted, as in the *wh*-question in (2), the verb must be realized in its AF-form, *xtjö*.¹ Verbal morphology in Mayan languages involve two agreement markers with an ergative/absolutive alignment, which I call Set A and Set B following the Mayan literature: in transitive clauses, Set B cross-references the object and Set A cross-references the subject; in intransitive clauses Set B cross-references the subject. AF verbs can be identified by the lack of a Set A agreement marker and the addition of an AF suffix, *-ö* or *-n*, which will always be in bold in this paper. The precise morphological realization of AF in Kaqchikel will be discussed in subsequent sections. (Here and throughout, subjects will be underlined where relevant.)

(1) **Basic transitive clause (VOS):**

Iwír x-∅-u-těj ri wäy ri a Juan.
Yesterday COM-B_{3sg}-A_{3sg}-eat the tortilla Juan

'Yesterday Juan ate the tortilla.'

(2) **Subject *wh*-question requires AF:**

Achike *x-∅-u-těj / ✓x-∅-tj-**ö** ri wäy?
who COM-B_{3sg}-A_{3sg}-eat / COM-B_{3sg}-eat-**AF** the tortilla

'Who ate the tortilla?'

¹Abbreviations used: A = Set A agreement, AF = Agent Focus, B = Set B agreement, COM = completive aspect, INC = incompletive aspect, FOC = focus marker, RC = relative clause marker, ∅ = empty string, for phonologically null morphemes. The aspectual terms "completive" and "incompletive" are used in the Mayan literature and are adopted here. The semantics of the aspectual system is not relevant to discussions here.

In contrast, an object *wh*-question also based on the transitive clause in (1) does not trigger AF:

(3) **Object *wh*-question does not trigger AF:**

Achike \checkmark x- \emptyset -u-tëj / *x- \emptyset -tj-ö ri a Juan?
 what COM-B_{3sg}-A_{3sg}-eat / COM-B_{3sg}-eat-AF Juan

‘What did Juan eat?’

Wh-movement is not the only trigger of AF. As we will see, all constructions involving \bar{A} -movement of the subject of a transitive verb can trigger AF on that verb.²

Why does AF appear in these cases where a transitive subject is extracted? I will argue that AF in Kaqchikel reflects a sensitivity to the *locality of movement* of a transitive subject, rather than a specific reaction to the extraction of a transitive subject. In particular, Kaqchikel has an anti-locality constraint that bans movement which is *too short*:

(4) **Spec-to-Spec Anti-Locality:**

\bar{A} -movement of a phrase from the Specifier of XP must cross a maximal projection other than XP.

I argue first that subjects of transitive verbs are required to be in a higher position in the clause than other types of arguments—Spec,TP. \bar{A} -movement of transitive subjects to the clausal periphery (from Spec,TP to Spec,CP) will be *too short*—a violation of Spec-to-Spec Anti-Locality (5a). In such situations an AF derivation is chosen, where the subject skips its normal Spec,TP position and instead moves directly from its base-generated position to Spec,CP. \bar{A} -movement of other arguments begins from a position below Spec,TP, and thus is never in danger of triggering this anti-locality constraint.

(5) **Short \bar{A} -movement of transitive subjects triggers AF:**

- a. * [CP subject C [TP \bar{X} ... [vP \bar{Y} ...]] *violates Spec-to-Spec Anti-Locality!*
- b. \checkmark [CP subject C [TP ... [vP \bar{Y} ...]] subject skips Spec,TP; triggers AF morphology

Evidence for this locality-sensitive view of Kaqchikel AF comes from new data where AF is not triggered even though a transitive subject has \bar{A} -moved (6). The intervening material makes the subject’s movement from Spec,TP to Spec,CP no longer too short, and thus AF is not triggered.

²With the notable exception of topicalization, which will be discussed in a section 4.4.

(6) **Intervening material makes movement longer, obviating AF:**

√_{[CP subject C [...*intervening material*... [TP ___ ... [vP ___ ...]]]] ⇒ no Agent Focus!}

I begin in section 2 with a basic introduction to Kaqchikel verbal morphology and a survey of AF-triggering environments. The basic generalization will be that AF must be used when the subject of a transitive verb has been \bar{A} -extracted. In section 3 I will introduce new data on the distribution of AF in Kaqchikel which motivates the locality-sensitive view of AF. In section 4 I introduce my proposal. *The desire for the verb to maximally cross-reference its arguments* derives the morphologically ergative agreement alignment of Kaqchikel. The syntactically ergative distribution of AF will come out of the competition of Spec-to-Spec Anti-Locality and the constraint preferring that arguments be cross-referenced.

In section 5 I will formally model *this* theory using a set of ranked, violable constraints operating over outputs of the derivational syntax, using the familiar tableau notation from Optimality Theory (Prince and Smolensky, 1993). In particular I will look at the pattern of agreement on AF verbs and show how its behavior *motivates this system of violable constraints*. I also discuss the notion of “last-resort” in the grammar and argue that the behavior observed cannot be straightforwardly modeled using approaches which require designating AF as a “last-resort” operation.

In section 6, I extend this proposal to related behavior in other languages. First, I show that rerankings of the violable constraints proposed predict patterns of AF attested in other Mayan languages. Second, I demonstrate how the anti-locality approach to AF can be extended to explain other patterns of so-called *anti-agreement effects*, including in nominative-accusative languages.

Finally, I conclude in section 7 with some thoughts on the relation of Spec-to-Spec Anti-Locality to types of subject extraction asymmetries, as well as lessons of this work for our understanding of the articulated left periphery.

2 Basics of Kaqchikel Agent Focus

I begin this study with a description of the morphological realization of AF in Kaqchikel and the syntactic environments which trigger AF.³

2.1 The Kaqchikel verb

Verbal complexes in Kaqchikel are made up of an aspectual prefix, agreement markers, and finally the verbal stem (McKenna Brown et al., 2006). As noted above, there are two different series of agreement markers which I will call Set A and Set B, following previous literature on Mayan languages.⁴ The entire verbal complex forms a morphologically complex word, with certain phonological processes affecting its final realization (Kenstowicz, 2013).

(7) Verb complexes in Kaqchikel:

a. Full agreement transitive verb:

aspect – Set B – Set A – verb object subject

b. Intransitive verb:

aspect – Set B – verb subject

The fact that the same set of Set B morphemes is used to cross-reference the *object* in transitive verbs and the *subject* in intransitive verbs has led to the description of Kaqchikel, and Mayan languages more generally, as morphologically ergative. For example, the transitive verb in (8) below has a third-plural Set A morpheme cross-referencing the subject “they” and a second-singular Set B morpheme cross-referencing the object “you.” The intransitive verb in (9) has one agreement morpheme, a second-singular Set B morpheme cross-referencing “you.”⁵ Notice that the same morpheme, *-a(t)-*, appears as the realization of second-singular agreement for the object in (8) and the subject in (9). (As Kaqchikel is a pro-drop language, both (8) and (9) can be stand-alone utterances.)

- (8) X-at-ki-tz'ët.
 COM-B_{2sg}-A_{3pl}-see
 ‘They saw you.’

³The precise morphological realization of AF and the syntactic constructions which trigger it differ across the various Mayan languages. Stiebels (2006) presents a cross-Mayan survey of these aspects of AF but Kaqchikel is not included in that study. This section thus also acts to contribute a missing data point in this cross-Mayan look at AF.

⁴The Set A and Set B ϕ -agreement series are also observed in the nominal domain. Possessor agreement on DPs uses the Set A markers and free pronouns are based on the Set B markers. Here I will limit attention to the Set A and Set B markers in the verbal complex which cross-reference arguments of the verb.

⁵Full paradigms for the agreement markers in this variety of Kaqchikel are given in Preminger (2011).

- (9) X-a-wär.
 COM-B_{2sg}-sleep
 'You slept.'

The phenomenon of Agent Focus involves three simultaneous changes to the transitive verb's morphology: (a) the addition of an AF suffix, (b) the disappearance of the Set A slot, and (c) a change in the target of Set B agreement.

- (10) **Agent Focus form of transitive verb:**
 aspect – Set B – verb – AF suffix

In contrast to the Set B marker in full agreement transitive verbs, the Set B morpheme in AF verbs does not simply agree with the object. Consider the two subject clefts in (11), which are both AF clauses. In (11a), with a second-singular subject and third-singular object, the Set B morpheme shows second-singular agreement—that is, it looks like it is agreeing with the *subject*. However, in (11b), with a third-singular subject and a second-singular object, the verb still exhibits second-singular Set B agreement, which in this case must be through agreement with the *object*. In both cases, the verb must exhibit second-singular Set B agreement. This pattern is schematized in (12) below.

- (11) **Examples of Set B agreement in AF:** (Preminger, 2011, exx 21–22)

- a. Ja rat x-{\check{a}t/*\emptyset}-axa-n ri achin.
 FOC you COM-{B_{2sg}/*B_{3sg}}-hear-AF the man
 'It was YOU that heard the man.'
- b. Ja ri achin x-{\check{a}t/*\emptyset}-axa-n rat.
 FOC the man COM-{B_{2sg}/*B_{3sg}}-hear-AF you
 'It was THE MAN that heard you.'

- (12) **Agreement patterns in (11):**

- a. subject_{2sg} aspect – B_{2sg} – verb – AF object_{3sg} (=11a)
 ●—————●
- b. subject_{3sg} aspect – B_{2sg} – verb – AF object_{2sg} (=11b)
 ●—————●

Previous researchers have described this pattern of agreement as obeying the salience hierarchy in (13). That is, the Set B agreement on an AF verb will look at both its subject and its object and choose the ϕ -features of the argument which is higher on the hierarchy (13). This explains the pattern observed in (11): in both cases, the two arguments of the verb are second-singular and third-singular, and the second-singular argument is higher on the hierarchy. This pattern of agreement in AF verbs is observed in Kaqchikel (Preminger,

2011), as well as in the related Mayan languages of Tz'utujil, Sakapultek, Sipakapense, and K'iche' (Stiebels 2006, and references therein).

- (13) **Salience hierarchy:** (Stiebels, 2006)
 first/second-person > third-plural > third-singular

Details of the pattern of agreement realized under AF will become important in section 5.

2.2 AF-triggering constructions

There are four syntactic contexts which trigger AF in Kaqchikel: subject *wh*-questions, subject relative clauses, subject focus constructions, and subject existentials. Examples of each construction in both subject and object variants are given in (14–17). AF is limited to transitive verbs; intransitive verbs never undergo AF.

- (14) **Wh-questions:**

- a. Achike x-∅-tj-ö ri wäy?
 who COM-B_{3sg}-eat-**AF** the tortilla
 'Who ate the tortilla?' (=2)
- b. Achike x-∅-u-těj ri a Juan?
 what COM-B_{3sg}-A_{3sg}-eat Juan
 'What did Juan eat?'

- (15) **Relative clauses:**

- a. [Ri xteni' (ri) x-∅-tz'-et-ö roj] x-e-wär.
 the girls RC COM-B_{1pl}-see-**AF** 1pl COM-B_{3pl}-sleep
 '[The girls who saw us] slept.'
- b. [Ri xteni' (ri) x-e-qa-tz'ët roj] x-e-wär.
 the girls RC COM-B_{3pl}-A_{1pl}-see 1pl COM-B_{3pl}-sleep
 '[The girls that we saw] slept.'

- (16) **Focus constructions:**

- a. Ja ri xta Maria x-∅-tz'-et-ö rte' ri a Juan.
 FOC Maria COM-B_{3sg}-see-**AF** mother Juan
 'It was Maria who saw Juan's mother.'
- b. Ja ri xta Maria x-∅-u-tz'ët rte' ri a Juan.
 FOC Maria COM-B_{3sg}-A_{3sg}-see mother Juan
 'It was Maria that Juan's mother saw.'

(17) **Argument existentials:**

- a. $\overline{K'o}$ x- \emptyset -tz'et- \ddot{o} roj.
 \exists COM-B_{1pl}-see-**AF** 1pl
'Someone saw us.'
- b. $\overline{K'o}$ x- \emptyset -qa-tz'ët roj.
 \exists COM-B_{3sg}-A_{1pl}-see 1pl
'We saw someone.'

Each of the constructions above involve \overline{A} -movement of an argument to preverbal position. In each of the (a) examples in (14–17) above, where movement of the subject is involved, the AF form of the verb is required. Corresponding object-extractions (b) do not trigger AF. The generalization thus far, then—and the generalization presented in all prior literature on Mayan AF (Stiebels 2006; Norcliffe 2009; Coon et al. 2011; a.o.)—is that AF occurs if and only if the subject of a transitive verb is \overline{A} -moved.

We can further refine this description by looking at cases of long-distance \overline{A} -movement. The contrast in (18) below shows that long-distance movement of an embedded subject requires AF on the embedded verb, but does not allow AF on the matrix verb, “think,” which is adjacent to the surface position of the moved subject *achike*. AF affects transitive verbs whose subjects are extracted, not those verbs which are simply adjacent to an \overline{A} -moved transitive subject.

(18) **Long-distance subject extraction:**

- a. ✓ Achike n- \emptyset -a-b'ij rat [chin x- \emptyset -tz'et- \ddot{o} roj]
who INC-B_{3sg}-A_{2sg}-think 2sg that COM-B_{1pl}-see-**AF** 1pl
'Who do you think saw us?' ✓ V [V-**AF**]
- b. * Achike n-a-b'i-n rat [chin x- \emptyset -tz'et- \ddot{o} roj]
who INC-B_{2sg}-think-**AF** 2sg that COM-B_{1pl}-see-**AF** 1pl *V-**AF** [V-**AF**]
- c. * Achike n- \emptyset -a-b'ij rat [chin x- \emptyset -r-tz'ët roj]
who INC-B_{2sg}-A_{2sg} 2sg that COM-B_{1pl}-A_{3sg}-see 1pl *V [V]
- d. * Achike n-a-b'i-n rat [chin x- \emptyset -r-tz'ët roj]
who INC-B_{2sg}-think-**AF** 2sg that COM-B_{1pl}-A_{3sg}-see 1pl *V-**AF** [V]

2.3 AF is not an antipassive

Some previous literature on Mayan languages has described AF as a “focus antipassive” or “agentive antipassive” (Larsen and Norman, 1979; Dayley, 1981, a.o.). In this section I briefly note that the AF construction which is our focus here is distinct from an antipassive.

An *antipassive* intransitivizes a verb by demoting the object into an oblique. The idea would be that Mayan languages with AF may have a restriction that only absolutive argu-

ments can be \bar{A} -extracted, and therefore the antipassive is used in order to turn the subject of a transitive clause (ergative) into a subject of an intransitive clause (absolutive). Such antipassive strategies for transitive subject extraction are observed in a number of ergative languages; most famously in Dyirbal (Pama-Nyugan) but also in a number of Austronesian and Inuit languages.

However, as argued by Smith-Stark (1978); Aissen (1999a); Stiebels (2006), the AF construction must be distinguished from an antipassive. First, many Mayan languages, including Kaqchikel, have a true antipassive with distinct morphology. Example (20b) below gives a Kaqchikel antipassive. The antipassive suffix in (20) is *-on*, in contrast to the AF suffix for the same verb in (21), which is *-ö*. Second, the theme argument in the antipassive (if expressed at all) is expressed using the relational noun *ichin*, which I gloss as OBL in (20) below. In contrast, neither argument in the AF construction is demoted to an oblique (21). Third and relatedly, the Set B morpheme on the antipassive verb must cross-reference the subject. In contrast, the Set B marker in Kaqchikel can cross-reference either the extracted subject (21a) or the object (21b), as mentioned above in section 2.1. Finally, AF can only be used if the subject is \bar{A} -extracted, in contrast to the antipassive, which has no such restriction.

(19) **A baseline transitive clause:**

X-at-in-tz'ët.
COM-B_{2sg}-A_{1sg}-see

'I saw you.'

(20) **An antipassive in Kaqchikel (McKenna Brown et al., 2006):**

Y-i-tz'et-on (aw-ichin).
INC-B_{1sg}-see-AP A_{2sg}-OBL

'I see (you).'

(21) **AF is distinct from the antipassive:**

a. Ja yin x-i-tz'et-ö ri a Juan.
FOC 1sg COM-B_{1sg}-see-AF Juan

'It's ME that saw Juan.'

b. Ja ri a Juan x-i-tz'et-ö yin.
FOC Juan COM-B_{1sg}-see-AF 1sg.

'It's JUAN that saw me.'

2.4 Argument existentials

It's worth taking a moment to discuss examples such as (17a), which involve what I call argument existentials, particularly as the previous literature has overwhelmingly focused on *wh*-questions, focus constructions, and relative clauses as AF-triggering environments.⁶ Kaqchikel has the existential operator *k'o* and negative existential *majun*.⁷ While these items are commonly translated as indefinites such as "someone/something" and "noone/nothing," respectively, their behavior is different than other indefinites in Kaqchikel such as those introduced with the indefinite determiner *jun* "one." First, *k'o* and *majun* argument existentials must be in preverbal position:

(22) *K'o, majun must be in preverbal position:*

- a. Baseline: *pastel* in post-verbal object position
 Yin x- \emptyset -in-tëj ri/jun pastel.
 I COM-B_{3sg}-A_{1sg}-eat the/one cake
 'I ate the/a cake.'
- b. ✓ (Yin) *k'o pastel* x- \emptyset -in-tëj. d. * (Yin) x- \emptyset -in-tëj k'o pastel.
 I \exists cake COM-B_{3sg}-A_{1sg}-eat I COM-B_{3sg}-A_{1sg}-eat \exists cake
 'I ate some cake.'
- c. ✓ (Yin) *majun pastel* x- \emptyset -in-tëj. e. * (Yin) x- \emptyset -in-tëj majun pastel.
 I \nexists cake COM-B_{3sg}-A_{1sg}-eat I COM-B_{3sg}-A_{1sg}-eat \nexists cake
 'I ate no cake.'

Second, *k'o* and *majun* can move long-distance with scope consequences. In example (23a), the existential *k'o* controls the embedded verb's subject and therefore triggering the AF form. The existential is interpreted within the scope of the matrix clause "everyone thinks..." However, *k'o* can also surface in the matrix clause as in (23b), which introduces

⁶But note that similar existential constructions which trigger AF are also attested in Jakaltek (Grinevald Craig, 1979, fn. 8), K'iche' (Campbell, 2000, fn. 13), Poqomam (Dayley 1981, discussed in Stiebels 2006), Tzotzil (Aissen, 1999a), Tz'utujil (Dayley 1985, fn. 8, discussed in Duncan 2003), and Yucatatec Maya (Tonhauser, 2003). However, some of these existential constructions in other Mayan languages may be a biclausal combination of an existential predicate taking a relative clause introduced by a relative pronoun or *wh*-word. We will see later in this section that argument existential constructions in Kaqchikel do not underlyingly involve the formation of a relative clause.

See also Hedberg (1988) who observes that transitive subject existentials trigger AF in another variety of Kaqchikel.

⁷Note that Kaqchikel also has an existential predicate *k'o*, which is a different lexical item than the existential operator *k'o*. We can distinguish these two items by their inflection and lack thereof: the predicate *k'o* exhibits Set B agreement with its argument, but the argument existential *k'o* never shows agreement. Additionally, note that *majun* looks like the negation *ma* and the numeral *jun* 'one.' However, I argue that it is not compositional in the synchronic grammar: when the numeral 'one' is actually compositionally negated, it shows the irrealis clitic *ta* which normally cooccurs with the negation *ma*. The use of *majun*, however, does not trigger the use of *ta*.

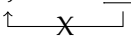

Note that the island diagnostics in (24–25) only show that *long-distance* movement of the existential operator *k'o* and negative counterpart *majun* are necessarily \bar{A} -movement. This has not been shown for the local movement of *k'o/majun* to a preverbal position, as in (22). However, I argue that taking all *k'o/majun* movements to be \bar{A} -movement is the most theoretically parsimonious move. This affords the generalization that it is \bar{A} -operators and only \bar{A} -operators that cannot stay in a lower, theta position and instead obligatorily move to preverbal position; as well as the generalization that all the AF-triggering environments are those where a transitive subject has been \bar{A} -extracted.

3 Kaqchikel AF is locality-sensitive

In the previous section we surveyed the syntactic environments which trigger AF in Kaqchikel and observed that all of these constructions involve \bar{A} -movement of the transitive subject. In this section we will see that the distribution of AF in Kaqchikel is more complicated. I will show that \bar{A} -movement of a transitive subject is a necessary but not sufficient condition to trigger AF. When additional material is introduced between the verb and the landing site of subject movement, the subject extraction no longer triggers AF. I argue that this motivates a *locality-sensitive view* of AF; that is, that the true trigger of AF is *movement that is too short*, a notion that will be formalized in the next section.

The two classes of transitive subject extraction are schematized in (26) below. The examples we've seen up until now are as in (26a), where the subject \bar{A} -movement is very short and thus triggers the AF verb form. The data in this section will add another pattern, schematized in (26b): in cases of subject-extractions which cross over additional material, *the need for AF disappears*. This contrast motivates the locality-based view: even though the subject is still being \bar{A} -extracted, *because this movement is now necessarily longer*, AF is not triggered.

(26) **Two classes of transitive subject extraction:**

- a. $[_{CP}$ subject $[_{TP}$ ___ ...

 \Rightarrow movement too short, Agent Focus required
- b. $[_{CP}$ subject [...*intervening material*... $[_{TP}$ ___ ...

 \Rightarrow movement now long enough, no Agent Focus!

3.1 Intervening adverbs

I begin with the first class of motivating examples: the obviation of AF by intervening adverbs. Recall that in a simple subject *wh*-question (2/14a), repeated here as (27a), AF is required. In example (27b), the baseline example is modified with the adverb *kanqtzij* “actually” intervening between the fronted *wh*-word and the verb. In this case *the AF form of the verb is not required* and in fact cannot be used, as example (27c) shows.

(27) **Intervening adverbs can obviate AF:**

- a. Baseline subject *wh*-question (14a repeated):

Achike x-∅-tj-ö ri wäy?
 who COM-B_{3sg}-eat-**AF** the tortilla

‘Who ate the tortilla?’ (=14a)

- b. Intervening adverb makes AF unnecessary:

Achike **kanqtzij** x-∅-u-těj ri wäy?
 who actually COM-B_{3sg}-A_{3sg}-eat the tortilla

‘Who actually ate the tortilla?’

- c. In fact, the AF form is now ungrammatical:

* Achike **kanqtzij** x-∅-tj-ö ri wäy?
 who actually COM-B_{3sg}-eat-**AF** the tortilla

This obviation of AF occurs in other AF-triggering environments as well. The examples below involve the subject relative clause “the man who eats tortillas.” In the baseline, (28a), we see that the verb “eat” must be in its AF form. In example (28b), the temporal modifier *nojel mul* “always” is inserted between the relative clause marker *ri* and the verb. The result is again a flip in the pattern of AF realization: AF is no longer required for the subject relative, and is in fact no longer grammatical.

(28) **Intervening adverb in a subject relative clause:**

- a. ri achin ri *n-∅-u-těj / ✓n-∅-tj-ö wäy
 the man RC NONPAST-B_{3sg}-A_{3sg}-eat / NONPAST-B_{3sg}-eat-**AF** tortilla
 ‘the man who eats tortillas’

- b. ri achin ri **nojel mul** ✓n-∅-u-těj / *n-∅-tj-ö wäy
 the man RC all time NONPAST-B_{3sg}-A_{3sg}-eat / NONPAST-B_{3sg}-eat-**AF** tortilla
 ‘the man who always eats tortillas’

I propose that the contrast between the *wh*-questions in (27a–b) and between the relative clauses in (28a–b) can be explained through a locality-sensitive view of AF. **In particular,**

here I adopt Cinque’s (1999) approach to the syntax of adverbs, which posits the projection of an AdvP in the clausal spine in order to host the adverb. In (27a), movement of the subject *wh* was too short and thus the AF derivation was required to avoid this anti-locality violation. However, in (27b), the intervening adverb projects the additional AdvP structure in the clause, allowing for movement of the subject *wh* to proceed without being too short, and therefore without resorting to an AF form. Similarly, the movement of the subject relative clause operator was too short in (28a), triggering AF, but was long enough in (28b) due to the addition of the intervening adverb’s functional projection.⁹

3.2 Multiple extractions

The second class of motivating examples comes from clauses which involve multiple \bar{A} -extractions. In Kaqchikel, if a clause contains multiple arguments that require fronting to a preverbal position, all of them are fronted.¹⁰ This results in clauses where multiple \bar{A} -operators are before the verb.

Consider the two examples in (29). Both are formed of transitive clauses where one argument is the *wh*-word *achike* and another is the argument existential *k’o*. Both have the same basic word order, “*achike k’o* verb.” However, one verb is in its AF form and the other is not and this corresponds to a radical difference in interpretation.

(29) **A minimal pair of multiple extractions:**

- | | |
|---|--|
| <p>a. Achike k’o x-\emptyset-tz’et-\ddot{o}?
 who \exists COM-B_{3sg}-see-AF
 ✓ ‘Who did someone see?’
 * ‘Who saw someone?’</p> | <p>b. Achike k’o x-\emptyset-u-tz’et?
 who \exists COM-B_{3sg}-A_{3sg}-see
 * ‘Who did someone see?’
 ✓ ‘Who saw someone?’</p> |
|---|--|

Example (29a) is an object *wh*-question with a subject existential. The operator controlling the subject is thus the *k’o* in immediately preverbal position. The AF on the verb in (29a) is completely expected: the movement of the subject *k’o* to preverbal position triggered the AF.

Example (29b), on the other hand, contains a puzzle. Example (29b) is a subject *wh*-question with an object existential. Thus the operator controlling the subject is the *wh*-word *achike* which has been \bar{A} -moved to the beginning of the clause. Subject *wh*-questions normally trigger AF, as we have seen, but the verb in (29b) does not have AF. In fact, the AF

⁹Many but not all preverbal adverbs have this effect. These do not form natural classes—for example, *anināq* ‘quickly’ obviates AF in this way, but the synonym *jonamin* does not. Formally, I adopt a suggestion by an anonymous reviewer that the adverbs which do not obviate AF are those which are adjoined to projections such as TP, vP, and VP that are always present, in contrast to those which obviate AF which require the projection of an additional functional projection (AdvP) (Cinque, 1999). Future work is required to identify independent correlates of the distinction between these two classes of adverbs.

¹⁰With one exception: in matrix multiple *wh*-questions, only one *wh*-word fronts.

on (29a) and the lack of AF on (29b) is the only difference on the surface between the two questions.

The pattern of AF in the examples in (29a,b) is explained under the locality-sensitive view of AF proposed here. In example (29a), the subject moves to immediately preverbal position, into the specifier of a maximal projection immediately above TP. This movement is too short and will require the last-resort AF derivation. The subsequent object movement to a higher specifier position does not affect the distance of the subject-movement. In example (29b), on the other hand, the object moves first to the lower preverbal position. The subject movement will then cross over the intervening object and will not be too short. The lack of AF in (29b) is thus expected under this view. The relevant structures for (29a,b) are schematized below.

(30) **Explaining the pattern of AF in multiple extractions:**

a. [CP object [CP subject [TP ___ ... [vP ... V ___]]] (=29a)

⇒ movement too short, Agent Focus required

b. [CP subject [CP object [TP ___ ... [vP ... V ___]]] (=29b)

⇒ movements long enough, no Agent Focus

Examples with other combinations of preverbal \bar{A} -operators all follow this pattern in (29): AF is required if the subject of the transitive verb has \bar{A} -moved to *immediately preverbal position* and AF is not used otherwise. Here below are additional examples which **bear** out this pattern.

(31) **Relative clause & k'o existential:**

a. ri achin ri [k'o x- \emptyset -tj- \ddot{o}] the man RC \exists COM-B _{3sg} -eat- AF ✓ 'The man who someone ate' * 'The man who ate something'	b. ri achin ri [k'o x- \emptyset -u-těj] the man RC \exists COM-B _{3sg} -A _{3sg} -eat * 'The man who someone ate' ✓ 'The man who ate something'
---	--

(32) **Ja focus & k'o existential:**

a. Ja yin k'o x-i-tz'et- \ddot{o} . FOC me \exists COM-B _{1sg} -see- AF ✓ 'It's me that someone saw.' * 'It's me who saw someone.'	b. Ja yin k'o x- \emptyset -in-tz'ët. FOC me \exists COM-B _{3sg} -A _{1sg} -see * 'It's me that someone saw.' ✓ 'It's me who saw someone.'
---	--

(33) **K'o & k'o:**

a. K'o k'o x- \emptyset -tz'et- \ddot{o} . \exists \exists COM-B _{3sg} -see- AF ✓ There's something that s.o. saw. * Someone saw something.	b. K'o k'o x- \emptyset -u-tz'ët. \exists \exists COM-B _{3sg} -A _{3sg} -see * There's something that s.o. saw. ✓ Someone saw something.
--	--

(34) **Relative clause & *ja* focus:**

- a. ri achin ri [ja ri xta Maria x-∅-tz'et-ö]
the man RC FOC Maria COM-B_{3sg}-see-AF
✓ 'the man who MARIA (but not others) saw'
* 'the man who saw MARIA (but not others)'
- b. ri achin ri [ja ri xta Maria x-∅-u-tz'ët]
the man RC FOC Maria COM-B_{3sg}-A_{3sg}-see
* 'the man who MARIA (but not others) saw'
✓ 'the man who saw MARIA (but not others)'

Broadwell (2000, 2007) also presents one such pair, based on his work on the variety of Kaqchikel spoken in Patzicía.¹¹

(35) ***Ja* focus & *man jun* negative existential:**

- a. Ja ri wä'y man jun achi *x-∅-u-tij / ✓x-∅-tij-o'.
FOC the tortilla ‡ person COM-B_{3sg}-A_{3sg}-eat / COM-B_{3sg}-eat-AF
'It's the TORTILLAS that nobody ate.' (Broadwell 2000 ex. 46; 2007 ex. 42)
- b. Ja ri a Ramón man jun wä'y ✓x-∅-u-tij / *x-∅-tij-o'.
FOC Ramón ‡ tortilla COM-B_{3sg}-A_{3sg}-eat / COM-B_{3sg}-eat-AF
'It was RAMÓN who ate no tortillas.' (Broadwell 2000 ex. 44; 2007 ex. 41)

In all of the examples in (29–34), AF is required in order to interpret the immediately preverbal operator as the subject (a). If AF is not used (b), the operator which is not immediately preverbal is interpreted as the subject. This leads us to the generalization in (36).¹²

(36) **The Kaqchikel AF generalization:**

AF morphology occurs if and only if the subject moves to *immediately preverbal position*.

In all of the (b) examples in (29–34), the immediately preverbal operator was the direct object. However, the generalization in (36) is not limited to combinations of subjects and direct objects in preverbal position. Example (37a) is a baseline showing the obligatory AF in a subject-*wh* question using a ditransitive verb, 'send.' Example (37b) shows that when the indirect object is a *k'o* object existential and moved before the verb, AF is not used, as the subject is no longer in immediately preverbal position.

¹¹Example (35) follows the orthography given in Broadwell (2000, 2007). Note that *man jun* in (35) is the non-existential operator in Patzicía Kaqchikel, corresponding to *majun* in the Patzún variety that I focus on here.

¹²Broadwell (2000, appendix) also makes a similar observation in passing, citing the pair repeated here as (35): "In sentences with multiple foci, it is the closest focus that determines whether the actor focus form is used."

(40) **Movement to non-immediately-preverbal position is sensitive to relative clause islands:**

- a. K'õ x-∅-k'ul-ö [ri achin ri k'õ x-∅-u-tz'ët].
 ∃ COM-B_{3sg}-meet-**AF** the man RC ∃ COM-B_{3sg}-A_{3sg}-see
 'Someone met the man who saw s.t.'
- b. *K'õ k'õ x-∅-k'ul-ö [ri achin ri x-∅-u-tz'ët].
 ∃ ∃ COM-B_{3sg}-meet-**AF** the man RC COM-B_{3sg}-A_{3sg}-see
 'There's something_i that someone met the man who saw it_i.'

(41) **Movement to non-immediately-preverbal position is sensitive to adjunct islands:**

- a. K'õ x-∅-b'an-ö jun pastel [rma k'õ x-∅-loq'-ö ri jay].
 ∃ COM-B_{3sg}-make-**AF** a cake because ∃ COM-B_{3sg}-buy-**AF** the house
 'Someone made a cake because someone bought the house.'
- b. *K'õ k'õ x-∅-b'an-ö jun pastel [rma x-∅-loq'-ö ri jay].
 ∃ ∃ COM-B_{3sg}-make-**AF** a cake because COM-B_{3sg}-buy-**AF** the house
 Intended: 'There's someone_i that someone made a cake because they_i bought the house.'

If \bar{A} -operators could be base-generated in non-immediately-preverbal positions, examples (40b) and (41b) should be grammatical. Therefore, \bar{A} -operators in non-immediately-preverbal position must have \bar{A} -moved from argument positions, making the examples above strong support for the view that Kaqchikel AF is a response to movement which is *too short*, as reflected in the generalization in (36).

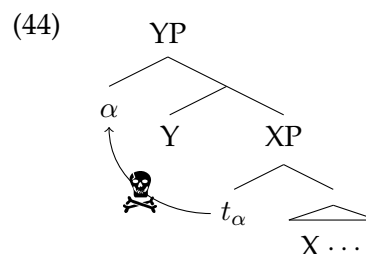
The pattern of AF realization observed with these multiple extraction constructions shows us again that \bar{A} -movement of a transitive subject is only a necessary but not a sufficient condition for AF. In particular, it is *shorter* movements of subjects which trigger AF, while *longer* movements of subjects do not yield AF. In the next section, I will formalize this locality condition on movement and give my proposal for AF in Kaqchikel.

4 Proposal

The examples presented in the previous section motivate a locality-sensitive view of Kaqchikel AF. We saw that movement of transitive subjects across some intervening material does not trigger AF. AF is not responding to the movement of transitive subjects *per se*; it is instead responding to movement that is *too short*. I propose that \bar{A} -movement in Kaqchikel is subject to Spec-to-Spec Anti-Locality, repeated here from (4).

(42) **Spec-to-Spec Anti-Locality:**
 \bar{A} -movement of a phrase from the Specifier of XP must cross a maximal projection other than XP.

(43) **Definition: crossing**
 Movement from position α to position β *crosses* γ if and only if γ **dominates α but does not dominate β** .



The schema in (44) illustrates the configuration which is banned. Movement of the specifier of XP to the specifier of YP crosses only the maximal projection XP, according to the definition of *crossing* stated in (43). This movement violates Spec-to-Spec Anti-Locality.

Bans against movement which is “too close” are not a new idea, though the formulation given here is distinct from other constraints proposed in the literature. Murasugi and Saito (1995), Saito and Murasugi (1999), and Bošković (1994, 1997) propose that a specifier of XP cannot be adjoined locally to that same XP. Similarly, Pesetsky and Torrego (2001) and Abels (2003) have motivated a ban on movement from a complement position of XP to the specifier of XP. Grohmann (2003) offers a different conception of anti-locality, where movement chains contained entirely within a single Domain of the clause (*v*P, TP, and CP) are banned, again enforcing a constraint against movements which are in some sense “too close.” Later, in section 6, I will extend this logic of anti-locality to similar interactions in other languages.

Central to the derivation of Kaqchikel clause structure is the verbal complex and the arguments that it cross-references through agreement. I propose that the Kaqchikel T head has two ϕ -agreement probes: an obligatory ϕ -agreement probe for Set B agreement (B probe) and an *optional* ϕ -agreement probe for Set A agreement with the EPP property (A probe). These two probes cannot agree with the same goal. If T invokes the optional A probe, it will necessarily attract the target DP to Spec,TP. As a result, Set A agreement is uniformly agreement with a DP which is moved to Spec,TP position, and the absence of Set A agreement indicates the absence of a DP in Spec,TP.

- (45) **Two ϕ -probes on T:**
- a. A probe: ϕ -probe with EPP property; realizes Set A agreement; *optional*
 - b. B probe: ϕ -probe; realizes Set B agreement

The choice of whether T’s A probe will be active or not will be determined indirectly by a constraint which prefers derivations which realize as much ϕ -agreement as possible (46).¹³

¹³The constraint XRef applies on an abstract level of feature agreement, rather than evaluating the output morphological form. In particular, we note that the Set B marker is \emptyset in its third-singular form. In such cases, agreement of a third-singular goal by the B probe will count for satisfaction of XRef, even though the resulting morphology is \emptyset .

(46) **XRef (Woolford, 2003):**

Cross-reference all arguments. (An argument is cross-referenced when its features are matched by the features of an agreement morpheme or clitic.)

The effect of this constraint (46) will be to trigger the use of T's optional A probe in transitive clauses but not intransitive clauses. In transitive clauses, the most arguments can be cross-referenced by the verbal complex (realizing both Set A and Set B agreement) if the A probe is invoked. The A probe will agree with the subject and move it to Spec,TP and the B probe will agree with the object. In intransitive clauses, however, there is a single ϕ -agreement target, which must be ϕ -agreed with by the obligatory B probe.¹⁴ This will be the source of ergative behavior, differentiating subjects of transitives from objects of transitives and subjects of intransitives. This approach to ergativity will be discussed in further sections.

Subjects of transitive verbs are then uniquely in danger of violating Spec-to-Spec Anti-Locality because they are in a uniquely high, Spec,TP position in the clause. In situations where the constraints Spec-to-Spec Anti-Locality (4) and XRef (46) cannot both be satisfied, AF occurs. In such situations, the subject will skip the Spec,TP position (thereby foregoing Set A agreement), resulting in the modified AF verb form to be produced, and satisfying Spec-to-Spec Anti-Locality through a longer movement step. Stated as violable constraints, I argue that Spec-to-Spec Anti-Locality outranks XRef. Later, in section 5, I will further discuss the interaction of these ranked, violable constraints, and formally model their behavior.

4.1 The derivation of Kaqchikel clause structure



I begin by describing the derivations of basic, non-AF clauses in Kaqchikel. I will first illustrate the derivation of a non-AF transitive clause.

In a transitive clause, the object is base-generated in the complement of V and the subject is base-generated in the specifier of vP (47a). T is merged and its A probe agrees with the subject and attracts it to Spec,TP (47b). Note that Spec, vP and Spec,TP positions are both linearized as right specifiers, following Aissen (1992), deriving the basic VOS word order of Kaqchikel, but they are illustrated here attaching to the left.¹⁵ The B probe on T agrees with the object. Head movement of V to v and then T results in realization of the entire verbal complex in T (47c).

¹⁴The use of the B probe in intransitives could alternatively be described as the result of an Economy constraint on movement, as the A probe will trigger movement of its target but the B probe does not. See footnote 23.

¹⁵Subject-initial word orders will be discussed in section 4.4.

(47) **Derivation for transitive clauses:**

- a. Base-generate both arguments in vP:
[_{vP} subject v [_{VP} V object]]
- b. Merge T; subject moves to Spec,TP to feed ϕ -agreement of both arguments:
[_{TP} subject T [_{vP} ___ v [_{VP} V object]]]

- c. Head movement of V → v → T:
[_{TP} subject T+v+V [_{vP} ___ t_{v+V} [_{VP} t_V object]]]


The verbal complex spells out the ϕ -features valued by the A and B probes, subject to the morphological realization rules in (48).¹⁶ This results in the desired pattern of agreement, repeated here from (7a):

(48) **The realization of the Kaqchikel verbal complex (T+v+V):**

Template: aspect – Set B – Set A – verbal root – (AF)

- a. Set A: If T's optional A probe was used, realize the ϕ -features of the goal agreed with by the A probe. Otherwise, realize no Set A marker.
- b. Set B: Realize the ϕ -features of the goal agreed with by the B probe.¹⁷
- c. AF suffix: If the verb has an argument whose ϕ -features are not cross-referenced on the verb, realize the AF suffix.¹⁸

¹⁶Tada (1993) observes a generalization across Mayan between the position of the absolutive (Set B) agreement marker and the existence of AF: with few exceptions, Mayan languages with Set B markers preceding the verbal root exhibit AF and Mayan languages with Set B markers following the verbal root do not. See Coon et al. (2011) for further discussion. Kaqchikel follows this generalization, having its Set B marker before the verbal root and exhibiting AF.

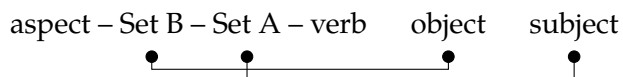
My proposal here will not attempt to explain this correlation, describing the position of the Set B marker as simply part of the shape of the verbal complex in (48), and instead focusing on the Kaqchikel-internal distribution of AF.

It is not clear that this is a problem for my analysis. As noted by Aldridge (2012), Tada's generalization does not hold outside of Mayan: in the Austronesian language family, there are languages with structurally higher and lower sources of absolutive which have a syntactically ergative extraction asymmetry similar to AF. (See Aldridge (2008) for discussion of both types of languages in Austronesian.) It is possible that the correlation observed by Tada reflects a historical codevelopment between AF and the preverbal Set B markers, rather than a deep fact about the source of syntactic ergativity. See also Henderson et al. (2013) for evidence that AF in Mayan may not be a unified phenomenon.

¹⁷In some cases, there will be multiple potential ϕ -agreement targets for the B probe. As mentioned above, in such cases the Set B agreement target will be determined, descriptively speaking, following the salience hierarchy in (13). The effect of this salience hierarchy on the choice of agreement target will be formally modeled in section 5.

¹⁸The realization of the AF suffix depends on the verb stem type: if the verb stem is V-final or V_j-final, the AF suffix is -n (in the latter case, replacing the final -j consonant); otherwise it is -ò.

(49) **Full agreement transitive verb: (=7a)**



In derivation (47), **the use of the optional A probe on T** is necessary to satisfy the XRef constraint (46). As a transitive clause, there are two potential ϕ -agreement targets, the subject and the object. Without **the use of the A probe, only one argument will be ϕ -agreed with, by the B probe**. The Kaqchikel TP does not **inherently** have a requirement that it have a specifier—instead, in regular transitive clause derivations (47), **agreement with the subject by the optional A probe** occurs in order to maximize ϕ -agreement, **triggering the movement of the subject to Spec,TP**.

For the purposes of ϕ -agreement, CPs will also behave as targets, with default third-singular ϕ -features. This results in derivations for transitive clauses with CP complements in which the subject is cross-referenced using Set A morphology, not Set B, as we observe in (50). Therefore it must be the case that CPs participate in this XRef calculus, otherwise we would predict CP-embedding transitive verbs (such as “think” in (50)) to be morphologically intransitive and realize no Set A agreement.¹⁹

(50) **Subjects of CP-embedding transitive verbs also agree via Set A, not Set B:**

Roj \checkmark n- \emptyset -qa-b'ij / *y- \emptyset j-(r)-b'ij [CP chin ...
we INC-B_{3sg}-A_{1pl}-think / INC-B_{1pl}-(A_{3sg})-think that

‘We think that...’

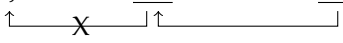
Now let’s see what happens if the subject is an \bar{A} -operator—a *wh*-word, focused constituent, relative clause operator, or argument existential—which must move to the CP periphery to take scope. This is a case where the two constraints of Spec-to-Spec Anti-Locality and XRef conflict: Spec-to-Spec Anti-Locality does not allow an \bar{A} -movement from Spec,TP to Spec,CP, but if the subject does not pass through the intermediate Spec,TP position, the verb will only ϕ -agree with one of the two arguments.

We first consider a derivation which builds on the standard derivation for transitive clauses in (47). \bar{A} -movement of the subject from Spec,TP to Spec,CP will be a violation of Spec-to-Spec Anti-Locality (51a). Instead, the AF clause derivation in (51b) is used, with the subject moving directly from Spec,vP to Spec,CP.

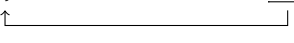
¹⁹Note that Kaqchikel lacks ditransitives such as English *tell* which take both DP and CP internal arguments. Kaqchikel also lacks true ditransitives with two DP arguments, with verbs such as *send* instead having a DP direct object which is targeted by Set B agreement and a PP indirect object which is not ϕ -agreed with.

(51) **Subject extraction with and without AF:**

a. Regular transitive clause derivation (47) and \bar{A} -movement of subject:

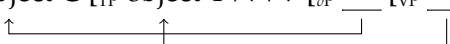
* [CP subject C [TP ___ T+v+V [_{vP} ___ [VP object]]]]

violates Spec-to-Spec Anti-Locality!

b. AF clause derivation, with no subject movement to Spec,TP:

✓ [CP subject C [TP T+v+V [_{vP} ___ [VP object]]]]

⇒ “subject – AF verb – object”

Note that we could imagine an alternative derivation for subject-extraction, where the A probe on T agrees with the object and attracts it to Spec,TP, the B probe agrees with the subject, and the subject moves directly from Spec,*vP* to Spec,CP. This derivation is schematized in (52) below. This derivation predicts a full agreement verb (no AF morphology) with a Set A marker cross-referencing the *object* and a Set B marker cross-referencing the *subject*—the *opposite* of the normal Kaqchikel agreement alignment. If this derivation were possible, we expect it to fully satisfy both Spec-to-Spec Anti-Locality and XRef. However, it is not available, as evidenced by the ungrammaticality of (53) with the intended subject extraction reading.

(52) **Impossible subject-extraction derivation:**

[CP subject C [TP object T+v+V [_{vP} ___ [VP ___]]]]

⇒ “subject – inflected verb – object”

- (53) Achike x-∅-a-tz'ët rat?
 who COM-B_{3sg}-A_{2sg}-see you
 * ‘Who saw you?’
 ✓ ‘Who did you see?’

I propose that the derivation in (52) is impossible due to Phase Impenetrability. I follow Bošković’s (2003) proposal that Agree is not sensitive to Phase Impenetrability but movement is,²⁰ and therefore the effective locality conditions on the A probe and B probe are different. I adopt for Kaqchikel the common view that CP and *vP* are phases. Because the A probe moves its goal (the EPP property), it cannot probe within the lower phase and therefore its only potential goal in a transitive clause is the subject generated in Spec,*vP*. In this way the derivation in (52) will never be generated. In contrast, because the B probe does not trigger movement, arguments both at the *vP* edge and within *vP* proper are visible for probing by the B probe.

AF in Kaqchikel shows us that the grammar prioritizes satisfaction of Spec-to-Spec Anti-Locality over the needs of XRef. The subject will bypass Spec,TP and move directly from

²⁰Bošković (2003) cites Stjepanović and Takahashi (2001) and Lee (2003) as precursors for this view. Bošković (2003, 2007) provides a theoretical motivation for this difference.

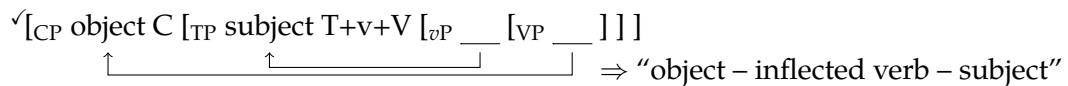
its Spec,*v*P theta-position to Spec,CP (51b). This movement of the subject to Spec,CP will not violate Spec-to-Spec Anti-Locality.²¹ As T's optional A probe is not used, the verbal complex will only show Set B agreement and spell out a modified status suffix, i.e. the AF suffix. As the AF verb only ϕ -agrees with one argument, XRef will be violated in this case. In section 5, I will present the interactions between these constraints using tableau notation. For the remainder of this section, however, I will use a ranking of Spec-to-Spec Anti-Locality over XRef without explicit tableau comparisons.

4.2 Modeling ergativity

The Mayan languages have been consistently described as ergative in the literature, with ergative-absolutive agreement alignment and (for some) a syntactically ergative extraction asymmetry resulting in the distribution of AF studied here. In this subsection I will show how the system introduced above, notably with the constraints Spec-to-Spec Anti-Locality and XRef, accounts for the ergative pattern of agreement alignment as well as the syntactically ergative distribution of AF.

In the previous subsection I showed how in simple transitive clauses, when the subject is \bar{A} -moved, the verb is realized in its AF form. I begin this subsection by considering the derivation of a transitive clause with non-subject extraction as in (54) below. Recall that \bar{A} -movement of non-subjects never triggers AF. In order to maximize ϕ -agreement, the A probe on T will agree with the subject and attract it to Spec,TP and the B probe will agree with the object, as in the standard transitive clause derivation (47). Movement of a non-subject will necessarily cross multiple maximal projections and therefore satisfy Spec-to-Spec Anti-Locality. This derivation satisfies both Spec-to-Spec Anti-Locality and XRef, and results in a full agreement (non-AF) verb form.

(54) **Regular transitive clause derivation (47) with \bar{A} -movement of object:**



Next we turn to the derivation of intransitive clauses. The first property we will look at is the alignment of the agreement morphemes on the verb. Recall that with intransitive verbs, the Set B morpheme cross-references the subject and there is no Set A morpheme. The derivation of an unergative clause is sketched below in (55). The B probe on T agrees

²¹Similar “skipping” strategies are surveyed cross-linguistically in Rizzi and Shlonsky (2007). See also Schneider-Zioga (2007) for a similar skipping derivation forced by an anti-locality constraint in Kinande and Rouveret (2002) for brief discussion of a similar skipping derivation for anti-agreement in Celtic languages. Similar interactions between agreement and anti-locality yielding anti-agreement effects in languages other than Kaqchikel will be discussed in section 6.

The other aspect of ergativity in Kaqchikel is of course the \bar{A} -extraction asymmetry observed in the distribution of AF. Only \bar{A} -extraction of subjects of transitive clauses triggers AF morphology. Consider a derivation with \bar{A} -extraction from an intransitive clause, below. We begin with the derivation of an intransitive clause, as in (55), where the subject does not move to Spec,TP, as argued above.

(56) **Subject extraction from an (unergative) intransitive clause:**

a. Derivation of an intransitive TP:

$$[\text{TP } T+v+V \text{ } [_{vP} \text{ subject } t_{v+V} \text{ } [_{VP} t_V \text{ }]]]$$

\uparrow └───┘ \uparrow

b. \bar{A} -movement of the intransitive subject:

$$\checkmark [_{CP} \text{ subject } C \text{ } [_{TP} T+v+V \text{ } [_{vP} \text{ } \text{ } [_{VP} \text{ }]]]] \quad \Rightarrow \text{“subject – inflected verb”}$$

\uparrow └───┘

When the intransitive subject is \bar{A} -moved to preverbal position, it will move from within vP : from Spec, vP in the case of unergatives (56b) or from the complement of V in unaccusatives (not illustrated). Either way, this movement step will cross over both the vP and TP maximal projections, and therefore will always satisfy Spec-to-Spec Anti-Locality. The intransitive subject does not move through Spec,TP when it is extracted—doing so would introduce a violation of Spec-to-Spec Anti-Locality, as well as use an additional, unnecessary movement step, without satisfying XRef any better than in (56). This proposal thus derives the “syntactically ergative” basic distributional facts of AF—AF is triggered by \bar{A} -movement of transitive subjects but not other kinds of arguments—from the interaction of the constraints Spec-to-Spec Anti-Locality and XRef.

4.3 Deriving the full distribution of AF

In section 3 I presented new data where a transitive subject moves over intervening material and does *not* trigger AF, motivating the locality-sensitive view of AF. AF is not a response to the movement of subjects of transitive verbs (ergative arguments) *per se*, but rather a strategy to avoid the violation of Spec-to-Spec Anti-Locality. In this subsection I will demonstrate how this proposal derives this full pattern of Kaqchikel AF.

(Malchukov, 2008). I have chosen to state this constraint in terms of cross-referencing here as ϕ -agreement is clearly visible in Kaqchikel, whereas the assignment of Case is not.

The logic of this system is similar to the dependent case system of Marantz (1991), which models ergative case in an ergative/absolute system and accusative case in a nominative/accusative system as “dependent” cases, whose occurrence depends on the existence of a competitor in the same local domain. The proposal here applies a similar logic to ϕ -agreement instead of morphological case marking. The effects of this system are also similar to proposals which prohibit two structural case targets (Alexiadou and Anagnostopoulou, 2001, 2007) or two nodes which are categorically non-distinct (Richards, 2010) from both being in vP , which may lead to one of them vacating the vP .

The first case is the effect of certain preverbal adverbs which obviate the need for AF, schematized in (57). The second is the pattern of AF in multiple extraction constructions: if a transitive subject is moved to a preverbal position above another preverbal \bar{A} -operator, as schematized in (58), AF is not used.

(57) **No AF due to preverbal adverb:**

[_{CP} subject [adverb [_{TP} ___ ... V(*AF)]]

(58) **No AF when moved over another operator:**

[_{CP} subject [_{CP} op [_{TP} ___ ... V(*AF)]]]

We begin with the obviation of AF by intervening adverbs. Consider the derivation of a standard transitive TP (47), repeated below as (59), where the subject moves to Spec,TP. For these adverbs which obviate AF, I follow the functional specifier approach of (Cinque 1999; a.o.), whereby a particular functional projection, AdvP, is projected above TP and hosts the adverb in its specifier. The complementizer is merged above this extended projection. The movement of the subject from Spec,TP to Spec,CP will not violate Spec-to-Spec Anti-Locality in this derivation, as it crosses both TP and AdvP. Therefore the AF derivation will not be used as it does not maximally satisfy XRef, in contrast to the basic case without an intervening adverb, repeated below as (60):

(59) **Derivation for transitive clauses: (=47)**

a. Base-generate both arguments in vP:

[_{vP} subject v [_{VP} V object]]

b. Merge T; subject moves to Spec,TP to feed ϕ -agreement of both arguments:

[_{TP} subject T [_{vP} ___ v [_{VP} V object]]]

c. Head movement of V → v → T:

[_{TP} subject T+v+V [_{vP} ___ *t*_{v+v} [_{VP} *t*_v object]]]

⇒ “inflected verb – object – subject”

(60) **Subject extraction across AdvP satisfies Spec-to-Spec Anti-Locality:**

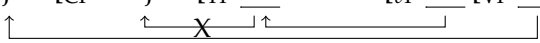
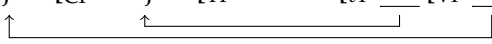
√[_{CP} subject C [_{AdvP} adverb [_{TP} ___ T+v+V [_{vP} ___ [_{VP} object]]]] (cf 51a)

Next we turn to the pattern of AF in multiple extraction constructions. Recall that in examples (29–34), we saw that object-subject-verb word order required AF (the (a) examples) and subject-object-verb clauses did not trigger AF (the (b) examples). Here I will

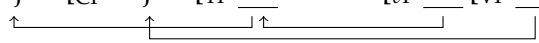
present derivations for these cases schematically. I assume that multiple CP maximal projections will be projected in order to host the multiple \bar{A} -operators in the periphery, with one specifier per CP projection (Watanabe, 1992; Rizzi, 1997).²⁵ In the (a) examples, where the subject is in immediately preverbal position, if the A probe is used and the subject is first moved to Spec,TP, \bar{A} -movement of the subject from Spec,TP to Spec,CP will violate Spec-to-Spec Anti-Locality (61ai). Therefore the AF clause derivation will be used instead, with the subject skipping the Spec,TP position entirely, and triggering the AF verb form (61aii). The object will subsequently move to a higher Spec,CP position.

(61) **Explaining the pattern of AF in multiple extraction constructions:**

a. Subject in immediately preverbal position (29–34a):

- i. * [CP object [CP subject [TP ___ T+v+V [vP ___ [VP ___]]]]]
 *violates S-to-S A-L!*
- ii. ✓ [CP object [CP subject [TP T+v+V [vP ___ [VP ___]]]]]
 ⇒ "O – S – AF verb"

b. Subject in non-immediately-preverbal position (29–34b):

- ✓ [CP subject [CP object [TP ___ T+v+V [vP ___ [VP ___]]]]]
 ⇒ "S – O – non-AF verb"

In contrast, in (61b) the subject moves across another operator. The non-subject (here, object) will first move to Spec,CP above TP, and this movement step will satisfy Spec-to-Spec Anti-Locality, as all non-subject movements do (see 54). The subject will then move to a higher Spec,CP position. Recall that in such multiple extraction constructions, separate maximal projections are used for each of the preverbal \bar{A} -operators. As such, the \bar{A} -movement of the subject will cross both TP and the lower CP maximal projections, satisfying Spec-to-Spec Anti-Locality. **As both constraints are maximally satisfied, this derivation (61b) yielding the full agreement (non-AF) verb form is used.**

Finally, recall that long-distance \bar{A} -movement can also trigger AF, as seen in example (62) below. This contrast teaches us that movement in Kaqchikel must obligatorily move successive-cyclically without skipping the Spec,CP edge, as movement directly out of the embedded Spec,TP position, schematized in (63a), would be predicted to not violate Spec-to-Spec Anti-Locality and yield a non-AF output. The ungrammaticality of (62) without AF also shows that the inability to move from Spec,TP to Spec,CP is not due to some ban against string-vacuous movement, as this movement in (62) would be predicted to cross the

²⁵I remain agnostic here as to whether the multiple CP-level projections are part of a split left periphery that contains multiple heads (Rizzi, 1997) or an extension of a single C head (Watanabe, 1992). This choice is not crucial to the analysis presented.

b. Preverbal subject in relative clause (Daeyoung Sohn, p.c.):²⁸

* ri xten [ri ri a Juan x-∅-u-tz'ët]
 the girl RC Juan COM-B_{3sg}-A_{3sg}-see
 Intended: 'the girl that Juan saw'

Instead, for *ri a Juan* to be a preverbal topic in a question, it must come before the *wh*-word:

(67) **Preverbal subject topic before *wh*-word:** (cf 66a)

Ri a Juan, achike x-∅-u-tëj?
 Juan what COM-B_{3sg}-A_{3sg}-eat

'What did Juan eat?'

This analysis is crucially different from those which view the standard derived subject position (Spec,TP in the terms used here) as a left specifier and the source of preverbal subjects without AF (e.g. Aissen, 1992; Broadwell, 2000). Such an analysis does not accurately predict the limited distribution of preverbal subjects which do not trigger AF. Instead, in the proposal made here, both the subject's base position (Spec,vP) and derived position (Spec,TP) are right specifiers yielding VOS order; SVO order without AF is due exclusively to subject topicalization.

5 Modeling last-resort and its exceptions

The Agent Focus construction is a marked verb form as compared to the non-AF transitive verb form. In section 3 I motivated a new descriptive characterization for when AF is required in Kaqchikel: AF occurs when the subject of a transitive verb is \bar{A} -moved to immediately preverbal position. We have also seen that in contexts where AF is not required, AF is not available. That is, given a particular set of clausal material and fixing its intended interpretation, a transitive verb either must be in its AF form or cannot be in its AF form.²⁹ In this section I will explore the question of why AF is only possible when it is necessary.

²⁸This string does, however, have a possible parse as a subject relative with an exhaustive focus object (Daeyoung Sohn, p.c.):

(i) ri xten [ri (ja) ri a Juan x-∅-u-tz'ët]
 the girl RC FOC Juan COM-B_{3sg}-A_{3sg}-see
 ≈ 'the girl who saw (only) JUAN'

This is expected by the analysis here, as focused constituents do not move to a topic position, and therefore can move within the scope of the relative clause operator. The movement of the object makes the subsequent movement of the subject relative clause operator long enough, not violating Spec-to-Spec Anti-Locality and therefore not triggering AF.

²⁹Note that this characterization does not extend to all Mayan languages with AF. For example, AF is optional in all triggering contexts in Poqomam and Poqomchi' (Stiebels, 2006).

The fact that AF cannot be used when it is not required has motivated its description as a *last-resort* strategy. Consider, for example, the approach taken by Ordóñez (1995); Coon et al. (2011); Assmann et al. (2013), who argue that when the subject is extracted from a transitive verb, there is a problem with the absolutive Case-assignment for the object. For these authors, AF is the spellout of an absolutive Case-assigning head. **It can only be used** to rescue what would otherwise be an ungrammatical derivation. Without such a “last-resort” or “repair” designation on the AF construction, AF could overapply to transitive clauses where the subject has not moved to immediately preverbal position.³⁰

5.1 Formalizing the system

In this paper I have described the “last-resort” nature of AF as the result of an interaction between two ranked, violable constraints: Spec-to-Spec Anti-Locality and XRef. In this section I will model this interaction using the formal tools of Optimality Theory (Prince and Smolensky, 1993).³¹ Specifically, I will model competition between complete derivations in a candidate set, which are each converging derivations sharing the same input numeration and semantic interpretation. Candidates incur violations, indicated as stars in tableaux, **according to the reformulations below in (68) which explicitly define their violation counts.** The *optimal* candidate is the one which best satisfies the highest-ranked constraint where violation counts differ.³²

³⁰See in particular Ordóñez (1995) which uses Agent Focus in Jakaltek as an explicit argument for Chomsky’s (1991) notion of “last-resort.” Assmann et al. (2013, p. 404) also acknowledges this “repair strategy” question.

³¹There are two previous approaches to aspects of the distribution and realization of AF in an Optimality-Theoretic syntax framework.

Stiebels (2006) presents an analysis in terms of Lexical Decomposition Grammar, where each argument in the input’s Semantic Form is valued for certain features. Stated in terms of arguments having higher roles or lower roles ([±hr], [±lr]), its logic is similar to a dependent case theory à la Marantz (1991). This system, as stated in Stiebels (2006), is insensitive to the locality of movement involved, and is therefore unable to derive the pattern of AF documented here.

Preminger (2011, p. 98–100) offers a sketch for the agreement alignment on AF verbs in K’ichean, based primarily on Kaqchikel data, but does not attempt to derive the general distribution of AF at the same time. Ultimately in his discussion of K’ichean AF, he concludes that the AF agreement data which he considers does not clearly distinguish between a violable constraints model (OT) and a model of syntax where operations (such as probing) must be attempted, even if they do not succeed.

³²I will refer to the candidates here as *derivations*, to reflect the derivational nature of the Spec-to-Spec Anti-Locality constraint as defined in (68a). See Müller (1997), particularly footnote 20, for discussion of the use of derivational constraints in Optimality-Theoretic syntax. Note, however, that if the candidate set were made up of representational outputs of syntax which retain information on movement chains, we could think of the Spec-to-Spec Anti-Locality constraint as a representational constraint.

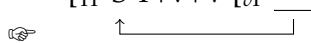
As noted in Müller (1997); Müller and Sternefeld (2001) and others, the consideration of transderivational constraints is certainly not incompatible with derivational syntax in the Minimalist tradition, and is not without precedent. See for example the notion of “reference set” in Chomsky (1995), which selects for converging derivations with the same input numeration. See also Fox (1995); Reinhart (1998) for examples of competition between derivations with identical semantic interpretations.

(68) **Constraint definitions giving violation counts:**

- a. Spec-to-Spec Anti-Locality (SSAL):
Assign one violation per \bar{A} -movement step which is too close, as defined in (4).
- b. XRef:³³
Assign one violation per argument which is not cross-referenced (see 46).

I begin by formalizing the derivation of Kaqchikel clause structure motivated in section 4. In transitive clauses without \bar{A} -movement, XRef will trigger **the use of the A probe on T, moving the subject to Spec,TP (69). Each candidate in the candidate set starts with the same numeration, differing only in (a) whether the optional A probe is used or not and (b) the target of the B probe. Note that there is no candidate with an active A probe targeting the object, as the A probe has the EPP property and the object is in the lower phase.**



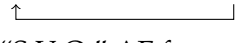


(69) **Transitive clause derivation (47/59):**

Candidates	XRef
$[_{TP} S T+v+V [_{vP} _ [_{VP} O]]]$  \Rightarrow "V O S," Set A = subject, Set B = object (47/59)	
$[_{TP} T+v+V [_{vP} S [_{VP} O]]]$ \Rightarrow "V O S," AF form, no Set A, Set B = subject	*! (object)
$[_{TP} T+v+V [_{vP} S [_{VP} O]]]$ \Rightarrow "V O S," AF form, no Set A, Set B = object	*! (subject)

Now consider a transitive clause where the subject will be \bar{A} -moved to Spec,CP. If the subject had first moved to Spec,TP, as in the winning candidate in (69), the subsequent movement of the subject from Spec,TP to Spec,CP incurs a violation of Spec-to-Spec Anti-Locality (SSAL below). If instead the subject does not move through Spec,TP, we will satisfy Spec-to-Spec Anti-Locality at the expense of XRef, and yield an AF verb form. Since AF is the attested form in this configuration, this motivates the ranking of Spec-to-Spec Anti-Locality \gg XRef, as discussed informally in the previous section.

³³Note that this formulation of XRef is functionally equivalent to Stiebels's (2006) *Max(ϕ)* and Preminger's (2011) *HaveAgr*.

(70) **Transitive clause with \bar{A} -movement of subject (51):**

Candidates	SSAL	XRef
$[_{CP} S [_{TP} \text{ } _ _ T+v+V [_{vP} \text{ } _ _ [_{VP} O]]]]$  \Rightarrow "S V O," Set A = subject, Set B = object (51a)	*!	
 $[_{CP} S [_{TP} T+v+V [_{vP} \text{ } _ _ [_{VP} O]]]]$  \Rightarrow "S V O," AF form, no Set A, Set B = subject (51b)		* (object)
 $[_{CP} S [_{TP} T+v+V [_{vP} \text{ } _ _ [_{VP} O]]]]$  \Rightarrow "S V O," AF form, no Set A, Set B = object (51b)		* (subject)

The tableau above in (70) shows that in this situation, an AF form verb will be the most optimal candidate. However, at this **point**, we cannot determine whether the AF form with a Set B marker cross-referencing the subject or the object will be used.

In order to answer this question, in this section we will take a closer look at the pattern of agreement which is realized on AF verbs, based on the work of Preminger (2011) which also studies this same variety of Kaqchikel. Along the way, we will see that there are particular combination of ϕ -features which require the full transitive verb form instead of the AF form, even though the structure of the clause would otherwise predict that AF would be used. I argue that this interaction can be explained by the calculus of ranked, violable constraints presented here, but not by a system of syntactically marked "last-resort" or "repair" mechanisms.

5.2 An exception to the last-resort strategy

I will begin by reviewing the pattern of agreement on AF verbs. Recall that there is only one agreement slot on the AF verb: Set B (71). AF verbs do not have a Set A agreement slot, under my proposal because no DP occupies Spec,TP in such clauses. Since there is only one agreement slot and two ϕ -agreement targets in these clauses, only one **argument will be cross-referenced by the verb**.

(71) **Agent Focus form of transitive verb: (=10)**

aspect – Set B – verb – AF suffix


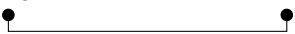
In non-AF contexts, the Set B marker is the agreement slot which can be described as "absolutive"-aligned: it cross-references the object in non-AF transitive clauses and the subject in intransitive clauses. However, its behavior on AF verbs is different. As we see in examples (11), repeated below as (72), the Set B marker on an AF verb can agree with either

the subject or the object. The agreement pattern in these examples is schematized in (73) below.

(72) **Examples of Set B agreement in AF:** (=11) (Preminger, 2011, exx 21–22)

- a. Ja rat x-{\check{v}at/*\emptyset}-axa-n ri achin.
 FOC you COM-{B_{2sg}/*B_{3sg}}-hear-AF the man
 ‘It was YOU that heard the man.’
- b. Ja ri achin x-{\check{v}at/*\emptyset}-axa-n rat.
 FOC the man COM-{B_{2sg}/*B_{3sg}}-hear-AF you
 ‘It was THE MAN that heard you.’

(73) **Agreement patterns in (72):** (=12)

- a. subject_{2sg} aspect – B_{2sg} – verb – AF object_{3sg} (=72a)

- b. subject_{3sg} aspect – B_{2sg} – verb – AF object_{2sg} (=72b)


This choice of ϕ -agreement target is determined by the ϕ -features on these arguments. In particular, previous researchers have introduced a *salience hierarchy* to describe the agreement on the AF verb form’s Set B marker (74) (Stiebels, 2006, and references therein). **Descriptively**, the Set B marker on an AF verb must consider both its subject and its object and realize the ϕ -features of the argument which is higher on this hierarchy.

(74) **Salience hierarchy:** (=13) (Stiebels, 2006)
 first/second-person > third-plural > third-singular

In order to model this interaction within the system proposed here, I propose the constraint *XRef-Participant* in (75).^{34,35} **Derivations where the B probe targets the subject and those where it targets the object are both considered as candidates in the tableau.**³⁶

(75) **XRef-Participant (XRef-P):**
 Assign one violation per participant (first- or second-person) argument which is not cross-referenced.



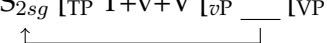
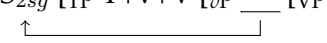
³⁴This constraint is equivalent to Preminger’s (2011) *HaveAgrWith1/2*.

³⁵Here I will abstract away from the preference to agree with third-plural arguments over third-singular ones. Formally, it suffices to introduce a similar constraint, *XRef-Plural*, which assigns violations for plural ϕ -agreement targets which are not agreed with. I will not discuss the effect of this constraint, however, as the preference for agreeing with third-plural arguments over third-singular arguments will not yield the interesting AF-overriding behavior which I will present with first- and second-person arguments below.

³⁶Recall that, unlike the A probe, the B probe is able to probe into the lower phase, so both targets are possible. See discussion at the end of section 4.1.

By introducing the constraint XRef-Participant, we are able to break the tie that we observed above in (70). Consider the tableau for (72a), with a second-singular subject and a third-singular object. Notice that we do not need to rank XRef-Participant relative to any of the other constraints considered in order to break this tie and yield the correct output. A comparison very similar to (72a), not illustrated here, also yields the second-singular Set B agreement for example (72b) which has a third-singular subject and a second-singular object, with the same constraint ranking.

(76) **2sg-subject/3sg-object transitive clause with \bar{A} -movement of subject (72a):**

Candidates	SSAL	XRef	XRef-P
	strictly ranked		
$[CP S_{2sg} [TP \text{ } _ T+v+V [vP \text{ } _ [VP O_{3sg}]]]]$  \Rightarrow "S V O," Set A = 2sg (S), Set B = 3sg (O)	*!		
 $[CP S_{2sg} [TP T+v+V [vP \text{ } _ [VP O_{3sg}]]]]$  \Rightarrow "S V O," AF form, no Set A, Set B = 2sg (S)		* (O)	
$[CP S_{2sg} [TP T+v+V [vP \text{ } _ [VP O_{3sg}]]]]$  \Rightarrow "S V O," AF form, no Set A, Set B = 3sg (O)		* (S)	*! (S)

Given this hierarchy effect which determines the agreement target of the **B probe** in AF, a natural question is *what happens when both arguments of the verb are first or second-person?* As noted by Preminger (2011), *in such cases in Kaqchikel, the verb simply stays in its non-AF form, agreeing with both arguments.*³⁷ This is demonstrated by the subject cleft in (77). As we see, even though the subject cleft is an AF-triggering environment, the AF form of the verb cannot be used, regardless of the **target of Set B agreement** chosen. Instead, the full agreement transitive form of the verb must be used.

(77) **Subject cleft with 1sg-subject/2sg-object grammatical without AF:**

- a. ✓ Ja yin x-at-in-tzët rat.
FOC me COM-B_{2sg}-A_{1sg}-see you
 'It was ME that saw you.'
- b. * Ja yin x-i-tz'et-ö rat.
FOC me COM-B_{1sg}-see-AF you
- c. * Ja yin x-a-tz'et-ö rat.
FOC me COM-B_{2sg}-see-AF you

³⁷The same pattern has been observed in some dialects of the sister language K'iche' by Mondloch (1981, p. 223), as discussed in Stiebels (2006), and is also observed in Chuj (Robertson, 1980, p. 144). Focus extractions of transitive subjects requires AF morphology, with one exception—when both the subject and object are first- or informal second-person, in which case regular transitive verbal morphology is used instead.

Just to make sure that this is indeed the case, we see below that if either argument in (77) were changed to be third-person, the AF form must be used, with Set B cross-referencing the participant argument.

(78) **Subject cleft with 3sg-subject/2sg-object:**

- a. ✓ Ja ri a Juan x-a-tz'et-ö rat.
 FOC Juan COM-B_{2sg}-see-AF you
 'It was JUAN that saw you.'
- b. * Ja ri a Juan x-a-r-tz'ët rat.
 FOC Juan COM-B_{2sg}-A_{3sg}-see you

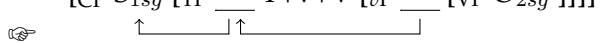
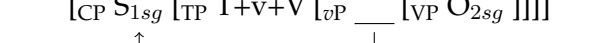

(79) **Subject cleft with 1sg-subject/3sg-object:**

- a. ✓ Ja yïn x-i-tz'et-ö ri a Juan.
 FOC me COM-B_{1sg}-see-AF Juan
 'It was ME that saw Juan.'
- b. * Ja yïn x-∅-in-tz'ët ri a Juan.
 FOC me COM-B_{3sg}-A_{1sg}-see Juan

Example (77), and other examples with other first- and second-person combinations not presented here for reasons of space, show us that, informally, the need of first- and second-person arguments to be cross-referenced by the verb overrides the effects of Spec-to-Spec Anti-Locality which otherwise predict the use of an AF verb form in this environment.

In the violable-constraint-based formulation presented here, we can easily account for this behavior by ranking XRef-Participant above Spec-to-Spec Anti-Locality:

(80) **1sg-subject/2sg-object transitive clause with \bar{A} -movement of subject (77):**

Candidates	XRef-P	SSAL	XRef
$[_{CP} S_{1sg} [_{TP} \text{ } _ _ T+v+V [_{vP} \text{ } _ _ [_{VP} O_{2sg}]]]]$  \Rightarrow "S V O," Set A = 1sg (S), Set B = 2sg (O)		*	
$[_{CP} S_{1sg} [_{TP} T+v+V [_{vP} \text{ } _ _ [_{VP} O_{2sg}]]]]$  \Rightarrow "S V O," AF form, no Set A, Set B = 1sg (S)	*! (O)		* (O)
$[_{CP} S_{1sg} [_{TP} T+v+V [_{vP} \text{ } _ _ [_{VP} O_{2sg}]]]]$  \Rightarrow "S V O," AF form, no Set A, Set B = 2sg (O)	*! (S)		* (S)

Using the XRef-Participant constraint which we independently motivated previously, we are able to straightforwardly account for this exceptional behavior with combinations of first- and second-person arguments. We have motivated the following constraint ranking: XRef-Participant \gg Spec-to-Spec Anti-Locality \gg XRef.

5.3 An argument for AF through optimality, not last-resort

I argue that this logic of the full distribution of AF in Kaqchikel reported here forms an argument against the view of AF as the result of a “last-resort” strategy. If the mechanism which results in AF is a “last-resort” variant of the derivation, this shows us that this “last-resort” itself has an exception. Stated in these terms, this phenomenon shows that there must be an *additional* strategy or repair, which is the *last-resort to a last-resort*.

(81) **A decision tree for AF as a last-resort operation:**

Q: Is the transitive verb’s subject \bar{A} -moved to immediately preverbal position?

No: The normal transitive verb form will work.

Yes: There will be a problem with the derivation.

⇒ *Last-resort!* Invoke the AF “repair.” The verb will now **cross-reference** only one argument.

Q: **Will we cross-reference all participant arguments?**

Yes: No problem. Use AF.

No: **There will be a problem with the derivation.**

⇒ *Last-resort to the last-resort!* Somehow use the normal transitive verb form after all.

Particularly suspicious is the fact that the result of the *last-resort to the last-resort* is an output *identical* to what would have originally been derived if AF were not attempted at all. To see concretely why this is problematic for other accounts, I will return to the analysis of Ordóñez (1995), Coon et al. (2011), and Assmann et al. (2013). These papers propose that when the subject of a transitive clause is \bar{A} -extracted, the object is then unable to receive absolutive Case. The AF morphology is then the realization of a last-resort absolutive Case assigner. AF is obligatory in such cases, because the AF absolutive Case-assigner is a last-resort, and thus has been invoked because *there is no other way to rescue the structure*. However, if the arguments of the verb are such that both must be **cross-referenced**, suddenly the non-AF form of the verb is used. This means that there must be another repair mechanism, the *last-resort to the last-resort*, which allows for absolutive Case to be assigned to the object *without* invoking the last-resort use of the AF absolutive Case assigner, for use in such cases. What could the source of this *last-resort to the last-resort* absolutive Case be? And crucially, why is this exceptional repair strategy not available in *all* cases where the object lacks absolutive Case? I will leave these questions open for the proponents of such Case-based analyses.

In this section I formalized my proposal for the distribution and realization of AF in Kaqchikel, using a system of violable constraints presented in tableau notation. This builds on the previous sections where I discussed the basic interactions of the constraints Spec-

to-Spec Anti-Locality and XRef and used them to derive the basic morphological ergativity of Kaqchikel as well as the locality-sensitive distribution of AF. I took a closer look at the realization of agreement on verbs in AF contexts and presented a surprising pattern where AF morphology is suppressed in an otherwise AF-triggering context, in order to satisfy the constraint XRef-Participant. I argue that this interaction shows the need to model AF through a system of *ranked, violable constraints*, where a higher-ranked constraint can make what is otherwise a marked structure the optimal candidate.

Furthermore, I briefly discussed some recent Case-based approaches to AF in this section. In addition to not reflecting the generalization that AF is sensitive to the locality of extraction, as shown in previous sections, these Case-based approaches run into difficulty with the data presented here, in having to describe AF as a *last-resort*, while also adopting a *last-resort to the last-resort*.

6 Anti-locality and agreement beyond Kaqchikel

The core idea of the proposal made here is that Kaqchikel AF should be thought of as the result of competition between an anti-locality constraint and a constraint ensuring that arguments are cross-referenced. In this section, I will briefly discuss how this framework can be used to model a number of other Mayan languages, and then extend the approach taken here to similar anti-agreement interactions in other languages.³⁸

6.1 Constraint rankings and the typology of Mayan AF

In section 5 I motivated the use of three violable constraints, Spec-to-Spec Anti-Locality, XRef, and XRef-Participant, with the final constraint ranking of XRef-Participant \gg Spec-to-Spec Anti-Locality \gg XRef for modeling the behavior of Kaqchikel AF. In this section I

³⁸The Spec-to-Spec Anti-Locality constraint proposed here may also have positive consequences beyond the derivation of anti-agreement effects. David Pesetsky (p.c.) notes that this constraint makes the prediction that if the heads X and Y in schema “[_{YP} α [Y [_{XP} t_α [X” are both phase heads, the configuration will be an island for extraction. The logic is as follows: as movement out of phases must proceed through their edge, movement out of YP must necessarily stop at both Spec,XP and Spec,YP. However, Spec-to-Spec Anti-Locality explicitly bans movement from Spec,XP to Spec,YP. Thus this configuration is predicted to necessarily be an island. This configuration may indeed obtain under certain head-raising analyses of relative clauses (if the DP projection immediately dominates a CP) or with adjunct clauses (if a CP is adjoined at the *v*P level), which are both known islands for extraction.

The English *that*-trace effect may also be conducive to an anti-locality-based explanation. The idea would be that the extraction of a subject across the complementizer “that” is movement from Spec,TP to Spec,CP and therefore violates Spec-to-Spec Anti-Locality. Support for such a view comes from the fact that the addition of certain adverbs can obviate *that*-trace effects, as discussed by Bresnan (1977); Culicover (1993) and others. Movement of non-subjects to Spec,CP does not violate Spec-to-Spec Anti-Locality and therefore is not subject to restrictions on the form of complementizer chosen. See Erlewine (2014) for such a proposal for the English *that*-trace effect based on the anti-locality constraint proposed here.

will discuss the behavior predicted by other rankings of these constraints, and show that the predicted behavior is indeed attested in other languages of the Mayan family.

Here we begin by assuming the same basic clausal structure I motivated for Kaqchikel above. Specifically, the active XRef constraint and T having a B probe and an optional A probe with the EPP property will yield an ergative-absolutive pattern of agreement alignment, as discussed for Kaqchikel in sections 4.1 and 4.2. This reflects the fact that Mayan languages generally follow the same pattern of verbal agreement as Kaqchikel on non-AF transitive and intransitive verbs: transitive verbs have a Set B marker cross-referencing the object and a Set A marker cross-referencing the subject, while intransitive verbs have only a Set B marker cross-referencing its subject (Dayley, 1981, a.o.).

Given these assumptions, there are three types of behaviors which are predicted, described below:³⁹

(82) **Constraint rankings and their predicted behavior:**

- a. XRef-Participant \gg Spec-to-Spec Anti-Locality \gg XRef:
Extraction of a transitive subject will trigger Agent Focus—a verb form with no Set A agreement. However, the full agreement transitive verb is still used if necessary in order to agree with a participant argument. (Kaqchikel above)
- b. Spec-to-Spec Anti-Locality \gg {XRef-Participant, XRef}:
Extraction of a transitive subject will always trigger Agent Focus—a verb form with no Set A agreement—regardless of the ϕ -features of the arguments involved.
- c. XRef \gg Spec-to-Spec Anti-Locality:
Extraction of a transitive subject will not trigger Agent Focus.

I begin by discussing the behavior of two other Mayan languages with AF: Jakalteq and Akatek, both of the Qanjob'alan family. The Jakalteq and Akatek AF verb form shares the following properties with Kaqchikel AF: (a) compared to the full agreement transitive verb, the AF verb form is lacking a Set A marker and gains an AF suffix, (b) the AF verb form is triggered by the \bar{A} -extraction of its subject, and (c) the object is not turned into an oblique.⁴⁰ As both languages exhibit AF, I begin by assuming the basic constraint ranking Spec-to-Spec Anti-Locality \gg XRef.⁴¹

³⁹As noted by an anonymous reviewer, the ranking of XRef-Participant \gg XRef may be predicted to be universal following Aissen (1999b, 2003). Aissen derives similar rankings based on universal prominence scales and Prince and Smolensky's (1993) *alignment* process (ch. 8) for the generation of corresponding constraint rankings. See Aissen (1999b, 2003) for details.

⁴⁰This final point is important when comparing AF constructions across Mayan, as some languages utilize a general antipassive strategy, including demotion of the object to an oblique, instead of a dedicated AF construction in cases of transitive subject extraction. See section 2.3.

⁴¹The motivation for this ranking is the same as for Kaqchikel in section 5. Spec-to-Spec Anti-Locality \gg XRef forces the subject to skip the Spec,TP position in transitive subject extractions.

Recall that in Kaqchikel the Set B marker on a non-AF transitive verb agrees with the object, but the Set B marker on an AF verb agrees with either the subject or object, descriptively following a salience hierarchy. In Jakaltek and Akatek, in contrast to Kaqchikel, the Set B agreement marker on the AF verb *agrees strictly with the object* (Grinevald Craig 1979 p. 11–12 for Jakaltek, Zavala 1997 p. 452 for Akatek; also Dayley 1981). These patterns are schematized below:

(83) **Jakaltek and Akatek full agreement transitive verb:** (cf Kaqchikel in (49))



(84) **Jakaltek and Akatek AF verb:** (cf Kaqchikel in (73))



We will now see how this one simple change in the morphology of AF verbs can affect the distribution of AF. The important question is whether these languages reflect the effects of the XRef-Participant constraint proposed for Kaqchikel. In particular, what happens if an extracted transitive subject is first- or second-person? Here, Jakaltek and Akatek diverge. In Jakaltek, if the extracted transitive subject is a participant argument, the AF verb form cannot be used (86b–c). Compare this to the baseline Jakaltek AF in (85).⁴²

(85) **Jakaltek 3sg-subject/2sg-object clauses** (Grinevald Craig, 1979, pp. 11–12):

- a. Xc-ach y-(7)il naj.
COM-B_{2sg} A_{3sg}-see 3sg
'He saw you.'
- b. Mac xc-ach 7il-ni?
who COM-B_{2sg} see-AF
'Who saw you?'

(86) **Jakaltek 2sg-subject/3sg-object clauses** (Grinevald Craig, 1979, p. 13):

- a. X-∅-aw-(7)il naj.
COM-B_{3sg}-A_{2sg}-see 3sg
'You saw him.'
- b. * Ha-ch x-∅-7il-ni naj.
FOC-2sg COM-B_{3sg}-see-AF 3sg
Intended: 'It is YOU that saw him.'




⁴²The orthography here for Jakaltek follows Grinevald Craig (1979). The symbol 7 is a glottal stop. Grinevald Craig (1979) writes example (85) with a space in the middle of the verbal complex, but not (86). The order of morphemes in the verbal complex is, however, identical across Jakaltek, Akatek, and Kaqchikel.

The same pattern of Jakaltek data as in (85–86) with first-person used instead of second-person is documented in Robertson (1980, p. 20).




- c. Ha-ch x-∅-aw-(7)il naj.
 FOC-2sg COM-B_{3sg}-A_{2sg}-see 3sg
 'It is YOU that saw him.'

Jakaltek has chosen to use a structure which allows for agreement with the participant subject, at the expense of a violation of anti-locality. In other words, in Jakaltek, XRef-Participant must outrank Spec-to-Spec Anti-Locality. I present tableaux below for the structures in (85b) and (86b–c):

(87) **Jakaltek 3sg-subject/2sg-object clause with \bar{A} -movement of subject (85b):**

Candidates	XRef-P	SSAL	XRef
$[CP S_{3sg} [TP \text{ } _ T+v+V [vP \text{ } _ [VP O_{2sg}]]]]$  \Rightarrow "S V O," Set A = 3sg (S), Set B = 2sg (O)		*!	
 $[CP S_{3sg} [TP T+v+V [vP \text{ } _ [VP O_{2sg}]]]]$  \Rightarrow "S V O," AF form, no Set A, Set B = 2sg (O)			* (S)

(88) **Jakaltek 2sg-subject/3sg-object clause with \bar{A} -movement of subject (86b–c):**

Candidates	XRef-P	SSAL	XRef
 $[CP S_{2sg} [TP \text{ } _ T+v+V [vP \text{ } _ [VP O_{3sg}]]]]$  \Rightarrow "S V O," Set A = 2sg (S), Set B = 3sg (O)		*	
$[CP S_{2sg} [TP T+v+V [vP \text{ } _ [VP O_{3sg}]]]]$  \Rightarrow "S V O," AF form, no Set A, Set B = 3sg (O)	*! (S)		* (S)

Note that the constraint ranking motivated for Jakaltek, then, is the same as for Kaqchikel: XRef-Participant \gg Spec-to-Spec Anti-Locality \gg XRef (82a). However, due to the basic difference in the possible targets of Set B agreement (strictly the object in Jakaltek but either subject or object in Kaqchikel), we have correctly predicted a corresponding difference in the distribution of AF itself. In Kaqchikel the high-ranking XRef-Participant forces us to not use AF when both subject and object are participant arguments. In Jakaltek, the high-ranking XRef-Participant forces us to not use AF whenever the subject is a participant, as it otherwise cannot be agreed with.

Akatek exhibits the other logical possibility. In cases with extracted participant transitive subjects, Akatek simply uses the AF verb form without agreeing with the participant subject:^{43,44}

(89) **Akatek 1sg-subject/3sg-object subject focus construction (Zavala, 1997, p. 452):**

- a. Ja'-in \emptyset -ij-on-toj naj unin.
 FOC-1sg B_{3sg}-back.carry-AF-DIR boy
 'It's I who carried the boy.'
- b. *Ja'-in \emptyset -w-ij-toj naj unin.
 FOC-1sg B_{3sg}-A_{1sg}-back.carry-DIR boy

This motivates a different constraint ranking than Kaqchikel or Jakaltek. Akatek does *not* have a highly-ranked XRef-Participant which enforces agreement with the participant subject in (89) at the expense of an anti-locality violation. XRef-Participant in Akatek must be ranked below Spec-to-Spec Anti-Locality, or be inactive (as illustrated below), and therefore we do not observe its effects in Akatek. Akatek therefore instantiates the second predicted constraint ranking: Spec-to-Spec Anti-Locality \gg {XRef-Participant, XRef} (82b).

(90) **Akatek 1sg-subject/3sg-object clause with \bar{A} -movement of subject (89):**

Candidates	SSAL	XRef
$[_{CP} S_{1sg} [_{TP} \text{---} T+v+V [_{vP} \text{---} [_{VP} O_{3sg}]]]]$ \Rightarrow "S V O," Set A = 1sg (S), Set B = 3sg (O)	*!	
$[_{CP} S_{1sg} [_{TP} T+v+V [_{vP} \text{---} [_{VP} O_{3sg}]]]]$ \Rightarrow "S V O," AF form, no Set A, Set B = 3sg (O)		* (S)

⁴³The orthography here for Akatek follows Zavala (1997). The directional suffix *-toj* is glossed by Zavala (1997) as "DIR:thither" and *naj* is a nominal classifier.

⁴⁴According to Grinevald Craig (1979), Ayres (1977) offers a description of Ixil which patterns with Akatek. That is, the AF form in Ixil "exhibits the same pattern of ergative deletion with the absolutive marker cross-referencing the patient" and furthermore uses the AF verb form for focus extractions of participants (Grinevald Craig, 1979, p. 12). Robertson (1980, p. 145) independently gives Ixil data bearing out this claim, reproduced in (i-ii) below. (Robertson's (1980) English translation for example (ii) is "I hit you" with underlining on the subject to indicate focus.)

(i) **Ixil 1st-subject/2nd-object full agreement clause:**

\emptyset -un-q'os-aš (in)
 COM-A_{1sg}-hit-B_{2sg} (1sg)
 'I hit you.'

(ii) **Ixil 1st-subject/2nd-object subject focus construction:**

in \emptyset -q'os-on-aš
 1sg COM-hit-AF-B_{2sg}
 'It's me that hit you.'




Jakaltek and Akatek therefore exemplifies two of the three types of Mayan languages predicted in (82). The final family of languages, which rank Spec-to-Spec Anti-Locality below XRef (82c), will be those which do not exhibit AF. This description applies to many Mayan languages. Example (91) below gives an example of a transitive subject *wh*-question which exhibits the full agreement transitive verb form in Chol, one such language which does not have AF:

(91) **Chol is a Mayan language without Agent Focus (Coon et al., 2011):**

Maxki tyi y-il-ä-yety?
 who ASP A₃-see-TV-B₂
 ‘Who saw you?’

Under this constraint ranking, extraction of all arguments will proceed with full agreement transitive verbs, even if they involve movement of an agreeing transitive subject, violating Spec-to-Spec Anti-Locality. The tableau for a transitive subject extraction in such a language is given below:

(92) **\bar{A} -movement of a transitive subject, in a Mayan language without AF (cf 70):**

Candidates	XRef	SSAL
$[_{CP} S [_{TP} \text{ } _ _ T+v+V [_{vP} \text{ } _ _ [_{VP} O]]]]]$  \Rightarrow “S V O,” Set A = subject, Set B = object (e.g. 91)		*!
$[_{CP} S [_{TP} T+v+V [_{vP} \text{ } _ _ [_{VP} O]]]]]$  \Rightarrow “S V O,” AF form, no Set A, Set B = subject	* (O)	
$[_{CP} S [_{TP} T+v+V [_{vP} \text{ } _ _ [_{VP} O]]]]]$  \Rightarrow “S V O,” AF form, no Set A, Set B = object	* (S)	

In this way, the syntactic structures and constraints independently motivated in section 5 for Kaqchikel are able to extend to model the correct patterns of AF distribution and agreement in additional Mayan languages.

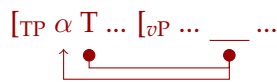
6.2 Anti-locality and anti-agreement

Although the Mayanist term “Agent Focus” has been used in discussions in this paper, similar interactions are observed in a variety of other language families. In particular, Mayan AF can be thought of as an *anti-agreement effect* (Ouhalla, 1993): an obligatory lack of agreement which occurs when a particular argument is extracted. The proposal motivated here for AF in Kaqchikel offers an approach to anti-agreement effects more generally.

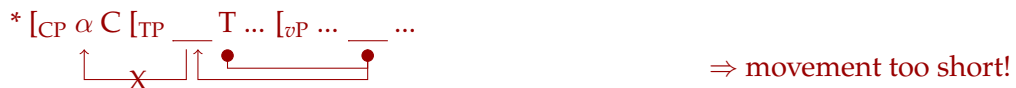
The general logic of the anti-locality approach to anti-agreement works as follows: T agrees with an argument using a ϕ -probe with the EPP property, moving the argument to Spec,TP (93a). Anti-agreement can occur when this argument is targeted for movement to Spec,CP. Movement of this argument from Spec,TP to Spec,CP will violate Spec-to-Spec Anti-Locality (93b). It therefore must skip the Spec,TP position, foregoing ϕ -agreement with T (93c).⁴⁵ This is the source of anti-agreement. The extraction of other arguments, however, will not affect the agreement on T.

(93) **The logic of anti-agreement:**

- a. T normally agrees with and attracts α to Spec,TP:



- b. Subsequent movement of α from Spec,TP to Spec,CP is ungrammatical:



- c. Extraction of α to Spec,CP instead skips Spec,TP:



In Kaqchikel, transitive subjects are moved to Spec,TP by the A probe. The logic in (93) therefore derives AF, an anti-agreement effect in cases of transitive subject extraction. In this section I will briefly discuss the application of this proposal to anti-agreement effects in different types of languages, first in nominative alignment languages and second in an ergative alignment language which exhibits a different kind of anti-agreement effect.

6.2.1 Nominative anti-agreement

Consider a language with a single ϕ -agreement probe on T with the EPP property. In both transitive and intransitive clauses, XRef is best satisfied by the use of this probe: T then agrees with and attracts the subject to Spec,TP. We would describe this language as a nominative-accusative alignment language with subject-verb agreement. If for some reason the subject is not moved to Spec,TP, however, the verb will not exhibit agreement with the subject.

An example of this pattern is found in the northern Italian dialects of Trentino and Fiorentino, as described in Brandi and Cordin (1989). In certain circumstances (see footnote 47 below), Trentino and Fiorentino allow for an “inversion” word order where the subject is in postverbal position. Although the verb normally agrees with subjects (94), it does not agree with

⁴⁵We can imagine other strategies for avoiding the anti-locality violation besides this skipping technique. This will be discussed in the conclusion, section 7.

subjects in postverbal position (95), instead simply reflecting default, third-singular masculine ϕ -features.⁴⁶

(94) **Preverbal subjects agree with the verb:** Fiorentino

Le ragazze l' hanno telefonato.
 the girls CL_{3pl} has_{3pl} phoned

'The girls have phoned.' (Campos, 1997)

(95) **No (default) agreement with postverbal subjects:**

a. Gl'- ha telefonato delle ragazze. Fiorentino

b. \emptyset Ha telefona qualche putela. Trentino
 CL_{3sm} has_{3sm} telephoned some girls

'Some girls have telephoned.'

Brandi and Cordin (1989) observe that in subject *wh*-questions, the verb cannot agree with the subject, even though it is in a linearly preverbal position. They also show that in cases of long-distance extraction, this lack of subject agreement only affects the embedded verb for which the moved element is a local subject, again similar to the distribution of AF in Kaqchikel. This is the anti-agreement effect in Trentino and Fiorentino.

(96) **Default agreement with *wh*-fronted subjects:**

a. Quante ragazze gli ha parlato con te? Fiorentino

b. Quante putele \emptyset ha parlá con ti? Trentino
 How many girls CL_{3sm} has_{3sm} spoken with you

'How many girls talked to you?'

(97) **Agreement with *wh*-fronted subjects is ungrammatical:**

a. *Quante ragazze le hanno parlato con te? Fiorentino

b. *Quante putele le ha parlá con ti? Trentino
 How many girls CL_{3pf} has_{3pf} spoken with you

Brandi and Cordin (1989) propose, following Rizzi's (1982) analysis of standard Italian, that in subject *wh*-questions, the subject is skipping the canonical Spec,TP subject position. ϕ -agreement with the verb occurs if and only if there is A-movement of the subject to the canonical preverbal subject position, Spec,TP.

This anti-agreement behavior in Trentino and Fiorentino is the nominative-accusative counterpart of the interaction in Kaqchikel. T in Trentino and Fiorentino has just a single ϕ -agreement probe, which has the EPP property, akin to the Kaqchikel A probe. Because

⁴⁶In these examples, CL is a preverbal clitic which also agrees with a preverbal subject. For our purposes, the behaviors of Trentino and Fiorentino are identical.

there is only one probe, XRef will trigger the probe's use in both transitive and intransitive clauses, resulting in nominative-accusative agreement alignment instead of Kaqchikel's ergative-absolutive alignment. When *wh*-subjects in both transitive and intransitive clauses move to Spec,CP, they will skip the canonical Spec,TP position due to a constraint ranking with Spec-to-Spec Anti-Locality above XRef, just as in Kaqchikel.⁴⁷

6.2.2 Absolutive anti-agreement

In this section I present a different kind of anti-agreement effect in an ergative-absolutive language. The data will come from Karitiãna, a Tupian language of the Brazilian Amazon. The Karitiãna verb has one agreement slot, which agrees with the subject in transitive clauses (98a–c) and the object in transitive clauses (98d–f). Karitiãna does not have any morphological case marking (Storto, 1999).

(98) **Absolutive agreement alignment in Karitiãna (Storto, 2012):**

- | | | | |
|--|--|--|---|
| <p>a. Y-pyr-ahy-dn yn.
 AGR_{1sg}-ASSERT-drink-NFUT 1sg
 'I drank.'</p> | <p>b. A-pyr-ahy-dn an.
 AGR_{2sg}-ASSERT-drink-NFUT 2sg
 'You drank.'</p> | <p>c. ∅-Pyr-ahy-dn i.
 AGR₃-ASSERT-drink-NFUT 3sg
 'He/she drank.'</p> | <p>d. Y-pyr-ahoj-on yn òwã.
 AGR_{1sg}-ASSERT-laugh.at-NFUT 1sg child
 'The child laughed at me.'</p> <p>e. A-pyr-ahoj-on an òwã.
 AGR_{2sg}-ASSERT-laugh.at-NFUT 2sg child
 'The child laughed at you.'</p> <p>f. ∅-Pyr-ahoj-on i òwã.
 AGR₃-ASSERT-laugh.at-NFUT 3sg child
 'The child laughed at him/her.'</p> |
|--|--|--|---|

The absolutive agreement alignment observed here is essentially the same as the pattern of Set B agreement in Mayan simplex clauses. In Kaqchikel, extraction of transitive subjects (ergative arguments) triggers AF, an anti-agreement effect. In contrast, Karitiãna exhibits what is essentially the reverse pattern.⁴⁸ Extraction of the transitive subject does not affect the verbal morphology (99). When an intransitive subject is extracted, an invariant anti-agreement morpheme (glossed PART by Storto) is used in place of the agreement morpheme (100).⁴⁹ When a transitive object is extracted, the verb exceptionally agrees with the *subject*

⁴⁷ An important question is why fronting of the subject is apparently optional, as exemplified by the "inversion" structures in (95), in violation of XRef. As noted in Brandi and Cordin (1989, fn. 6), cases of inversion which are not subject *wh*-questions occur only when the subject is focused. It is therefore a certain information-structural requirement which outranks XRef. See Erlewine (in preparation) for a proposal for why focus requires the subject to stay low in such cases.

⁴⁸ The formal similarity of Mayan AF and Karitiãna anti-agreement was first discussed in Hale and Storto (1996) and Richards (1997).

⁴⁹ The morpheme *-mon* appears in absolutive *wh*-questions but not other *wh*-questions. Storto (1999) identifies the suffix as a copula and therefore analyzes absolutive *wh*-questions as *wh*-clefts.

and an additional invariant morpheme is added, which Storto (1999, *et seq*) calls the *Object Focus* marker (OF) (101). (The following examples all come from Storto (1999).)

(99) **Transitive subject extraction preserves absolutive agreement:**

Morã y-sokõ'i?
 who AGR_{1sg}-tie.up

'Who tied me up?'

(100) **Intransitive subject extraction triggers anti-agreement:**

Mora-mon i-hyryp?
 who-COP PART-CRY

'Who cried?'

(101) **Object extraction triggers agreement with *subject* and Object Focus morpheme:**

'Ep aj-ti-pasangã-t ajxa.
 trees AGR_{2pl}-OF-COUNT-NFUT 2pl

'TREES, you all are counting.'

Storto (1997, 1998) analyzes Karitiâna as a “raising ergative” language (Bittner and Hale, 1996a,b), where absolutive arguments move to Spec,IP (here, Spec,TP).⁵⁰ The absolutive anti-agreement observed follows from the logic of anti-agreement presented here (93). Absolutive agreement correlates with movement of the absolutive argument to Spec,TP, but subsequent movement to Spec,CP would be too short. Intransitive subjects which are \bar{A} -extracted skip Spec,TP, satisfying Spec-to-Spec Anti-Locality at the expense of XRef (100). This yields a verb form with no agreement marking. \bar{A} -extracted objects also skip Spec,TP, but allow T to exceptionally agree with the subject, explaining the exceptional pattern of agreement in (101) as a strategy to maximally satisfy both Spec-to-Spec Anti-Locality and XRef.

Before concluding, it is worth relating this absolutive anti-agreement effect to the broader literature on syntactic ergativity. Much of the literature on extraction in ergative languages document and attempt to explain various quirks of *ergative* argument extraction—see for example the discussion of the “absolutive restriction on \bar{A} -extraction” in Aldridge (2004)—which has also been used to describe Mayan AF (though not entirely correctly, as we have

⁵⁰Note that Storto (1999) abandons this view of Karitiâna from her previous work, with absolutive arguments moving to Spec,TP. I believe the facts discussed in Storto (1999) which motivated this theoretical change can also be accounted for under the logic of anti-agreement introduced here. I will however not present a reanalysis of the full Karitiâna facts here, as it is far beyond the scope of this paper.

seen). In fact, the term “syntactic ergativity” itself is often used to refer to extraction asymmetries restricting movement of ergative arguments. The anti-agreement pattern in Karitiâna exemplifies a different kind of extraction asymmetry drawn along ergative-absolutive lines, where extraction of the *absolutive* argument requires a change in verbal morphology. The approach to anti-agreement presented here can account for the Karitiâna absolutive anti-agreement effect using the same logic which brings about an ergative anti-agreement effect, AF, in Kaqchikel.

7 Conclusion

In the study of the Mayan Agent Focus construction, previous researchers have assumed an exceptionless correlation between AF and the \bar{A} -extraction of a transitive subject (Aissen 1999a; Stiebels 2006; Coon et al. 2011; a.o.). In this paper I presented new data that shows that AF in Kaqchikel reflects a sensitivity to the *locality of movement*, rather than a response to the extraction of a transitive subject itself. This motivated the *Spec-to-Spec Anti-Locality* constraint, repeated below.

(102) **Spec-to-Spec Anti-Locality:** (=4)

\bar{A} -movement of a phrase from the Specifier of XP must cross a maximal projection other than XP.

AF occurs if and only if the subject of a transitive verb is moved to *immediately preverbal position*. Transitive subjects are regularly agreed with by the Set A probe and moved to Spec,TP. When a transitive subject is \bar{A} -extracted to immediately preverbal position, it is instead moved directly from its Spec,*v*P base position; movement from its regular Spec,TP position to a structurally adjacent Spec,CP would violate Spec-to-Spec Anti-Locality. Skipping Spec,TP results in the AF verb form with no Set A agreement—an anti-agreement effect. In section 6.2 I extended this logic to other anti-agreement effects, illustrating that the anti-locality-based analysis of anti-agreement and AF is logically independent of morphological ergativity.

More generally, the extraction of highest arguments (normally subjects—“subjects” hereafter) is often the locus of ideosyncratic behavior. Skipping Spec,TP and triggering an anti-agreement effect is not the only conceivable approach a language could take when confronted with this potential anti-locality configuration. For example, a language could choose to bind a pronoun instead of moving a subject—this describes the obligatory use of resumptive pronouns exclusively in subject *wh*-questions attested in Vata (Koopman, 1982, 1984) and Yoruba (Carstens, 1985, 1987; Lawal, 1987; Sonaiya, 1989). Alternatively, the inability to extract the subject from Spec,TP may result in pied-piping of a much larger

constituent—attested by the obligatory clausal pied-piping of subject *wh*-phrases in Imbabura Quechua (Cole and Hermon, 1981; Hermon, 1984). Yet another strategy would be to modify the morphosyntax of the CP edge to either (a) add additional functional material to move over or (b) make the edge transparent for extraction, allowing movement directly from Spec,TP. There are indeed many languages where subject extractions trigger a change in complementizer morphology—for example, in the English *that*-trace effect or French *que/qui* alternation—and such changes may be a reflection of such a strategy to modify the CP edge to avoid the anti-locality violation. (See Richards (1997, 2001, ch. 4) and Rizzi and Shlonsky (2007) for surveys of these and other quirks of subject extraction.)

As many different strategies to avoid this anti-locality violation are conceivable, we do not predict anti-agreement to be present in all languages. Furthermore, using the theory of ranked, violable constraints motivated here, anti-agreement is only predicted if Spec-to-Spec Anti-Locality is ranked high. If constraints motivating movement of the subject high (here, XRef) are ranked above , anti-agreement effects will not , as in Mayan languages without AF (section 6.1). What is predicted by this theory, then, is that (a) extraction of subjects will be a common locus of extraction restrictions (see above) and that (b) in a number of these cases, the introduction of additional functional material between Spec,TP and Spec,CP will obviate the quirky extraction behavior.

Finally, I will conclude by discussing one strategy that is *not* available in order to evade anti-locality: projecting an additional, “filler” maximal projection which has no other purpose in the clause. This has important consequences with for our theory of clausal structure and, in particular, the contribution of Cartography. Work such as Rizzi (1997), Cinque (1999), and many others have proposed finely articulated sequences of functional projections as universals of clausal structure-building. If the same set of all of these proposed projections were present in every clause,⁵¹ we would not be able to account for the locality-sensitive distribution of AF documented here.

Instead, we must adopt a view where a clause only includes those functional projections which are independently necessary for the derivation of the clause. Given a projection XP in the clausal spine, if X does not contribute to the interfaces (PF and LF), and no phrase must be hosted as the specifier of XP, XP cannot be projected. Such a view of functional structure is presented in Rizzi (1997, p. 314–315; and references therein), the *functional sequence (fseq)* of Starke (2001), and the *Hierarchy of Projections* of Adger (2003). The locality-sensitivity of AF presented here offers an empirical argument for this view of clausal structure.

⁵¹This is the “tentative” conclusion of Cinque (1999, p. 133ff): “though attractive, I think that [the alternative where not all projections are always present] is more costly than the idea that functional notions are always all structurally represented.”

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