Anti-locality and optimality in Kaqchikel Agent Focus

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Many Mayan languages show a syntactically ergative extraction asymmetry whereby the $\overline{\text{A}}$-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

Contents

1 Introduction

In a subset of Mayan languages, $\overline{\text{A}}$-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. to appear; a.o.). AF is traditionally described as obligatory whenever the subject of a transitive clause is $\overline{\text{A}}$-extracted. In this paper I will discuss the distribution and derivation of the AF construction in the Patzún variety of Kaqchikel, a Mayan language of Guatemala, and consequences for the theory of $\overline{\text{A}}$-movement and its interaction with agreement.

Consider the basic transitive clause in (1). The verb "eat" is realized here as *xutëj*. 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):**

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

'Who ate the tortilla?'

[1] Abbreviations 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 ✓x-∅-u-tëj / *x-∅-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 $\overline{\text{A}}$-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:**
$\overline{\text{A}}$-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. $\overline{\text{A}}$-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. $\overline{\text{A}}$-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 $\overline{\text{A}}$-movement of transitive subjects triggers AF:**

a. * [$_{\text{CP}}$ subject C [$_{\text{TP}}$ ___ ... [$_{v\text{P}}$ ___ ... *violates Spec-to-Spec Anti-Locality!*

b. ✓[$_{\text{CP}}$ subject C [$_{\text{TP}}$ ... [$_{v\text{P}}$ ___ ... 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 $\overline{\text{A}}$-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.

[2]With 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 $\overline{\text{A}}$-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]

[3]The 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.

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.'

(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.

[4]The 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.

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

(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-{✓at/*∅}-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-{✓at/*∅}-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-tëj ri a Juan?
what COM-B_{3sg}-A_{3sg}-eat Juan
'What did Juan eat?'

(15) **Relative clauses:**[6]

a. [Ri xteni' (ri) x-oj-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. K'o x-oj-tz'et-**ö** roj.
∃ COM-B_{1pl}-see-**AF** 1pl
'Someone saw us.'

b. K'o x-∅-qa-tz'ët roj.
∃ COM-B_{3sg}-A_{1pl}-see 1pl
'We saw someone.'

[6] Relative clauses are introduced by *ri*. This could potentially be analyzed as another use of the definite determiner *ri*, as suggested by a reviewer, but I descriptively gloss them here as RC.

Each of the constructions above involve $\overline{\text{A}}$-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. to appear; a.o.)—is that AF occurs if and only if the subject of a transitive verb is $\overline{\text{A}}$-moved.

We can further refine this description by looking at cases of long-distance $\overline{\text{A}}$-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, "say," 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 $\overline{\text{A}}$-moved transitive subject.

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

a. ✓ Achike n-∅-a-b'ij rat [chin x-oj-tz'et-**ö** roj]?
who INC-B_{3sg}-A_{2sg}-say 2sg that COM-B_{1pl}-see-**AF** 1pl
'Who do you say saw us?' ✓V [V-**AF**

b. * Achike n-a-b'i-**n** rat [chin x-oj-tz'et-**ö** roj]?
who INC-B_{2sg}-say-**AF** 2sg that COM-B_{1pl}-see-**AF** 1pl *V-**AF** [V-**AF**

c. * Achike n-∅-a-b'ij rat [chin x-oj-r-tz'ët roj]?
who INC-B_{2sg}-A_{2sg}-say 2sg that COM-B_{1pl}-A_{3sg}-see 1pl *V [V

d. * Achike n-a-b'i-**n** rat [chin x-oj-r-tz'ët roj]?
who INC-B_{2sg}-say-**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 arguments can be $\overline{\text{A}}$-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, includ-

ing 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 $\overline{\text{A}}$-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 yïn 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** yïn.
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.[7]

[7]But note that similar existential constructions which trigger AF are also attested in Popti' (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 Yucatec 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 this

Kaqchikel has the existential operator *k'o* and negative existential *majun*.[8] 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:**[9]

a. Baseline: *pastel* in post-verbal object position

Yïn x-∅-in-tëj ri/jun pastel.
I COM-B_{3sg}-A_{1sg}-eat the/one cake
'I ate the/a cake.'

b. ✓ (Yïn) k'o pastel x-∅-in-tëj.
I ∃ cake COM-B_{3sg}-A_{1sg}-eat
'I ate some cake.'

c. ✓ (Yïn) majun pastel x-∅-in-tëj.
I ∄ cake COM-B_{3sg}-A_{1sg}-eat
'I ate no cake.'

d. * (Yïn) x-∅-in-tëj k'o pastel.
I COM-B_{3sg}-A_{1sg}-eat ∃ cake

e. * (Yïn) x-∅-in-tëj majun pastel.
I COM-B_{3sg}-A_{1sg}-eat ∄ 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 says…" However, *k'o* can also surface in the matrix clause as in (23b), which introduces an interpretation where *k'o* takes scope over the matrix subject universal: there is a specific individual who everyone says will win.

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.

[8] Note 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. See also footnote 14 for an additional argument that argument existentials are not built using the existential predicate.

Note also 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*.

[9] The first-person subject pronoun *yïn* in the examples in (22) is topicalized. This is important for the derivation of (22a), which does not involve AF, as will be discussed in detail in section 4.4. The subject pronoun is strongly preferred in (22a) but optional in (22b–e), which can be explained by a requirement that there be at least one constituent before the verb in declarative clauses (Clemens, 2013).

(23) ***K'o, majun* can move long-distance, with scope consequences:**

a. Che konojel n-∅-ki-b'ij chin k'o n-∅-ch'ak-**ö** ri premio.
everyone INC-B_{3sg}-A_{3pl}-say that ∃ INC-B_{3sg}-win-**AF** the prize
✓ 'Everyone says that someone will win the prize' ✓∀ > ∃
'There is someone that everyone says will win the prize' # ∃ > ∀

b. K'o che konojel n-∅-ki-b'ij chin ___ n-∅-ch'ak-**ö** ri premio.
∃ everyone INC-B_{3sg}-A_{3pl}-say that INC-B_{3sg}-win-**AF** the prize
✓ 'Everyone says that someone will win the prize' ✓∀ > ∃
✓ 'There is someone that everyone says will win the prize' ✓∃ > ∀

I argue that these argument existentials *k'o* and *majun* obligatorily $\overline{\text{A}}$-move to be in a preverbal, scope-taking position. Island diagnostics support the idea that these operators involve $\overline{\text{A}}$-movement:

(24) **Relative clause island:**[10]

a. Ri xta Maria n-∅-u-k'ul [ri achin ri k'o x-∅-u-tz'ët].
Maria INC-B_{3sg}-A_{3sg}-meet the man RC ∃ COM-B_{3sg}-A_{3sg}-see
'Maria will meet the man who saw something.'

b. * K'o n-∅-u-k'ul [ri achin ri x-∅-u-tz'ët] (ri xta Maria).
∃ INC-B_{3sg}-A_{3sg}-meet the man RC COM-B_{3sg}-A_{3sg}-see Maria
Intended: 'There's something$_i$ that Maria will meet the man who saw it$_i$.'

(25) **Adjunct island:**

a. Yïn x-∅-in-b'än jun pastel [rma k'o x-∅-loq'-**ö** ri jay].
I COM-B_{3sg}-A_{1sg}-make one cake because ∃ COM-B_{3sg}-buy-**AF** the house
'I made a cake because someone bought the house.'

b. * K'o x-∅-in-b'än jun pastel (yïn) [rma x-∅-loq'-**ö** ri
∃ COM-B_{3sg}-A_{1sg}-make one cake I because COM-B_{3sg}-buy-**AF** the
jay].
house
Int.: 'There's someone$_i$ that I made a cake because they$_i$ bought the house.'

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 $\overline{\text{A}}$-movement. This

[10]The relative clause in the baseline sentence (24a) is a subject relative headed by "man" with a preverbal object existential. The relative clause in (24a) notably lacks AF on its verb form. If AF is used, the relative clause is no longer grammatical with the intended interpretation. Relative clauses of this form are an important part of the argumentation in this paper and will be discussed in detail in section 3.2. Here I focus on the contrast between (24a) and (24b) to establish the $\overline{\text{A}}$-movement properties of the argument existential *k'o*. Note also that the structures in (24b) and (25b) continue to be ungrammatical even if the embedded verb is changed to AF in (24b) or the embedded verb is changed to be non-AF in (25b).

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 $\overline{\text{A}}$-movement is the most theoretically parsimonious move. This affords the generalization that it is $\overline{\text{A}}$-operators and only $\overline{\text{A}}$-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 $\overline{\text{A}}$-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 $\overline{\text{A}}$-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 $\overline{\text{A}}$-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 $\overline{\text{A}}$-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 $\overline{\text{A}}$-extracted, *because this movement is now necessarily longer*, AF is not triggered.

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

a. [$_{\text{CP}}$ subject [$_{\text{TP}}$ ___ ...
↑——X——┘
⇒ movement too short, Agent Focus required

b. [$_{\text{CP}}$ subject [*...intervening material...* [$_{\text{TP}}$ ___ ...
↑————————————————┘
⇒ 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-tëj 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-tëj / ✓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-tëj / *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.[11]

3.2 Multiple extractions

The second class of motivating examples comes from clauses which involve multiple $\overline{\text{A}}$-extractions. In Kaqchikel, if a clause contains multiple arguments that require fronting to a preverbal position, all of them are fronted.[12] This results in clauses where multiple $\overline{\text{A}}$-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:**

a. Achike k'o x-∅-tz'et-**ö**?
who $\overline{\exists}$ COM-B_{3sg}-see-**AF**
✓ 'Who did someone see?'
* 'Who saw someone?'

b. Achike k'o x-∅-u-tz'ët?
who $\exists$ COM-B_{3sg}-A_{3sg}-see
* 'Who did someone see?'
✓ 'Who saw someone?'

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 $\overline{\text{A}}$-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 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

[11] Many but not all preverbal adverbs have this effect. These do not form natural classes—for example, *aninäq* '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, *v*P, 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.

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

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.[13] The relevant structures for (29a,b) are schematized below.

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

a. $[_{CP_1}$ object $[_{CP_2}$ subject $[_{TP}$ ___ ... $[_{vP}$ ... V ___ (=29a)

⇒ movement too short, Agent Focus required

b. $[_{CP_1}$ subject $[_{CP_2}$ object $[_{TP}$ ___ ... $[_{vP}$ ... V ___ (=29b)

⇒ movements long enough, no Agent Focus

Examples with other combinations of preverbal $\overline{\text{A}}$-operators all follow this pattern in (29): AF is required if the subject of the transitive verb has $\overline{\text{A}}$-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-∅-tj-**ö**]
the man RC ∃ COM-B_{3sg}-eat-**AF**
✓ 'The man who someone ate'
* 'The man who ate something'

b. ri achin ri [k'o x-∅-u-tëj]
the man RC ∃ COM-B_{3sg}-A_{3sg}-eat
* 'The man who someone ate'
✓ 'The man who ate something'

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

a. Ja yïn k'o x-i-tz'et-**ö**.
FOC me ∃ COM-B_{1sg}-see-**AF**
✓ 'It's me that someone saw.'
* 'It's me who saw someone.'

b. Ja yïn k'o x-∅-in-tz'ët.
FOC me ∃ COM-B_{3sg}-A_{1sg}-see
* 'It's me that someone saw.'
✓ 'It's me who saw someone.'

(33) ***K'o* & *k'o*:**[14]

a. K'o k'o x-∅-tz'et-**ö**.
∃ ∃ COM-B_{3sg}-see-**AF**
✓ There's something that s.o. saw.
* Someone saw something.

b. K'o k'o x-∅-u-tz'ët.
∃ ∃ COM-B_{3sg}-A_{3sg}-see
* There's something that s.o. saw.
✓ Someone saw something.

[13] I assume that multiple CP maximal projections will be projected in order to host the multiple $\overline{\text{A}}$-operators in the periphery, with one specifier per CP projection (Watanabe, 1992; Rizzi, 1997). This makes the projections labeled "CP_1" and "CP_2" here distinct for the purposes of evaluating whether a movement step is too short or not. More detailed derivations will be presented below.

(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.[15]

(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 Ramon ∄ 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).[16]

(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

[14] A reviewer asks whether the argument existential *k'o* could actually be an existential predicate *k'o* (discussed in footnote 8) taking a headless relative clause. The grammaticality of examples such as (33) with multiple, crossing argument existentials shows that this cannot be the case, because argument existentials are sensitive to relative clause islands (24).

[15] Example (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.

[16] Broadwell (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."

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.[17]

(37) **AF in ditransitive clauses:**

a. Achike *x-∅-u-täq / ✓x-∅-taq-**ö** ri sik'iwuj che jun winäq?
who COM-B_{3sg}-A_{3sg}-send / COM-B_{3sg}-send-**AF** the book to one man
'Who sent the book to a man?'

b. Achike [k'o achoj che] ✓x-∅-u-täq / *x-∅-taq-**ö** ri sik'iwuj?
who ∃ whose to COM-B_{3sg}-A_{3sg}-send / COM-B_{3sg}-send-**AF** the book
'Who sent the book to someone?'

I propose that AF is a response to movement that is *too short*. The generalization in (36) is then telling us that movement of a transitive subject to immediately preverbal position counts as "too short," triggering the AF form, while movement past another preverbal operator is not "too short."

It is important for this argument to show that, in those cases where AF is not used, the subject has indeed $\overline{\text{A}}$-moved instead of being base-generated high. For example, we could imagine two different derivations for example (33b): one where the subject *k'o* has indeed $\overline{\text{A}}$-moved across another preverbal operator (38a) and one where an existential *k'o* is base-generated in non-immediately-preverbal position and binds a null bound variable below (38b). If (38b) is the correct derivation, we would have an alternative explanation for the surprising lack of AF in such cases: we could say that AF truly tracks the $\overline{\text{A}}$-movement of the subject but the subject has not $\overline{\text{A}}$-moved in such cases.

(38) **Two possible derivations for (33b):**

K'o k'o x-∅-u-tz'ët.
∃ ∃ COM-B_{3sg}-A_{3sg}-see
* There's something that someone saw.
✓ Someone saw something.

a. *$\overline{A}$-moving subject* k'o*:*

K'o k'o xutz'ët ___obj ___subj?
∃ ∃ saw

b. *Base-generating subject* k'o *high:*

K'o$_i$ k'o xutz'ët ___obj *pro*$_{\text{subj},i}$?
∃ ∃ saw

I will show that in general there is no option to base-generate $\overline{\text{A}}$-operators in non-immediately-preverbal position and therefore the correct derivation of (33b) is (38a). Evidence will come

[17] The argument existential for the indirect object in (37b) involves *k'o*, the posessor *wh*-word *achoj*, and the preposition *che*. *K'o achoj che* together acts as "to someone."

from island-sensitivity. Example (39) shows that *k'o* in embedded clauses can move optionally to higher clauses, with scope consequences. Examples (40–41) show that such movement to non-immediately-preverbal position cannot cross syntactic islands.

(39) **Baseline: Long-distance movement of *k'o* to non-immediately-preverbal position**

a. K'o n-∅-noji-**n** [chin k'o yawa'].
∃ INC-B_{3sg}-think-**AF** that ∃ sick
'Someone thinks that someone is sick.'

b. ✓ K'o k'o n-∅-noji-**n** [chin yawa'].
∃ ∃ INC-B_{3sg}-think-**AF** that sick
'There is someone that someone thinks is sick.'

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

a. K'o x-∅-k'ul-**ö** [ri achin ri k'o 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'o k'o 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'o x-∅-b'an-**ö** jun pastel [rma k'o 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'o k'o 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 $\overline{\text{A}}$-operators could be base-generated in non-immediately-preverbal positions, examples (40b) and (41b) should be grammatical. Therefore, $\overline{\text{A}}$-operators in non-immediately-preverbal position must have $\overline{\text{A}}$-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 $\overline{\text{A}}$-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.

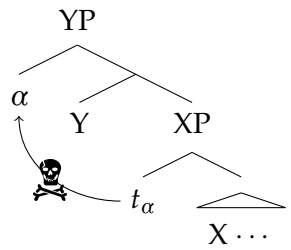
4 Proposal

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 $\overline{\text{A}}$-movement in Kaqchikel is subject to Spec-to-Spec Anti-Locality, repeated here from (4).

(42) **Spec-to-Spec Anti-Locality:**
$\overline{\text{A}}$-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.

(44)



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 (vP, 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).[18]

(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.[19] 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.

[18] The contraint 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 $\emptyset$.

[19] The 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 28.

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.[20] 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).

(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]]]
↑_____|↑_____| ⇒ "inflected verb – object – subject"

The verbal complex spells out the φ-features valued by the A and B probes, subject to the morphological realization rules in (48).[21] This results in the desired pattern of agreement, repeated here from (7a):

[20] Subject-initial word orders will be discussed in section 4.4.

[21] Tada (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. (to appear) 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). I instead focus primarily on the Kaqchikel-internal distribution of AF, although the distribution of AF in the Mayan languages of Popti' and Akatek will be discussed later in section 6.1.

It is not clear whether or not Tada's generalization 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, as well as footnote 55 for a note on Ixil, a Mayan language that does not obey Tada's generalization.

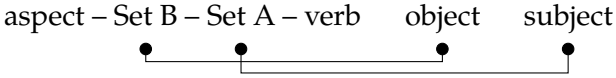
(48) **The realization of the Kaqchikel verbal complex (T+v+V):**
Template: aspect – Set B – Set A – verbal root – (AF)

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.[22]

c. AF suffix: If the verb has an argument whose φ-features are not cross-referenced on the verb, realize the AF suffix.[23]

(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.[24]

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

Roj	✓n-∅-**qa**-b'ij	/ *y-**oj**-(r)-b'ij	[$_{CP}$ chin ...
we	INC-B$_{3sg}$-**A**$_{1pl}$-say	/ INC-**B**$_{1pl}$-(A$_{3sg}$)-say	that

'We say that...'

[22] In 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.

[23] The realization of the AF suffix depends on the verb stem type: if the verb stem is *V*-final or *Vj*-final, the AF suffix is *-n* (in the latter case, replacing the final *-j* consonant); otherwise it is *-ö*.

[24] Note 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.

Now let's see what happens if the subject is an $\overline{\text{A}}$-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 $\overline{\text{A}}$-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). $\overline{\text{A}}$-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,*v*P to Spec,CP.

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

a. Regular transitive clause derivation (47) and $\overline{\text{A}}$-movement of subject:
* [$_{\text{CP}}$ subject C [$_{\text{TP}}$ ___ T+*v*+V [$_{v\text{P}}$ ___ [$_{\text{VP}}$ object]]]
violates Spec-to-Spec Anti-Locality!

b. AF clause derivation, with no subject movement to Spec,TP:
✓[$_{\text{CP}}$ subject C [$_{\text{TP}}$ T+v+V [$_{v\text{P}}$ ___ [$_{\text{VP}}$ 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,*v*P 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:**
[$_{\text{CP}}$ subject C [$_{\text{TP}}$ object T+*v*+V [$_{v\text{P}}$ ___ [$_{\text{VP}}$ ___]]]
⇒ "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 move-

ment is,[25] 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 *v*P 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,*v*P. 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 *v*P edge and within *v*P 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 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.[26] 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 $\overline{\text{A}}$-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 $\overline{\text{A}}$-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-

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

[26] Similar "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.

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 $\overline{\text{A}}$-movement of object:**

✓[$_{\text{CP}}$ object C [$_{\text{TP}}$ subject T+v+V [$_{v\text{P}}$ ___ [$_{\text{VP}}$ ___]]]

⇒ "object – inflected verb – subject"

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 with the subject, realizing its φ-features as Set B agreement on the verb.[27] The A probe is not used.

(55) **Derivation for (unergative) intransitive clauses:**

a. One argument base-generated in vP:
[$_{v\text{P}}$ subject v [$_{\text{VP}}$ V]]

b. Merge T; *no movement* to Spec,TP:
[$_{\text{TP}}$ T [$_{v\text{P}}$ subject v [$_{\text{VP}}$ V]]]

c. Head movement of V → v → T:
[$_{\text{TP}}$ T+v+V [$_{v\text{P}}$ subject $t_{\text{v+V}}$ [$_{\text{VP}}$ t_{V}]]] ⇒ "inflected verb – subject"

The alternative would be a derivation where the A probe on T agrees with the subject and attracts it to Spec,TP. However, in this case the B probe on T—which is always active—will not have a target to agree with. Instead, since the B probe is obligatory while the A probe is optional, the subject in an intransitive clause will stay *in situ* and simply be agreed with by the B probe. The A probe is not used, resulting in a verb form without Set A agreement.[28]

This system derives the ergative-absolutive pattern of agreement alignment on the verb simply through the desire to satisfy XRef as economically as possible. In clauses with two

[27] The situation is the same with an unaccusative verb: T's B probe will agree with the subject of the unaccusative verb, even though it is in a lower phase.

[28] An alternative view would be to describe both the A probe and B probe as optional, and derive the use of the B probe in intransitive clauses through *Economy*. The idea is that φ-agreement of the intransitive subject by the A probe or the B probe would satisfy the constraint XRef equally well in the derivation in (55)—in either case, the verb's single argument will be cross-referenced by the verb. However, the A probe necessarily triggers movement of the subject, because the A probe has the EPP property. Since this alternative derivation using the A probe involves an additional movement step, it will be dispreferred by Economy considerations.

In Optimality-Theoretic terms, this alternative derivation which uses the A probe will be *harmonically bounded* by the proposed derivation which uses the B probe. Because of this, in my formalization of this system with ranked, violable constraints in section 5, the particular ranking of such an Economy constraint will not be important and therefore will not be illustrated. I thank an anonymous reviewer and Ellen Woolford (p.c.) for their thoughts on this point.

φ-agreement targets (transitive clauses), the optional A probe must be used so both targets can be φ-agreed with, resulting in movement of the subject to Spec,TP. In clauses with only one φ-agreement target (intransitive clauses), the subject does not move as it can maximally satisfy XRef without an extra movement step.

Note that this proposal derives the morphological ergativity of Kaqchikel agreement without having to assume an underlying ergative-absolutive alignment of Case-licensing. As in other Mayan languages, nominals in Kaqchikel do not show morphological case alternations.[29]

The other aspect of ergativity in Kaqchikel is of course the $\overline{\text{A}}$-extraction asymmetry observed in the distribution of AF. Only $\overline{\text{A}}$-extraction of subjects of transitive clauses triggers AF morphology. Consider a derivation with $\overline{\text{A}}$-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:
$[_{\text{TP}}\ \text{T+}v\text{+V}\ [_{v\text{P}}\ \text{subject}\ t_{\text{v+V}}\ [_{\text{VP}}\ t_{\text{V}}\ ]\ ]\ ]$

b. $\overline{\text{A}}$-movement of the intransitive subject:
$\checkmark[_{\text{CP}}\ \text{subject C}\ [_{\text{TP}}\ \text{T+v+V}\ [_{v\text{P}}\ \_\_\_\ [_{\text{VP}}\ ]\ ]\ ]$ $\Rightarrow$ "subject – inflected verb"

When the intransitive subject is $\overline{\text{A}}$-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 $\overline{\text{A}}$-

[29] See also Woolford (2014) for arguments against postulating covert ergative case in Mayan languages.

The effects of the constraint XRef here are similar to a violable Case Filter (Grimshaw, 1997; de Hoop and 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/absolutive system and accusative case in a nominative/accusative system as "dependent" cases, whose occurance 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.

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.

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 $\overline{\text{A}}$-operator, as schematized in (58), AF is not used.

(57) **No AF due to preverbal adverb:**
[$_{\text{CP}}$ subject [adverb [$_{\text{TP}}$ ___ ... V(***AF**)

(58) **No AF when moved over another operator:**
[$_{\text{CP}}$ subject [$_{\text{CP}}$ *op* [$_{\text{TP}}$ ___ ... 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 *v*P:
[$_{v\text{P}}$ subject v [$_{\text{VP}}$ V object]]

b. Merge T; subject moves to Spec,TP to feed φ-agreement of both arguments:
[$_{\text{TP}}$ subject T [$_{v\text{P}}$ ___ v [$_{\text{VP}}$ 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 $\overline{\text{A}}$-operators in the periphery, with one specifier per CP projection (Watanabe, 1992; Rizzi, 1997).[30] 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, $\overline{\text{A}}$-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 $\overline{\text{A}}$-operators. As such, the $\overline{\text{A}}$-movement of the subject will cross both TP and the lower CP maximal projections, satisfy-

[30] I 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.

ing 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 $\overline{\text{A}}$-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 complementizer *chin*, as schematized in (63b). This evidence therefore supports our theory in terms of Spec-to-Spec Anti-Locality.

(62) **Long-distance extraction also triggers AF:** (from 18)

Achike n-∅-a-b'ij rat [chin ✓x-oj-tz'et-**ö** / *x-oj-r-tz'ët roj]?
who INC-B_{3sg}-A_{2sg}-say 2sg that COM-B_{1pl}-see-**AF** / COM-B_{1pl}-A_{3sg}-see 1pl

'Who do you say saw us?'

(63) **Explaining the appearance of AF in long-distance extraction:**

a. Movement must be successive-cyclic:
* [$_{CP}$ subject ... [$_{CP}$ *chin* [$_{TP}$ ___ T+*v*+V [$_{vP}$ ___ [$_{VP}$ object]]]

b. Movement over *chin* complementizer is still *too local*:
* [$_{CP}$ subject ... [$_{CP}$ ___ *chin* [$_{TP}$ ___ T+*v*+V [$_{vP}$ ___ [$_{VP}$ object]]]

c. Grammatical long-distance extraction with AF:
✓[$_{CP}$ subject ... [$_{CP}$ ___ *chin* [$_{TP}$ T+*v*+V [$_{vP}$ ___ [$_{VP}$ object]]]

4.4 Subject-initial word orders as topicalization

In this subsection I discuss a potential counter-example to the distribution of AF discussed here, which I have summarized as occuring if and only if a transitive subject moves to *immediately preverbal* position (36). While VOS is the base word order in Kaqchikel, SVO order is possible *without Agent Focus* for subjects which are not one of the AF-triggering

$\overline{\text{A}}$-operators.[31] An example is given in (64a) below. If AF is used instead, the interpretation changes so that the subject has exhaustive focus (64b).

(64) **An immediately preverbal subject without AF:**

a. Ri a Pedro x-∅-u-ch'äk ri premio.
Pedro COM-B_{3sg}-A_{3sg}-win the prize
'Pedro won the prize.'

b. (Ja) ri a Pedro x-∅-ch'ak-**ö** ri premio.
FOC Pedro COM-B_{3sg}-win-**AF** the prize
'It's Pedro that won the prize.'

The SVO word order without Agent Focus as in example (64a) is, on the surface, problematic for the empirical generalization presented thus far regarding the distribution of AF: that AF is triggered if and only if the subject has moved to an *immediately preverbal position*. The important question is where exactly this pre-verbal subject is and, in particular, whether it is in the same position as those other immediately preverbal subjects which do require AF.

I propose that such SVO word order without AF is the result of subject topicalization. It has been proposed in Aissen (1992) that Mayan languages have a distinct Topic position above the position of other $\overline{\text{A}}$-operators. I propose that Kaqchikel too has a dedicated Topic position, which I will call the specifier of TopP, and that this position is necessarily *higher* than the Spec,CP position to which AF-triggering subjects move.[32] Furthermore, I propose that a maximal projection of CP is always projected under TopP, even if there is no pronounced material in C or Spec,CP. CP contrasts with other projections in the articulated left periphery in satisfying the semantic function of clause-typing, and therefore is present in all (finite) clauses. The relation of this proposal to the articulated left periphery are discussed further in the conclusion in section 7.

Subject $\overline{\text{A}}$-movement to this topic position will necessarily cross both TP and CP projections, satisfying Spec-to-Spec Anti-Locality (65). Therefore AF is not used. All AF-triggering $\overline{\text{A}}$-operators, on the other hand, move to the specifier of a (possibly split or recursive) CP.[33]

[31] Such subject initial word orders are common in this variety of Kaqchikel (Clemens, 2013), and in modern Kaqchikel more generally (England, 1991; García Matzar and Rodríguez Guaján, 1997). Other researchers, however, report that verb-initial orders are still very productive in at least some varieties of the language (Broadwell, 2000; McKenna Brown et al., 2006).

[32] An anonymous reviewer asks whether movement of an argument from inside CP to Spec,TopP without passing through Spec,CP will violate Phase Impenetrability. It need not, by adopting the view that the highest head in an extended projection will behave as the phase head (Bošković, 2013).

[33] Based on my observation that only immediately preverbal subjects trigger AF, reported here in section 3.2, Clemens (2013) suggests a similar explanation for SVO word order clauses without AF. Clemens (2013) pro-

(65) **Subject movement to Spec,TopP does not trigger AF:**

[$_{\text{TopP}}$ subject [$_{\text{CP}}$ [$_{\text{TP}}$ ___ ... [$_{v\text{P}}$ ___ v ...

$\Rightarrow$ does not violate Spec-to-Spec Anti-Locality

Under this proposal, we predict that if a clause has both a topic and an $\overline{\text{A}}$-operator, the topic will necessarily precede the $\overline{\text{A}}$-operator. This prediction is borne out. In (66), we observe that a topic—an immediately preverbal subject which does not trigger AF—cannot intervene between an $\overline{\text{A}}$-operator and the verb:

(66) **Subject topics cannot come between the verb and an $\overline{\text{A}}$-operator:**

a. Preverbal subject in *wh*-question:

* Achike ri a Juan x-∅-u-tëj?
What Juan COM-B_{3sg}-A_{3sg}-eat
Intended: 'What did Juan eat?'

b. Preverbal subject in relative clause (Daeyoung Sohn, p.c.):[34]

* 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

poses that non-AF-triggering preverbal subjects are in a structurally higher position than preverbal $\overline{\text{A}}$-operators which do trigger AF. See Clemens (2013, sec. 4.1) for details.

[34] This 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.

the proposal made here, both the subject's base position (Spec,*v*P) 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 $\overline{\text{A}}$-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.[35] In this section I will explore the question of why AF is only possible when it is necessary.

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); Assmann et al. (2013); Coon et al. (to appear), 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.[36] 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.[37]

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).[38] Specifically, I will model competition between complete derivations in

[35] Note 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).

[36] Coon et al. (to appear) argues for this view that, in Mayan languages with AF, the subject of transitive clauses cannot be straightfowardly extracted due to a problem with Case-licensing the object. However, they then state languages may have different strategies for extracting the subject argument in such cases. They specifically note that their analysis of AF as a last-resort case assigner, put forth for Q'anjob'al, may not extend to other Mayan languages with AF, including Kaqchikel.

[37] See in particular Ordóñez (1995) which uses Agent Focus in Popti' as an explicit argument for Chomsky's (1991) notion of "last-resort"; Coon et al. (to appear) follows Ordóñez (1995) in describing this strategy as a "last-resort." Assmann et al. (2013, p. 404) also acknowledges this "repair strategy" question.

[38] There 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

a candidate set, which are each converging derivations sharing the same input numeration and semantic interpretation. Candidates incur violations, indicated as stars in tableaus, 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.[39]

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

a. Spec-to-Spec Anti-Locality (SSAL):
Assign one violation per $\overline{\text{A}}$-movement step which is too close, as defined in (4).

b. XRef:[40]
Assign one violation per argument which is not cross-referenced (see 46; Woolford 2003).

I begin by formalizing the derivation of Kaqchikel clause structure motivated in section 4. In transitive clauses without $\overline{\text{A}}$-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.

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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. Preminger (2011, 2014) ultimately argues against the type of violable constraints model that I propose here; see footnote 41 below.

[39] I 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.

See further discussion in section 5.3.

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

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

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

Now consider a transitive clause where the subject will be $\overline{\text{A}}$-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 ≫ XRef, as discussed informally in the previous section.

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

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

straints 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-{✓at/*∅}-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-{✓at/*∅}-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).[41,42] Derivations where the B probe targets the subject and those where it targets the object are both considered as candidates in the tableau.[43]

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

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.

[41] Preminger (2011, 2014) presents arguments against modeling this pattern of agreement in AF, which descriptively follows the salience hierarchy in (74), through a set of violable constraints such as {*XRef-Participant*, *XRef*}. (A constraint equivalent to (75) is called *HaveAgrWith1/2* there.) In brief, he notes a striking similarity between the first- and second-person forms for Set B agreement markers and pronouns, but not for third-person forms. He proposes that Set B agreement is actually a combination of clitic doubling for first- and second-person arguments and a number probe for third-person arguments, and that both the preference for agreeing with first- and second-person arguments in AF as well as the morphological form of Set B markers can be explained together through this proposal. Instead, under my proposal, Set B agreement is a uniform process, whose target is governed by the constraint interaction modeled here, and the apparent connection between the agreement alignment in AF and the form of Set B markers would be a morphological accident. Preminger (2014) also notes a possible extension of his approach to patterns of argument licensing in Zulu.

While this argument makes Preminger's approach attractive, note that he limits his attention to discussing the pattern of agreement under AF. He offers no explanation for why AF generally appears obligatorily when transitive subjects are extracted and why this requirement for AF is obviated under certain person configurations, let alone its locality-sensitive distribution presented here. The proposal here instead offers a comprehensive approach to the distribution of Kaqchikel AF and its agreement facts.

[42] Here 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.

[43] Recall 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.

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

	Candidates	SSAL	XRef	XRef-P
		strictly ranked		
	[$_{CP}$ S_{2sg} [$_{TP}$ ___ T+*v*+V [$_{vP}$ ___ [$_{VP}$ O_{3sg}]]]] ⇒ "S V O," Set A = 2sg (S), Set B = 3sg (O)	*!		
☞	[$_{CP}$ S_{2sg} [$_{TP}$ T+*v*+V [$_{vP}$ ___ [$_{VP}$ O_{3sg}]]]] ⇒ "S V O," AF form, no Set A, Set B = 2sg (S)		* (O)	
	[$_{CP}$ S_{2sg} [$_{TP}$ T+*v*+V [$_{vP}$ ___ [$_{VP}$ O_{3sg}]]]] ⇒ "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.*[44] 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 yïn x-at-in-tzët rat.
FOC me COM-B_{2sg}-A_{1sg}-see you
'It was ME that saw you.'

b. * Ja yïn x-i-tz'et-**ö** rat.
FOC me COM-B_{1sg}-see-**AF** you

c. * Ja yïn x-a-tz'et-**ö** rat.
FOC me COM-B_{2sg}-see-**AF** you

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.

[44] The 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.

(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 $\overline{\text{A}}$-movement of subject (77):**

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

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

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. As we have seen, this "last-resort" itself has an

exception: when both arguments of the verb are first- or second-person, the verb appears in the full agreement transitive form even if it stands in a configuration where AF is otherwise required. Therefore, if the mechanism which results in AF is a "last-resort" variant of the derivation, there would have to be an *additional* strategy or repair, which is a *last-resort to a last-resort*.

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

Q: Is the transitive verb's subject $\overline{\text{A}}$-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!*** Use the normal transitive verb form after all.

To see concretely why this is problematic, consider a last-resort approach to AF as in e.g. Ordóñez (1995) and Assmann et al. (2013).[45] Under these proposals, $\overline{\text{A}}$-extraction of the subject of a transitive clause leaves the object unable to receive absolutive Case. AF morphology is then the realization of a last-resort absolutive Case assigner, and it is obligatory in such cases because *there is no other way to rescue the structure*. However, if the arguments of the verb must both be cross-referenced, suddenly the non-AF form of the verb is used. That is, there must be another repair mechanism, a *last-resort to the last-resort*, which allows for absolutive Case to be assigned to the object *without* invoking AF, for use only in these 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.[46]

Furthermore, it is suspicious that the verb form used in these subject extractions with two participant arguments is identical to what appears in corresponding non-AF clauses. If this were the result of an exceptional last-resort to the last-resort strategy, rescuing the derivation which would otherwise lack a Case-assigner for the object, we might expect it to be morphologically distinct from the standard full agreement transitive form. Instead,

[45] As noted in footnote 36 above, Coon et al. (to appear) also put forth an analysis of AF as a last-resort case assigner for Q'anjob'al, but makes it clear that this approach is not intended for AF in other Mayan languages including Kaqchikel.

[46] In addition, the Case-based approaches do not predict the generalization that AF is sensitive to the locality of extraction, as shown in previous sections.

the last-resort to the last-resort results in a verb form which looks as if AF had not been attempted at all.

In contrast, the observed behavior naturally falls out of a system of ranked, violable constrains acting over a set of competing derivations, where a higher-ranked constraint can make what is otherwise a marked structure the optimal candidate. As noted briefly in footnote 39, the idea of competing derivations is not incompatible with derivational syntax in the Minimalist tradition; see for example the "reference set" in Chomsky (1995). But note that there are different conceptions of how optimality interacts with the derivational process. One possibility is that optimality is *global*: derivations for the entire utterance are built up and compared to one another. Another is that optimality is more *local*: at certain points in the derivation, alternative local derivations are compared, the optimal structure is chosen, and that optimal structure forms the basis of further derivation above.

As noted by a reviewer, the approach to Kaqchikel AF that I have pursued here requires either global optimality or local optimality that is evaluated at the clause or phase level, as in Heck and Müller (2001); Fanselow and Ćavar (2001). Any cyclic evaluation procedure that is more granular will be incompatible with my proposal for AF. Consider what would happen if derivations were evaluated for optimality phrase-by-phrase. A tableau with two possible TP derivations—one with movement of the subject to Spec,TP and one without—is illustrated in (82).

(82) **Hypothetical evaluation at TP, given an input transitive *v*P structure:**

	Candidates	SSAL	XRef
☞	Merge T; head-move; move S to Spec,TP: $[_{TP}$ S T+*v*+V $[_{vP}$ ___ $[_{VP}$ O]]] ↑ └──────┘ ⇒ Set A = subject, Set B = object		
	Merge T; head-move; *do not move S to Spec,TP*: $[_{TP}$ T+*v*+V $[_{vP}$ S $[_{VP}$ O]]] ⇒ AF form, no Set A, Set B agrees with S or O		*!

If an optimal structure must be chosen at this TP phrase level, the TP with movement of the subject will win and we will never yield an AF clause—a clause without movement of the subject to Spec,TP. The problem is that, at the point where TP is constructed, there is not enough information as to whether the higher ranked Spec-to-Spec Anti-Locality constraint will be violated or not. Instead, if derivations are built up through the CP phase and then evaluated for optimality, the behavior of AF through optimality can be captured. The distribution of AF here then not only forms an argument for the use of constraint-based evaluation in syntax, but also shows that this competition must act on alternative derivations of at least phase size.

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.[47]

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 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. The definitions for these violable constraints are repeated here:

(83) **The constraints:**

a. Spec-to-Spec Anti-Locality (SSAL): (=68a)
Assign one violation per $\overline{\text{A}}$-movement step which is too close, as defined in (4).

b. XRef: (=68b)
Assign one violation per argument which is not cross-referenced (see 46; Woolford 2003).

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

[47] The 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 "[$_{\text{YP}}$ α [Y [$_{\text{XP}}$ 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. Note that using the combination of an anti-locality constraint and Phase Impenetrability to capture extraction restrictions is also the logic of Abels's (2003) work on stranding. However, Abels considers a different formulation of anti-locality, explaining a different set of facts.

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.

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:[48]

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

a. XRef-Participant ≫ Spec-to-Spec Anti-Locality ≫ 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 ≫ {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 ≫ 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: Popti' and Akatek, both of the Qanjob'alan family.[49] The Popti' 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 $\overline{\text{A}}$-extraction of its subject, and (c) the object is not turned into an oblique.[50] As both languages exhibit AF, I begin by assuming the basic constraint ranking Spec-to-Spec Anti-Locality ≫ XRef.[51]

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, descrip-

[48] As noted by an anonymous reviewer, the ranking of XRef-Participant ≫ 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.

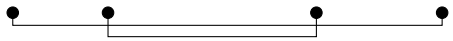
[49] Basic word order in both Popti' and Akatek is VSO (Ordóñez, 1995; Zavala, 1997). Popti' has also been called "Jakaltek" and "Jacaltec" in previous literature.

[50] This 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.

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

tively following a salience hierarchy. In Popti' 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 Popti'; Zavala 1997 p. 452 for Akatek; also Dayley 1981; Stiebels 2006).[52] These patterns are schematized below:

(85) **Popti' and Akatek full agreement transitive verb:** (cf Kaqchikel in (49))
aspect – Set B – Set A – verb subject object



(86) **Popti' and Akatek AF verb:** (cf Kaqchikel in (73))
subject aspect – Set B – verb – **AF** object

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, Popti' and Akatek diverge. In Popti', if the extracted transitive subject is a participant argument, the AF verb form cannot be used (88b) and a full agreement transitive form is used instead (88c). Compare this to the baseline Popti' AF alternation in (87).[53]

(87) **Popti' 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?'

(88) **Popti' 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.'

[52] A reviewer asks how Set B agreement in Popti' and Akatek can be ensured to strictly target the object. One option would be to locate the B probe in Popti' and Akatek on a lower head than in Kaqchikel: for example, if the B probe is located on v, when v is merged into the structure, the B probe will probe down and find the object. This suggestion, however, is speculative at this point. I will leave for future research the precise mechanism ensuring this alignment.

[53] The orthography here for Popti' follows Grinevald Craig (1979). The symbol *7* is a glottal stop. Grinevald Craig (1979) writes example (87) with a space in the middle of the verbal complex, but not (88). The order of morphemes in the verbal complex is, however, identical across Popti', Akatek, and Kaqchikel.

The same pattern of Popti' data as in (87–88) with first-person used instead of second-person is documented in Robertson (1980, p. 20).

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

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

Popti' 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 Popti', XRef-Participant must outrank Spec-to-Spec Anti-Locality. I present tableaux below for the structures in (87b) and (88b–c):

(89) **Popti' 3sg-subject/2sg-object clause with $\overline{\text{A}}$-movement of subject (87b):**

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

(90) **Popti' 2sg-subject/3sg-object clause with $\overline{\text{A}}$-movement of subject (88b–c):**

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

Note that the constraint ranking motivated for Popti', then, is the same as for Kaqchikel: XRef-Participant ≫ Spec-to-Spec Anti-Locality ≫ XRef (84a). However, due to the basic difference in the possible targets of Set B agreement (strictly the object in Popti' 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 Popti', 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:[54,55]

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

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

b. * Ja'-in ∅-w-ij-toj naj unin.
FOC-1sg B_{3sg}-A_{1sg}-back.carry-DIR boy

This motivates a different constraint ranking than Kaqchikel or Popti'. Akatek does *not* have a highly-ranked XRef-Participant which enforces agreement with the participant subject in (91) 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 ≫ {XRef-Participant, XRef} (84b).

[54]The 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.

[55] According 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:**

∅-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 ∅-q'os-on-aš
1sg COM-hit-**AF**-B_{2sg}

'It's me that hit you.'

It is worth noting that Ixil is an exception to Tada's generalization (footnote 21), as its Set B marker follows the verbal root and yet it exhibits AF (ii).

(92) **Akatek 1sg-subject/3sg-object clause with $\overline{\text{A}}$-movement of subject (91):**

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

Popti' and Akatek therefore exemplify two of the three types of Mayan languages predicted in (84). The final family of languages, which rank Spec-to-Spec Anti-Locality below XRef (84c), will be those which do not exhibit AF. This description applies to many Mayan languages. Example (93) 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:

(93) **Chol is a Mayan language without Agent Focus (Coon et al., to appear):**

Maxki tyi y-il-ä-yety?
who ASP A_3-see-TV-B_2

'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:

(94) **$\overline{\text{A}}$-movement of a transitive subject, in a Mayan language without AF (cf 70):**

	Candidates	XRef	SSAL
☞	$[_{CP}\ S\ [_{TP}\ \_\_\_\ T\text{+}v\text{+}V\ [_{vP}\ \_\_\_\ [_{VP}\ O\ ]]]]$ $\Rightarrow$ "S V O," Set A = subject, Set B = object (e.g. 93)		*!
	$[_{CP}\ S\ [_{TP}\ T\text{+}v\text{+}V\ [_{vP}\ \_\_\_\ [_{VP}\ O\ ]]]]$ $\Rightarrow$ "S V O," AF form, no Set A, Set B = subject	* (O)	
	$[_{CP}\ S\ [_{TP}\ T\text{+}v\text{+}V\ [_{vP}\ \_\_\_\ [_{VP}\ O\ ]]]]$ $\Rightarrow$ "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. It remains to be seen whether the types of arguments

I have given here for the locality-sensitivity of Kaqchikel AF (section 3) can be reproduced in other Mayan languages, as is predicted by this account. I will leave this investigation for future research.[56]

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.[57] The proposal motiviated 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 (95a). 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 (95b). It therefore must skip the Spec,TP position, foregoing φ-agreement with T (95c).[58] This is the source of anti-agreement. The extraction of other arguments, however, will not affect the agreement on T.

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

a. T normally agrees with and attracts α to Spec,TP:
$[_{TP}\ \alpha\ T \ldots [_{vP} \ldots \_\_\_ \ldots$

b. Subsequent movement of α from Spec,TP to Spec,CP is ungrammatical:
$*\ [_{CP}\ \alpha\ C\ [_{TP} \_\_\_\ T \ldots [_{vP} \ldots \_\_\_ \ldots$
⇒ movement too short!

c. Extraction of α to Spec,CP instead skips Spec,TP:
$\checkmark[_{CP}\ \alpha\ C\ [_{TP}\ T \ldots [_{vP} \ldots \_\_\_ \ldots$
⇒ anti-agreement!

In Kaqchikel, transitive subjects are moved to Spec,TP by the A probe. The logic in (95) 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

[56] I preliminarily note that the types of arguments I present in section 3 for Kaqchikel may not all be testable in other languages, for independent reasons. For example, multiple simultaneous $\overline{\text{A}}$-extractions as in section 3.2 are not possible in Q'anjob'al (Pedro Mateo Pedro, p.c.).

[57] Stiebels (2006) briefly discusses the similarity of Mayan AF to anti-agreement effects, but ultimately concludes that they cannot be analyzed together.

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

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 60 below), Trentino and Fiorentino allow for an "inversion" word order where the subject is in postverbal position. Although the verb normally agrees with subjects (96), it does not agree with subjects in postverbal position (97), instead simply reflecting default, third-singular masculine φ-features.[59]

(96) **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)

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

a. Gl'- ha telefonato delle ragazze. Fiorentino

b. ∅ 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.

[59] In 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.

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

a. Quante ragazze gli ha parlato con te? Fiorentino

b. Quante putele ∅ ha parlá con ti? Trentino
How many girls CL$_{3sm}$ has$_{3sm}$ spoken with you
'How many girls talked to you?'

(99) **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 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.[60]

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 Karitiâna, a Tupian language of the Brazilian Amazon. The Karitiâna verb has one agreement slot, which agrees with the subject in transitive clauses (100a–c) and the object in transitive clauses (100d–f). Karitiâna does not have any morphological case marking (Storto, 1999).

[60] An important question is why fronting of the subject is apparently optional, as exemplified by the "inversion" structures in (97), 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, that focused arguments stay low, which outranks XRef.

(100) **Absolutive agreement alignment in Karitiâna (Storto, 2012):**

a. Y-pyr-ahy-dn yn.
AGR$_{1sg}$-ASSERT-drink-NFUT 1sg
'I drank.'

b. A-pyr-ahy-dn an.
AGR$_{2sg}$-ASSERT-drink-NFUT 2sg
'You drank.'

c. ∅-Pyr-ahy-dn i.
AGR$_3$-ASSERT-drink-NFUT 3sg
'He/she drank.'

d. Y-pyr-ahoj-on yn õwã.
AGR$_{1sg}$-ASSERT-laugh.at-NFUT 1sg child
'The child laughed at me.'

e. A-pyr-ahoj-on an õwã.
AGR$_{2sg}$-ASSERT-laugh.at-NFUT 2sg child
'The child laughed at you.'

f. ∅-Pyr-ahoj-on i õwã.
AGR$_3$-ASSERT-laugh.at-NFUT 3sg child
'The child laughed at him/her.'

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, Karitiâna exhibits what is essentially the reverse pattern.[61] Extraction of the transitive subject does not affect the verbal morphology (101). When an intransitive subject is extracted, an invariant anti-agreement morpheme (glossed PART by Storto) is used in place of the agreement morpheme (102).[62] When a transitive object is extracted, the verb exceptionally agrees with the *subject* and an additional invariant morpheme is added, which Storto (1999, *et seq*) calls the *Object Focus* marker (OF) (103). (The following examples all come from Storto (1999).)

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

Morã y-sokõ'i?
who AGR$_{1sg}$-tie.up

'Who tied me up?'

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

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

'Who cried?'

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

'Ep aj-**ti**-pasagngã-t ajxa.
trees AGR$_{2pl}$-**OF**-count-NFUT 2pl

'TREES, you all are counting.'

[61] The formal similarity of Mayan AF and Karitiâna anti-agreement was first discussed in Hale and Storto (1996) and Richards (1997).

[62] 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.

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).[63] The absolutive anti-agreement observed follows from the logic of anti-agreement presented here (95). 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 $\overline{\text{A}}$-extracted skip Spec,TP, satisfying Spec-to-Spec Anti-Locality at the expense of XRef (102). This yields a verb form with no agreement marking. $\overline{\text{A}}$-extracted objects also skip Spec,TP, but allow T to exceptionally agree with the subject, explaining the exceptional pattern of agreement in (103) 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 $\overline{\text{A}}$-extraction" in Aldridge (2004)—which has also been used to describe Mayan AF (though not entirely correctly, as we have 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 $\overline{\text{A}}$-extraction of a transitive subject (Aissen 1999a; Stiebels 2006; Coon et al. to appear; 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.

(104) **Spec-to-Spec Anti-Locality:** (=4)
$\overline{\text{A}}$-movement of a phrase from the Specifier of XP must cross a maximal projection other than XP.

[63] Note 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.

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 $\overline{\text{A}}$-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 idiosyncratic 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 pur-

pose 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,[64] 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.

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[64] This 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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