

# DISSOCIATING THE SYNTAX AND MORPHOLOGICAL REALIZATION OF KAQCHIKEL AGENT FOCUS\*

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## 1 Introduction

A common property of many Mayan languages is a change to transitive verb morphology when the subject has been extracted, known as *Agent Focus* (AF) (Aissen, 1999, Stiebels, 2006, Norcliffe, 2009, Coon et al., 2011:a.o.). AF is traditionally described as obligatory whenever the subject of a transitive clause is  $\bar{A}$ -extracted. In this paper I will discuss the morphological realization of AF in Kaqchikel. I argue that the realization of AF in Kaqchikel must be governed by a morphological process which is independent of the syntax of AF. Specifically, I argue that AF morphology is the realization of an abstract [AF] feature which *spreads downwards within a certain domain*, following Bjorkman's (to appear a, to appear b) feature-spreading approach to Affix Hopping-type verbal morphology.

Previous researchers have assumed a one-to-one mapping between  $\bar{A}$ -extraction of the subject and AF-marking on the transitive verb (Aissen, 1999, Stiebels, 2006, Coon et al., 2011). In many cases, this is indeed the case. AF forms can be identified through the AF suffix on the verb, which will always be in bold.<sup>1</sup> (Details of the morphological makeup of the AF verb form will be introduced in section 2.1.)

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<sup>1</sup>Abbreviations used: A = Set A agreement, AF = Agent Focus, B = Set B agreement, COM = completive aspect, FOC = focus marker, INC = incompletive aspect, RC = relative clause marker,  $\emptyset$  = empty string, for phonologically null morphemes.

(1) **A simple transitive clause: no AF allowed**

- a. Iwir x- $\emptyset$ -u-těj ri wäy ri a Juan.  
 Yesterday COM-B<sub>3sg</sub>-A<sub>3sg</sub>-eat the tortilla Juan  
 ‘Yesterday Juan ate the tortilla.’
- b. \*Iwir x- $\emptyset$ -tj-ö ri wäy ri a Juan.  
 Yesterday COM-B<sub>3sg</sub>-eat-**AF** the tortilla Juan

(2) **Transitive subject *wh*-question: AF required**

- a. \*Achike x- $\emptyset$ -u-těj ri wäy?  
 who COM-B<sub>3sg</sub>-A<sub>3sg</sub>-eat the tortilla
- b. Achike x- $\emptyset$ -tj-ö ri wäy?  
 who COM-B<sub>3sg</sub>-eat-**AF** the tortilla  
 ‘Who ate the tortilla?’

AF is also triggered by long-distance  $\bar{A}$ -movement. Consider example (3), which shows the verb “want” *ajo* with a full CP embedding. If we question the subject of the verb “want,” this results in AF-marking on the verb “want,” and no AF-marking on the embedded verb “write” (4a). If we question the subject of the embedded verb “write” through long-distance *wh*-movement, this results in AF-marking on the verb “write,” and no AF-marking on the higher verb “want” (4b). AF on both verbs or on neither one is ungrammatical in these examples.

(3) **“Want” *ajo* with a full CP complement:**

Yin n- $\emptyset$ -w-ajo [chin rat n- $\emptyset$ -a-tsb’aj ri karta]  
 I INC-B<sub>3sg</sub>-A<sub>1sg</sub>-want that you INC-B<sub>3sg</sub>-A<sub>2sg</sub>-write the letter  
 ‘I want you to write the letter.’

(4) **AF morphology tracks which verb’s subject is  $\bar{A}$ -extracted:**

- a. Achike n- $\emptyset$ -ajo-**van** [chin rje n- $\emptyset$ -ki-tsb’aj ri karta]?  
 who INC-B<sub>3sg</sub>-want-**AF** that they INC-B<sub>3sg</sub>-A<sub>3pl</sub>-write the letter  
 ‘Who wants them to write the letter?’
- b. Achike n- $\emptyset$ -r-ajo ri a Juan [chin n- $\emptyset$ -tsb’a-**n** ri karta]?  
 who INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want Juan that INC-B<sub>3sg</sub>-write-**AF** the letter  
 ‘Who does Juan want to write the letter?’

This simple one-to-one correspondence between AF-marking on a verb and  $\bar{A}$ -extraction of that verb’s subject has dictated the desiderata of recent theoretical work aiming to explain the syntax of AF (e.g. Coon et al., 2011, Assmann et al., 2012).

In this paper I will present novel data which breaks this one-to-one correspondence, and therefore calls into question these recent approaches. The problematic data comes from the behavior of AF morphology in clauses with reduced clausal embeddings. The verb “want” *ajo* also has the option of taking a reduced clausal complement, akin to the English control verb “want” (5).

(5) **“Want” *ajo* with a reduced clausal complement:**

Rje n- $\emptyset$ -k-ajo n- $\emptyset$ -ki-tsb’aj ri karta.  
 they INC-B<sub>3sg</sub>-A<sub>3pl</sub>-want INC-B<sub>3sg</sub>-A<sub>3pl</sub>-write the letter  
 ‘They want to write the letter.’

Under the assumption of one-to-one correspondence, we might expect that one  $\bar{A}$ -extraction will result in one instance of AF-marking. However, when we extract the subject of this construction, **both verbs must be in their AF forms** (6a). The AF-marking of both verbs is obligatory, as seen through examples (b–c). *The single subject extraction in (6) results in two realizations of AF.* In section 2.3 I will show that this data leads us to abandon our straightforward mapping between the syntax and morphology of AF.

(6) **AF-marking on both *ajo* and main verb:**

- a. Achike n- $\emptyset$ -ajo-**van**          n- $\emptyset$ -tsb'a-**n**          ri karta?  
 who    INC-B<sub>3sg</sub>-want-**AF** INC-B<sub>3sg</sub>-write-**AF** the letter  
 ‘Who wants to write the letter?’
- b. \* Achike n- $\emptyset$ -r-ajo                  n- $\emptyset$ -tsb'a-**n**          ri karta?  
 who    INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want INC-B<sub>3sg</sub>-write-**AF** the letter
- c. \* Achike n- $\emptyset$ -ajo-**van**          n- $\emptyset$ -u-tsb'aj          ri karta?  
 who    INC-B<sub>3sg</sub>-want-**AF** INC-B<sub>3sg</sub>-A<sub>3sg</sub>-write the letter

I will argue that AF morphology *spreads* onto verbs in a particular domain. This solution is cast within the framework of Distributed Morphology, wherein features assigned in the syntax are realized on terminal nodes through the process of Vocabulary Insertion at spellout. I argue that AF morphology is the spellout of an [AF] feature which is assigned by a higher head, and that this feature can spread onto multiple verbs in its domain, yielding the multiple AF-marking as in (6).

I begin by giving some background on AF in Kaqchikel in section 2.1 and discuss some properties of the reduced embedding under “want” *ajo* in section 2.2. In section 2.3 I argue against the one-to-one correspondence between the syntax and morphology of AF and instead for a morphological spreading approach. In section 2.4 I demonstrate that this spreading of AF morphology can be blocked by intervening adverbs. The patterns of this blocking supports the view that AF morphology spreads top-down. In section 3 I implement my proposal using a system of downward *feature spreading* for verbal inflection, following the work of Matushansky (2008) and Bjorkman (to appear a, to appear b). The approach I advocate for here dissociates the syntax and morphological realization of AF.

In section 4, I will extend the discussion of Kaqchikel AF in two ways. In section 4.1, I look at the fact that AF applies to transitive but not intransitive verbs. I argue that AF morphology does not correspond to the existence of a direct object DP, but rather that the transitive and intransitive status of verbs is a morphological primitive, with intransitive roots unable to express AF morphology. In section 4.2, I discuss the pattern of agreement observed on AF verbs. I will show that the approach presented here, where syntactic processes occur first and then feed the morphological realization, is able to model the distribution of AF documented here. At the same time I will show that recent Case-based approaches to AF (Coon et al., 2011, Assmann et al., 2012) do not predict these patterns and cannot be adopted for Kaqchikel. I conclude in section 5.

## 2 The distribution of Agent Focus in Kaqchikel

### 2.1 Background: AF morphology and environments

In order to discuss the patterns of AF realization, we must first describe the morphological form and syntactic distribution of AF.

The Kaqchikel transitive verb shows agreement with both its subject and object. Following the tradition in the Mayan literature, here I will refer to the agreement affixes in the verb as Set A and Set B, where the A slot expresses agreement with the subject and the B slot shows agreement with the object. A full agreement transitive verb is given in (7a), where the argument DPs themselves have been pro-dropped. In (7b), the subject is *achike* ‘who.’ The subject *wh*-question requires that the verb be in its AF form. In the AF form, the verb loses its Set A agreement slot and gains an AF suffix, whose form depends on the verbal stem. (The remaining Set B agreement slot in AF does not just straightforwardly agree with the object, as will be discussed in section 4.2.) The AF suffix is in bold throughout this paper.<sup>2</sup>

- (7) a. X-at-ki-tz’ët.  
       COM-B<sub>2sg</sub>-A<sub>3pl</sub>-see  
       ‘They saw you (pl).’  
    b. Achike x-a-tz’et-**ö**?  
       who COM-B<sub>2sg</sub>-see-**AF**  
       ‘Who saw you (pl)?’

(8) **Morphology of transitive verbs:**

Full agreement transitive verb:                   Agent Focus transitive verb:  
 ASPECT-B-A-V<sub>trans</sub>                                   → ASPECT-B-V<sub>trans</sub>-**AF**

Contrast these transitive verb forms in (7) with the intransitive below. Intransitive verbs have just one agreement slot, which uses the same Set B markers as were used in the full agreement transitive to express agreement with the object. Thus, Kaqchikel has been described as a language with ergative-absolutive alignment, together with other Mayan languages.<sup>3</sup>

- (9) Rat x-a-wär.  
       you COM-B<sub>2sg</sub>-sleep  
       ‘You slept.’

(10) **Morphology of intransitive verbs:**

ASPECT-B-V<sub>intrans</sub>

Unlike transitive verbs, intransitive verbs do not alternate with an AF form, and thus in this paper I will primarily focus on transitive verbs. Intransitive verbs will be discussed further in section 4.1.

<sup>2</sup>Transitive verbs in Kaqchikel are classified as either *root transitives* or *derived transitives* in the traditional Mayan literature. The AF suffix is normally *-ö* on root transitives and *-n* on derived transitives.

<sup>3</sup>Note that the AF form of transitive verbs, with its loss of Set A agreement, could be thought of as a detransitivizing process—indeed, “Agent Focus” has also been described as a “focus antipassive” in some previous literature on Mayan. See Aissen (1999), Stiebels (2006) for arguments that AF is not an antipassive construction.

AF verb forms appear in four different environments (11). In all of these constructions the subject of a transitive verb is  $\bar{A}$ -moved to a left-peripheral position.<sup>4</sup> I will say in this paper that these  $\bar{A}$ -movements or constructions *trigger* AF morphology on the transitive verb.

(11) **AF-triggering environments:**

- a. subject *wh*-questions,
- b. subject relative clauses,
- c. subject clefts, and
- d. subject existential constructions ...built from transitive clauses.

The variety of Kaqchikel studied here has both SVO and VOS as standard word orders. Standard preverbal subjects do not trigger AF, as seen in (12a). If AF is used for a clause with a preverbal subject, as in example (12b), the subject is necessarily interpreted with exhaustive focus, making it equivalent to a subject cleft (11c). See Eby Clemens, this volume, for further discussion of word order variation and clause structure in this variety of Kaqchikel.

(12) **Standard preverbal subjects do not trigger AF:**

- a. Ri a Juan x- $\emptyset$ -u-těj ri wäy  
 Juan COM-B<sub>3sg</sub>-A<sub>3sg</sub>-eat the tortilla  
 ‘Juan ate the tortilla.’
- b. (Ja) ri a Juan x- $\emptyset$ -tj-ö ri wäy  
 FOC Juan COM-B<sub>3sg</sub>-eat-**AF** the tortilla  
 # ‘Juan ate the tortilla.’  
 ✓ ‘It’s JUAN that ate the tortilla.’

## 2.2 Properties of the reduced clausal embedding under “want” *ajo*

The primary data in this paper will come from examples involving the embedding verb “want” *ajo*, as was previewed in section 1, so it is important to take a moment to better understand the properties of this construction. The verb “want” *ajo* is able to take a full CP embedding as well as a reduced clausal embedding. Two basic examples are repeated from section 1 below:

(3) **“Want” *ajo* with a full CP complement:**

- Yin n- $\emptyset$ -w-ajo [chin rat n- $\emptyset$ -a-tsb’aj ri karta].  
 I INC-B<sub>3sg</sub>-A<sub>1sg</sub>-want that you INC-B<sub>3sg</sub>-A<sub>2sg</sub>-write the letter  
 ‘I want you to write the letter.’

<sup>4</sup>Previous work on AF in other Mayan languages has noted that AF may not occur if the object of the transitive clause is reflexive (Aissen 1999, 2011, Stiebels 2006, and references therein). I note that this does not seem to be the case in this variety of Kaqchikel, as seen in the example below. I thank an anonymous reviewer for asking about this point.

- (i) Achike x- $\emptyset$ -tz’et-ö r-i’?  
 who COM-B<sub>3sg</sub>-see-**AF** A<sub>3sg</sub>-SELF  
 ‘Who<sub>i</sub> saw themselves<sub>i</sub>?’

(5) **“Want” *ajo* with a reduced clausal complement:**

Rje n- $\emptyset$ -k-ajo                      n- $\emptyset$ -ki-tsb'aj                      ri karta.  
 they INC-B<sub>3sg</sub>-A<sub>3pl</sub>-want INC-B<sub>3sg</sub>-A<sub>3pl</sub>-write the letter  
 ‘They want to write the letter.’

In this section I will give three arguments for the structure in (5) being distinct from that in (3) and, in particular, that the complement of “want” *ajo* in (5) is not a full clause. I will show that when “want” takes a reduced clausal embedding as in (5), the embedding (a) cannot be interpreted with an independent subject, (b) cannot have negation or an independent aspect, and (c) cannot serve as the landing site for  $\bar{A}$ -operators which must move to preverbal position. All of these characteristics can be explained if these embeddings under *ajo* are not full CPs and instead are reduced clauses with impoverished functional material.

The first argument for these two distinct types of embeddings comes from the fact that the subject of “want” and the interpreted subject of the embedded verb must be coreferential in the case of a reduced embedding but not in a full CP embedding.<sup>5</sup> As seen in (3), with a full CP embedding, the subject of “want” and the subject in the embedding need not be the same. In (3) this also results in distinct Set A agreement on the two verbs: *ajo* above agrees with its subject “I,” while the embedded verb agrees with its local subject, “you.” In the case of “want” *ajo* with a reduced clausal embedding, however, it is impossible to have distinct subjects. This is shown below in (13), in which we minimally modify (5) by changing the Set A agreement of the embedded verb “write” to be different from that of the embedding *ajo*, resulting in ungrammaticality.

(13) **Reduced clausal complement with disjoint subject:**

\* Rje n- $\emptyset$ -k-ajo                      (rat) n- $\emptyset$ -a-tsb'aj                      ri karta (rat).  
 they INC-B<sub>3sg</sub>-A<sub>3pl</sub>-want you INC-B<sub>3sg</sub>-A<sub>2sg</sub>-write the letter you  
 Intended: ‘They want you to write the letter.’

Note also that the pattern of agreement observed with these reduced clausal embeddings reinforces this coreference. In these constructions, both “want” and the embedded verb show agreement with the subject. This is illustrated in the example below, where the markers realizing agreement with the subject have been boxed:

(14) **Subject agrees with both “want” and its embedded transitive verb:**

Rje x- $\emptyset$ -k-ajo                      x-at-ki-tsb'aj                      rat.  
 they COM-B<sub>3sg</sub>-A<sub>3pl</sub>-want COM-B<sub>2sg</sub>-A<sub>3pl</sub>-write you  
 ‘They want to write you.’

In such cases, the embedding verb “want” necessarily exhibits third-singular Set B agreement. However, the third-singular Set B marker is null and should be considered default or nonexistent (Preminger, 2011). The embedded verb “write” exhibits Set B agreement with its direct object.

<sup>5</sup>When “want” takes a full CP embedding, both coreference and disjoint reference of the subjects are possible. Disjoint reference is seen in example (3) above; coreference can be seen in the example (i) below.

- (i) Yin n- $\emptyset$ -w-ajo                      [chin (yin) in-k'o Guatemala].  
 I INC-B<sub>3sg</sub>-A<sub>1sg</sub>-want that I B<sub>1sg</sub>-be Guatemala  
 ‘I want to be in Guatemala.’

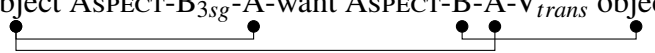
A particularly interesting case is where “want” takes a reduced clausal complement with an intransitive verb, such as *b’e* “go” in example (15). As we saw before in example (14), both “want” and the embedded verb show agreement with the subject. This subject agreement in (14) was realized through Set A morphology on both verbs, since both verbs in (14) are transitive. However, in example (15), this agreement with the first person subject is realized as Set A agreement on “want” and Set B agreement on “go,” reflecting the fact that “want” is morphologically transitive while “go” is morphologically intransitive.

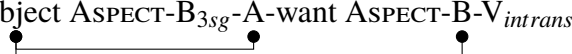
(15) **Subject agrees with both “want” and its embedded intransitive verb:**

Yin n- $\emptyset$ - $\boxed{w}$ -ajo            y- $\boxed{i}$ -b’e    Japon.  
 I    INC-B<sub>3sg</sub>-A<sub>1sg</sub>-want INC-B<sub>1sg</sub>-go Japan  
 ‘I want to go to Japan.’

These patterns of agreement with reduced clausal embeddings are schematized below:

(16) **Agreement patterns with reduced clausal embeddings:**

a. subject ASPECT-B<sub>3sg</sub>-A-want ASPECT-B-A-V<sub>trans</sub> object            e.g. (14)  


b. subject ASPECT-B<sub>3sg</sub>-A-want ASPECT-B-V<sub>intrans</sub>            e.g. (15)  


The second argument for “want” taking both full CP and reduced clausal embeddings comes from the unavailability of independent aspect and negation in the reduced embedding. Full CP embedded clauses under *ajo*, as in (3), are able to have sentential negation *ma...ta* or an independent aspect on the embedded verb “write,” as seen in (17).

(17) **Negation and independent aspect on the full CP embedding:**

a. ✓ Yin n- $\emptyset$ -w-ajo            [chin rat  $\boxed{ma}$  n- $\emptyset$ -a-tsb’aj             $\boxed{ta}$  ri karta].  
 I    INC-B<sub>3sg</sub>-A<sub>1sg</sub>-want that you NEG INC-B<sub>3sg</sub>-A<sub>2sg</sub>-write NEG the letter  
 ‘I want you to not write the letter.’

b. ✓ Yin n- $\emptyset$ -w-ajo            [chin rat  $\boxed{x}$ - $\emptyset$ -a-tsb’aj            ri karta].  
 I    INC-B<sub>3sg</sub>-A<sub>1sg</sub>-want that you COM-B<sub>3sg</sub>-A<sub>2sg</sub>-write the letter  
 ≈ ‘I want you to have written the letter.’

These manipulations are ungrammatical when *ajo* takes a reduced clausal complement, as seen in (18). I argue that this non-CP reduced embedding of *ajo* lacks the functional projections to host negation or an independent aspect. To be clear, the embedded verb in this reduced clausal embedding *is* marked for aspect—however, its valuation must match that of the embedding verb.

(18) **Negation and independent aspect on a reduced embedding:**

a. \* Rje n- $\emptyset$ -k-ajo             $\boxed{ma}$  n- $\emptyset$ -ki-tsb’aj             $\boxed{ta}$  ri karta.  
 they INC-B<sub>3sg</sub>-A<sub>3pl</sub>-want NEG INC-B<sub>3sg</sub>-A<sub>3pl</sub>-write NEG the letter  
 Intended: ‘They want to not write the letter.’

b. \* Rje n- $\emptyset$ -k-ajo             $\boxed{x}$ - $\emptyset$ -ki-tsb’aj            ri karta.  
 they INC-B<sub>3sg</sub>-A<sub>3pl</sub>-want COM-B<sub>3sg</sub>-A<sub>3pl</sub>-write the letter  
 Intended: ‘They want to have written the letter.’

The third argument for these two types of embeddings comes from the existential quantifier *k'o*. *K'o* may be translated as “someone” or “something,” and obligatorily moves to a preverbal position (19).<sup>6</sup> The question is where *k'o* moves to in the two different types of embeddings under *ajo*. As seen in (20), when *ajo* takes a full CP embedding, a *k'o* interpreted as an argument of the embedded verb “eat” can optionally appear before “eat” or before the higher verb *ajo*. When *ajo* takes a reduced clausal complement, however, the embedded verb’s periphery is not a possible landing site for *k'o* to move to, and instead *k'o* obligatorily moves before *ajo*, as seen in (21).

(19) ***K'o* obligatorily moves to preverbal position:**

- a. \* Ri xta Maria n- $\emptyset$ -u-těj k'o.  
 Maria INC-B<sub>3sg</sub>-A<sub>3sg</sub>-eat something  
 Intended: ‘Maria will eat something.’
- b. ✓ Ri xta Maria k'o n- $\emptyset$ -u-těj \_\_\_\_.  
 Maria something INC-B<sub>3sg</sub>-A<sub>3sg</sub>-eat  
 ‘Maria will eat something.’

(20) ***K'o* in CP embedding can be before embedded verb or before *ajo*:**

- a. ✓ Ri a Juan n- $\emptyset$ -r-ajo chin ri xta Maria k'o n- $\emptyset$ -u-těj \_\_\_\_.  
 Juan INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want that Maria something INC-B<sub>3sg</sub>-A<sub>3sg</sub>-eat  
 ‘Juan wants Maria to eat something.’
- b. ✓ Ri a Juan k'o n- $\emptyset$ -r-ajo chin ri xta Maria n- $\emptyset$ -u-těj \_\_\_\_.  
 Juan something INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want that Maria INC-B<sub>3sg</sub>-A<sub>3sg</sub>-eat  
 ≈ ‘There’s something that Juan wants Maria to eat.’

(21) ***K'o* in reduced embedding *must* appear before *ajo*:**

- a. \* Ri a Juan n- $\emptyset$ -r-ajo k'o n- $\emptyset$ -u-těj \_\_\_\_.  
 Juan INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want something INC-B<sub>3sg</sub>-A<sub>3sg</sub>-eat  
 Intended: ‘Juan wants to eat something.’
- b. ✓ Ri a Juan k'o n- $\emptyset$ -r-ajo n- $\emptyset$ -u-těj \_\_\_\_.  
 Juan something INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want INC-B<sub>3sg</sub>-A<sub>3sg</sub>-eat  
 ≈ ‘There’s something that Juan wants to eat.’

In this section I showed that “want” *ajo* can take two different types of embeddings: a full CP complement and a reduced clausal complement. While the two are sometimes superficially similar, I gave three arguments that the reduced embedding is a structure that is smaller than a full clause: first, it cannot have an independent subject; second, it cannot have negation or an independent aspect; and third, it cannot serve as a landing site for the existential quantifier *k'o*.

<sup>6</sup>The diligent reader of footnotes will recall that *k'o* is also the copular or existential predicate in the example in the previous footnote. I argue that these two uses of *k'o*—as an existential predicate and as an existential quantifier—are distinct lexical items. First, the predicate *k'o* shows agreement (observed in the previous footnote), while the operator *k'o* never does. Second, the existential quantifier *k'o* has a negative counterpart *majun* “noone/nothing,” which does not also have a predicative use.



### 2.3 AF morphology spreads downwards

In this section I will discuss in more detail the realization of AF with the reduced clausal embedding verb “want” *ajo* discussed in the introduction. This is a pattern of AF realization where a one-to-one relationship between a verb in its AF form and  $\bar{A}$ -extraction of a subject does not hold. These facts will motivate an approach which dissociates the morphology of AF-marking from its syntactic effect.

Consider example (6), repeated below. This example is a subject *wh*-question of a clause with *ajo* taking a reduced clausal embedding. It shows us that in an AF environment, **both *ajo* and the embedded verb must use their AF forms.**

(6) **AF-marking on both *ajo* and main verb with reduced embedding:**

- a. Achike n- $\emptyset$ -ajo-**van**            n- $\emptyset$ -tsb'a-**n**            ri karta?  
 who    INC-B<sub>3sg</sub>-want-**AF** INC-B<sub>3sg</sub>-write-**AF** the letter  
 ‘Who wants to write the letter?’
- b. \* Achike n- $\emptyset$ -r-jo                    n- $\emptyset$ -tsb'a-**n**            ri karta?  
 who    INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want INC-B<sub>3sg</sub>-write-**AF** the letter
- c. \* Achike n- $\emptyset$ -ajo-**van**            n- $\emptyset$ -u-tsb'aj            ri karta?  
 who    INC-B<sub>3sg</sub>-want-**AF** INC-B<sub>3sg</sub>-A<sub>3sg</sub>-write the letter

This contrasts with cases where *ajo* takes a full CP complement. In this case, AF appears on one verb, simply corresponding to the verb that a subject was extracted from:

(22) **AF does not spread into full CP embeddings:**

- a. Achike n- $\emptyset$ -ajo-**van**            [chin n- $\emptyset$ -u-tsb'aj            ri karta]?  
 who    INC-B<sub>3sg</sub>-want-**AF** that INC-B<sub>3sg</sub>-A<sub>3sg</sub>-write the letter  
 ‘Who<sub>i</sub> wants him/her<sub>j</sub> to write the letter?’<sup>7</sup>
- b. \* Achike n- $\emptyset$ -ajo-**van**            [chin n- $\emptyset$ -tsb'a-**n**            ri karta]?  
 who    INC-B<sub>3sg</sub>-want-**AF** that INC-B<sub>3sg</sub>-write-**AF** the letter

This multiple AF-marking in (6) is the core puzzle I will consider in this paper. In the remainder of this section, I will show that this data forces us to abandon the idea of a simple one-to-one mapping of the syntax and morphology of AF:

(23) **A Straightforward Hypothesis for AF Morphology:**

A transitive verb switches to its AF form if and only if its subject is  $\bar{A}$ -extracted.

In the previous section, I showed that the reduced embeddings under *ajo* require that the subject of *ajo* “want” also be interpreted as the subject of the embedded verb. Standard options include control, restructuring, and raising; for our purposes here, it will simply be important to consider derivations which do and do not include raising. These two potential derivations for the reduced clausal embedding in (6) are schematized in (24):

<sup>7</sup>The interpretation of this *wh*-question with a full CP embedding under “want” seems to require disjoint reference between the matrix subject “who” and the interpreted embedded subject which is pro-dropped in the example above. Since coreference of subjects is in general possible with full CP embeddings under “want” (see footnote 5), the apparently obligatory disjointness observed here may be due to some form of pragmatic blocking. I thank an anonymous reviewer for requesting clarification on this point.

(24) **Two potential derivations for (6):**

- a. who        want write the letter *control/restructuring*  
 ↑  
 b. who        want        write the letter *raising*  
 ↑     ↑     ↑

The first approach is to view *ajo* as a control or restructuring predicate, in which case the subject is base-generated as an argument of *ajo*. In this case, the subject *wh*-word *achike* is not generated as a subject of the embedded verb “write.” If we assume straightforwardly that verbs become AF if and only if their subjects are extracted (23), we expect AF morphology on the higher verb *ajo* “want” but not on “write,” contrary to fact.

The other approach is to analyze *ajo* as a raising verb, in which case *achike* is base-generated as the subject of the embedded verb, “write,” and then *A*-moves to be the subject of *ajo*. Again, if we assume the straightforward mapping in (23), *achike* is  $\bar{A}$ -moved from the subject position of “want” but not from “write,” so we expect no AF morphology on the embedded “write” verb in (6). Alternatively, if this raising analysis is telling us that both *A*-movement and  $\bar{A}$ -movement of subjects triggers AF, we falsely predict that the raising of the subject in non-AF environments should also yield AF. For example, this view would predict AF on the “write” in example (5), repeated here, contrary to fact.

(5) **“Want” *ajo* with a reduced clausal complement:**

Rje n- $\emptyset$ -k-*ajo*                    n- $\emptyset$ -ki-tsb’aj            ri karta.  
 they INC-B<sub>3sg</sub>-A<sub>3pl</sub>-want INC-B<sub>3sg</sub>-A<sub>3pl</sub>-write the letter  
 ‘They want to write the letter.’

This argument shows us that the simple view of the syntax/morphology mapping of AF in (23) is untenable. Two reasonable types of approaches to the analysis of the embedding verb *ajo* “want” are both unable to predict the data in (5–6). This leads us to conclude that our working assumption of a transparent mapping between the syntax and morphology of AF must be incorrect.

Let us step back for a moment to think of what type of analysis could account for this pattern of AF realization. From the arguments above, we can see that what is surprising in (6a) is not that the higher verb, *ajo*, is AF-marked. Under either analysis of the embedding verb *ajo* (24), the subject of *ajo* will be  $\bar{A}$ -extracted. What is surprising is the obligatory AF-marking on the *embedded* verb. In the derivation of these examples, at the point where the reduced clausal embedding has been constructed, there is no information available as to whether the subject of this construction will later be  $\bar{A}$ -moved or not. Thus we expect the syntactic structure of the embedded verb to be exactly the same between (5) and (6). The AF-marking on the embedded verb must be triggered countercyclically by the syntactic derivation above. **This data thus motivates a view where the effects of syntactic changes in the higher domain spread downwards into the reduced embedding, triggering AF morphology on the embedded verb.** In the next section, we will see further evidence for this downward-spreading approach to AF morphology.

## 2.4 AF morphology spreading is blocked by adverbs

In this section I will look at the behavior of adverbs in AF clauses. The addition of certain adverbs to AF clauses “turns off” AF morphology on verbs in the scope of the adverb, breaking the one-to-one correspondence between the syntax and morphology of AF. Consider the subject relative in (25). Since the subject of the transitive verb “eat” has been  $\bar{A}$ -moved for the relativization, the verb is obligatorily in its AF form, as expected. In (26) below, we simply add the adverb “always” to (25):

(25) **Baseline: subject relative**

Wetaman wech [ri achin ri n- $\emptyset$ -tj- $\bar{o}$  wäy].  
 know the man RC INC-B<sub>3sg</sub>-eat-AF tortilla  
 ‘I know the man who eats tortillas’

(26) **With a preverbal adverb *nojel mul* “always”**

- a. ✓ Wetaman wech [ri achin ri nojel mul n- $\emptyset$ -u-těj wäy].  
 know the man RC always INC-B<sub>3sg</sub>-A<sub>3sg</sub>-eat tortilla  
 ‘I know the man who always eats tortillas’
- b. \* Wetaman wech [ri achin ri nojel mul n- $\emptyset$ -tj- $\bar{o}$  wäy].  
 know the man RC always INC-B<sub>3sg</sub>-eat-AF tortilla

In (26), the adverb *nojel mul* forces the verb “eat” to be in its non-AF, full agreement form, without affecting the felicity of the subject relative. Continuing to use AF here is ungrammatical. This is a case where a subject of a transitive verb has been successfully  $\bar{A}$ -moved, and yet that verb is not and cannot be in its AF form.

Other pre-verbal adverbs which have this effect include *kanqtzij* “truly/actually,” the Spanish “always” *siempre*, and *anineq* “quickly.”<sup>8</sup> However, the effect is not limited to pre-verbal adverbs. In (27), the post-verbal adverb *yan* “already” is added to a variant of (25) in completive aspect, resulting in a grammatical subject relative without AF morphology.

(27) **With a postverbal adverb *yan* “already”:**

- a. ✓ Wetaman wech [ri achin ri x- $\emptyset$ -u-těj yan wäy].  
 know the man RC COM-B<sub>3sg</sub>-A<sub>3sg</sub>-eat already tortilla  
 ‘I know the man who already ate tortillas’
- b. \* Wetaman wech [ri achin ri x- $\emptyset$ -tj- $\bar{o}$  yan wäy].  
 know the man RC COM-B<sub>3sg</sub>-eat-AF already tortilla

What exactly does these adverbs’ behavior tell us about the process of AF morphology? To answer this question, I will present how these adverbs affect the realization of AF-marking in cases where we suspect some process of morphological spreading occurs, as discussed in the previous section. We first find an adverb which is able to occur both before and after the embedding *ajo*. The adverb *ütz* “well” is one such adverb:

<sup>8</sup>But note that other pre-verbal adverbs translated as “quickly,” *pa animel* and *jonamin*, do not have this effect, and continue to require AF morphology in the configuration in (26). I will leave as an open question the proper classification of adverbs which do and do not block AF morphology, as well as the deeper explanation thereof.

(28) **Baseline: adverb *ütz* “well” before and after *ajo***, reportedly with no change in meaning:

- a. Ri a Juan n- $\emptyset$ -r-ajo ütz n- $\emptyset$ -u-tsb'aj ri karta.  
 Juan INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want well INC-B<sub>3sg</sub>-A<sub>3sg</sub>-write the letter  
 ‘Juan wants to write the letter well.’
- b. Ri a Juan ütz n- $\emptyset$ -r-ajo n- $\emptyset$ -u-tsb'aj ri karta.  
 Juan well INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want INC-B<sub>3sg</sub>-A<sub>3sg</sub>-write the letter  
 ‘Juan wants to write the letter well.’

In the following example, we have created subject clefts out of the examples in (28). What we see is that for each position of *ütz*, there is only one possible pattern of AF-marking available on the verbs. In (29a), where the adverb comes between the verbs, AF is required on the auxiliary above the adverb but is blocked on the verb below the adverb. In (29b), where the adverb comes before *ajo*, AF is unavailable on both verbs. This pattern is summarized in the table in (30).

(29) **The position of *ütz* blocks AF:**

- a. *ütz* between verbs: AF required on *ajo* but disallowed on embedded verb
- i. \* ...nrajo ütz ntsb'aj... \* V *adverb* V
- ii. ✓ Ja ri a Juan n- $\emptyset$ -ajo-**van** ütz n- $\emptyset$ -u-tsb'aj ri karta.  
 FOC Juan INC-B<sub>3sg</sub>-want-**AF** well INC-B<sub>3sg</sub>-A<sub>3sg</sub>-write the letter  
 ‘It’s JUAN who wants to write the letter well.’ ✓ V-**AF** *adverb* V
- iii. \* ...nrajo ütz ntsb'a-n... \* V *adverb* V-**AF**
- iv. \* ...najovan ütz ntsb'a-n... \* V-**AF** *adverb* V-**AF**
- b. *ütz* before *ajo*: AF disallowed on both verb
- i. ✓ Ja ri a Juan ütz n- $\emptyset$ -r-ajo n- $\emptyset$ -u-tsb'aj ri karta.  
 FOC Juan well INC-B<sub>3sg</sub>-A<sub>3sg</sub>-want INC-B<sub>3sg</sub>-A<sub>3sg</sub>-write the letter  
 ‘It’s JUAN who wants to write the letter well.’ ✓ *adverb* V V
- ii. \* ...ütz najo-**van** ntsb'aj... \* *adverb* V-**AF** V
- iii. \* ...ütz nrajo ntsb'a-n... \* *adverb* V V-**AF**
- iv. \* ...ütz najo-**van** ntsb'a-n... \* *adverb* V-**AF** V-**AF**

(30) **The realization of AF on “want write” in an AF environment:**

No adverb (6a):	want- <b>AF</b>	write- <b>AF</b>
Adverb before “write” (29a):	want- <b>AF</b> <i>adverb</i>	write(* <b>AF</b> )
Adverb before “want” (29b):	<i>adverb</i> want(* <b>AF</b> )	write(* <b>AF</b> )

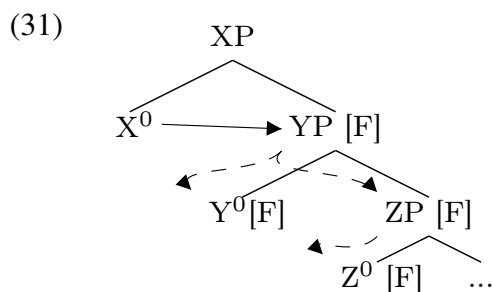
The pattern summarized in table (30) could be thought of as illustrating blocking of a structural, top-down spreading of AF, or a linear, left-to-right spreading, because the adverb utilized here in (29) is a preverbal adverb. However, as illustrated in (27), some postverbal adverbs also seem to exhibit this same blocking behavior.<sup>9</sup> The generalization we see from this data, then, is that AF-marking is available above one of these “blocking” adverbs but not below. This pattern supports the idea that AF-marking spreads top-down, as the blocking effect disallows AF-marking from being realized structurally below the adverb.

<sup>9</sup>On this view, I predict that the postverbal adverb *yan* (27), if interpreted to take scope over the embedded verb in a “want” reduced embedding, we would yield a pattern such as “want-**AF** Verb-(no **AF**) *yan*.” Unfortunately, my speaker

### 3 Proposal

In the previous sections I have given a descriptive characterization of AF morphology in Kaqchikel. When multiple verbs are in the same clausal domain, as happens with reduced clausal embeddings, AF morphology must be on both of the verbs in the domain. Moreover, the behavior of intervening adverbs shows that there is a directionality to this spreading process. This motivates a view where AF morphology *spreads downwards* onto the verbs within its domain.

In this section I will adopt a technical proposal for the assignment and spreading of verbal inflectional features from Bjorkman (to appear a, to appear b), based on Matushansky's (2008) work on Case. Bjorkman proposes a model of verbal morphology where inflectional features can spread within their domains. This operation is illustrated schematically using dashed lines in (31). Here, the head X assigns the feature [F] to its complement. This feature [F] then *spreads* into the daughters of YP. This spreading is in principle unbounded, though phase heads and other designated *blockers* can block this spreading.



Consider how this approach captures the basic English Affix Hopping pattern in (32). This is a case where morphology associated with a particular head appears *within* its complement: here, the suffix *-en* on *been* expresses [PERFECT] together with the auxiliary HAVE and the suffix *-ing* expresses [PROGRESSIVE] together with the auxiliary BE.

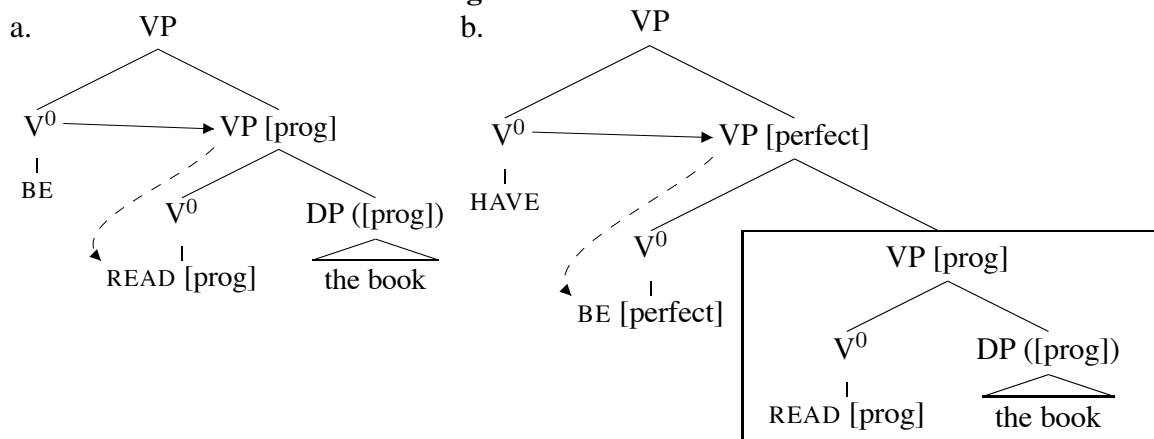
(32) The students will **have been reading** the book.

Bjorkman proposes that each of these inflectional heads is a blocker, allowing feature spreading to the blocking head but not to further daughters. In (32'a), the progressive auxiliary BE is merged with VP and assigns it the [PROGRESSIVE] feature. This feature then spreads onto each of the daughters of the VP, resulting in the progressive form of READ, “reading.” The DP is also assigned the [PROGRESSIVE] feature, but has no spellout rules that are sensitive to it. In (32'b), the perfect auxiliary HAVE merges with the structure in (32'a) and assigns it the [PERFECT] feature. This [PERFECT] feature spreads onto the daughter BE, resulting in its spellout as “been,” but does not spread further because BE is a blocker for inflectional feature spreading. That BE is a blocker is represented by the box on its complement, into which the [PERFECT] feature cannot spread.

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found it difficult to place the adverb *yan* “already” within a reduced embedding under “want,” even for a baseline such as “Juan wanted to (have) already eat(en) tortillas” and therefore I was unable to test this prediction.

(32') The students will **have been reading** the book.



Unlike traditional Affix Hopping, however, this operation of feature spreading is in principle unbounded, and thus able to result in multiple exponents of a single feature. Bjorkman (to appear a, to appear b) argues that such a process is necessary in order to explain the complex restrictions on *go get* constructions in English and other languages, while Matushansky (2008) motivates this model of feature assignment within the domain of Case realization (see also Pesetsky, ms). In the rest of this section I will apply this technology of head-complement agreement with feature spreading to explain the morphological patterns observed in Kaqchikel AF.

I propose that AF morphology is the spellout of an abstract [AF] feature on verbs. I assume that AF constructions involve the projection of an AF head above the TP from which a subject is extracted.<sup>10</sup> This AF head assigns the [AF] feature to its complement. The [AF] feature spreads down onto its daughters and triggers spellout of AF forms. The structure of the Vocabulary Insertion rules will ensure that verbs with this [AF] feature will be realized in their AF form, with the AF suffix and without the Set A agreement slot.<sup>11</sup>

Consider example (6a), repeated below in (33)—an example with AF morphology spreading onto two verbs. I assume for illustration purposes that subject agreement is mediated through T and that the subject is base-generated in Spec,TP.<sup>12</sup> We have seen in section 2.2 that the feature of subject  $\phi$ -agreement, [SUBJ:3SG], must be shared between “want” and the verb in its reduced clausal complement (schema in 16).<sup>13</sup> I will model this pattern of subject agreement via feature spreading: T assigns the [SUBJ:3SG] feature valuation to its complement, which then spreads onto

<sup>10</sup>The source of this [AF] feature is presented here as a separate functional head for ease of exposition. This could alternatively be thought of as a variant of C which exceptionally allows subject movement to its specifier and introduces the [AF] feature. The *syntactic* effect of AF—that is, why extraction of subjects is generally banned in transitive clauses and how an AF derivation can allow this movement—is outside of the scope of this paper and is left for future research.

<sup>11</sup>A systematic exception will be discussed in section 4.2.

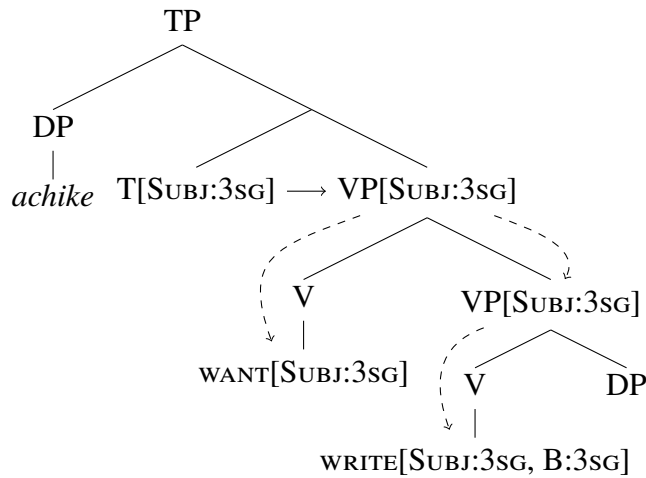
<sup>12</sup>In the derivations here I illustrate the subject position as a left specifier of TP. This position being linearized as a left or right specifier would accurately derive the unmarked SVO and VOS word orders of the language. The theory presented here does not hinge on these assumptions and would be compatible with other approaches to subject generation.

<sup>13</sup>Recall that the agreement markers on the Kaqchikel verb show a pattern of ergative/absolutive alignment, where Set A agrees with subjects of transitive verbs only, and Set B shows agreement with objects of transitive verbs and subjects of intransitives. However, the underlying features which feed this morphology are modelled here in terms of SUBJ and OBJ features, which then get realized differently depending on the transitivity of the verb. Evidence for this approach comes from intransitive reduced clausal complements: in examples such as (15), the subject is the target of Set A (ergative) agreement on the embedding verb “want,” but is also the target of Set B (absolutive) agreement of the

both verbs in the domain. (34) shows the derivation after T and the subject have merged. (How these  $\varphi$ -agreement features are then morphologically realized on an AF verb will be discussed in section 4.2.)

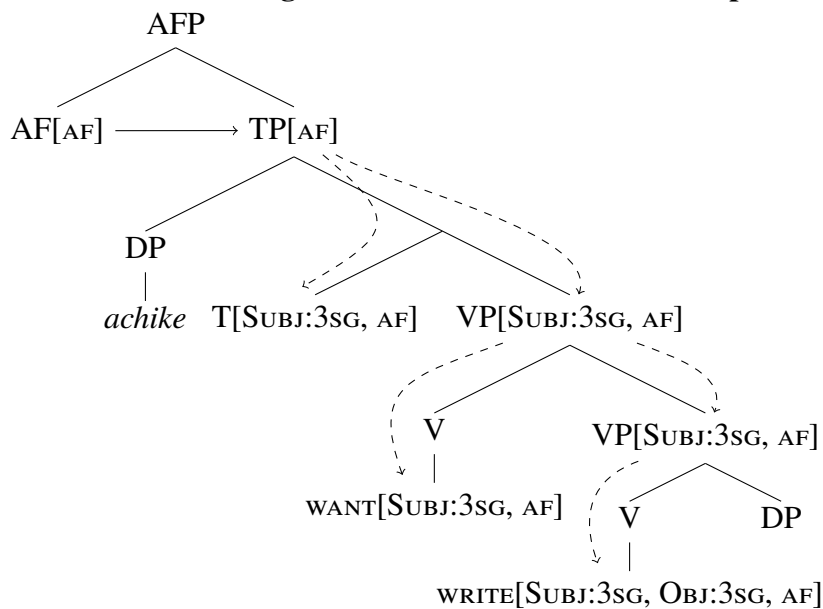
- (33) Achike n- $\emptyset$ -ajo-**van** n- $\emptyset$ -tsb'a-**n** ri karta?  
 who INC-B<sub>3sg</sub>-want-**AF** INC-B<sub>3sg</sub>-write-**AF** the letter  
 ‘Who wants to write the letter?’ (=6a)

(34) **Derivation after merger of TP and [SUBJ:3SG] feature spreading:**



In the next step of the derivation, we introduce the source of AF morphology (35). I assume that the  $\bar{A}$ -movement of subjects, such as the subject *wh*-extraction in (33), requires the insertion of a dedicated AF head. This AF head is itself phonologically empty, but assigns the [AF] feature to its complement. This feature then spreads recursively within the VP.

(35) **Derivation after merger of AF head and [AF] feature spreading:**

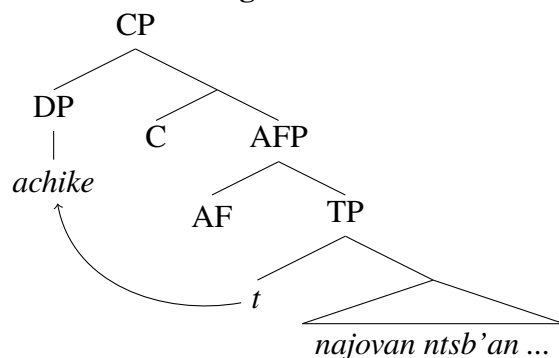



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embedded verb (schema in 16b). Thus, an alternative where ergative and absolutive  $\varphi$ -agreement features are spread cannot be maintained.

Finally, the complementizer is merged and the subject DP moves to Spec,CP. At spellout, Vocabulary Insertion realizes the verbs with the [AF] feature as AF-form verbs: i.e., with the AF suffix, whose form varies with the stem, and without a Set A agreement slot. How the realization of the Set B agreement slot is resolved in AF will be discussed in detail in section 4.2.

(36) **Final structure after merger of C and *wh*-movement:**



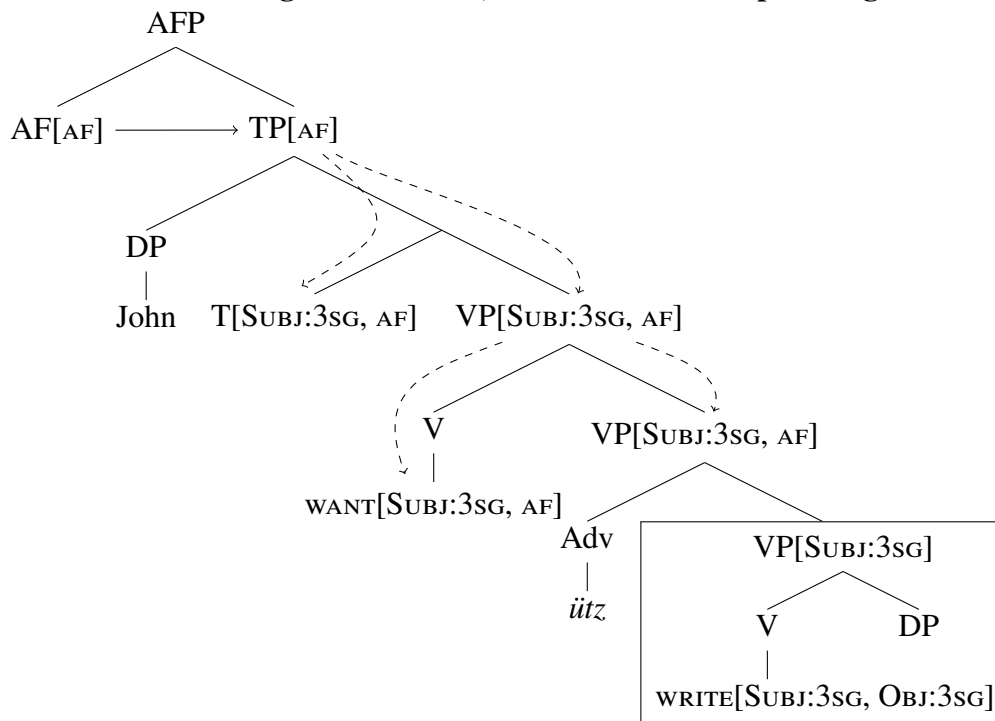
As we saw in section 2.4, certain adverbs block AF morphology from occurring within their scope. Under the analysis proposed here, such adverbs will be designated as *blockers* for the spreading of the [AF] feature. One such example was the adverb *ütz* “well.” Consider (29a), repeated here as (37). This example is similar to (33), except that the adverb *ütz* intervenes between the verb “want” and “write.” The result is that only the higher verb, “want,” is realized in its AF form.

- (37) Ja ri a Juan n- $\emptyset$ -ajo-**van** üt<sub>z</sub> n- $\emptyset$ -u-tsb’aj ri karta.  
 FOC Juan INC-B<sub>3sg</sub>-want-**AF** well INC-B<sub>3sg</sub>-A<sub>3sg</sub>-write the letter  
 ‘It’s JUAN who wants to write the letter well.’ (=29a)

After the AF head merges with the TP, the [AF] feature is assigned to TP and its spreading begins (38). Unlike in (35), where the [AF] feature spreads onto both of the verbs, the intervening *ütz* will block the spreading of the [AF] feature into its sister (boxed).



(38) Derivation after merger of AF head, with [AF] features spreading blocked by *ütz*:



It is important to note that other features which spread across both verbs in these constructions continue to spread across these intervening adverbs. I propose that these blockers such as the adverb *ütz* be relativized to the spreading of the feature [AF], rather than block all feature spreading into their sisters. The spreading of subject agreement features—here, [SUBJ:3SG]—would be one such process which is not blocked by the presence of the AF-blocker. Similarly, the aspect valuation must match between both verbs, so [ASPECT:INCOMPLETE] (not shown above) would also spread onto both verbs.

Finally, we explain why this spreading of AF morphology does not occur with full CP embeddings under *ajo*, as observed in example (22), repeated below. Matushansky (2008) proposes that phase heads are inherently blockers. Assuming that CP boundaries are necessarily phasal, we predict that AF morphology would never spread across a full CP boundary:

(22) AF does not spread into full CP embeddings:

- a. Achike n- $\emptyset$ -ajo-**van** [chin n- $\emptyset$ -u-tsb'aj ri karta]?  
 who INC-B<sub>3sg</sub>-want-**AF** that INC-B<sub>3sg</sub>-A<sub>3sg</sub>-write the letter  
 'Who<sub>i</sub> wants him/her<sub>j</sub> to write the letter?'
- b. \* Achike n- $\emptyset$ -ajo-**van** [chin n- $\emptyset$ -tsb'a-n ri karta]?  
 who INC-B<sub>3sg</sub>-want-**AF** that INC-B<sub>3sg</sub>-write-**AF** the letter

We have seen that the distribution of AF in Kaqchikel does not have a one-to-one correspondence with the trigger of AF, i.e. the  $\bar{A}$ -extraction of transitive subjects. In this section I have argued that the complex patterns of Kaqchikel AF are the result of three separate processes. First, the *syntax* of AF assigns the [AF] feature in AF-triggering environments. Second, the

*spreading and blocking* of this [AF] feature occurs in the syntax.<sup>14</sup> Third, the *morphological realization* of terminal nodes is determined to reflect their featural makeup through the process of Vocabulary Insertion. The proposal made here is able to explain not only the standard cases of AF, where one extracted subject does indeed correspond to one AF-marked verb, but also the complex patterns observed with reduced clausal embeddings and with intervening adverbs.

## 4 Extensions

In this section, I will briefly discuss two details of AF in Kaqchikel. First is the issue of AF applying only to transitive and not intransitive verbs. Second is the question of  $\varnothing$ -agreement realization on AF verbs. In both cases, we will use our understanding of AF in reduced clausal embedding constructions as a diagnostic tool. Furthermore, in both cases we will see that recent Case-based approaches to AF (Coon et al., 2011, Assmann et al., 2012) cannot be extended to Kaqchikel.

### 4.1 AF without a direct object

As was mentioned in section 2.1, AF only occurs on transitive verbs. Intransitive verbs do not show the AF alternation.

(39) **No AF with intransitive verbs:**

- a. Ri a Juan x- $\emptyset$ -wär.  
Juan COM-B<sub>3sg</sub>-sleep  
'Juan slept.'
- b. Achike x- $\emptyset$ -wär?  
who COM-B<sub>3sg</sub>-sleep  
'Who slept?'
- c. \* Achike x- $\emptyset$ -war-ö?  
who COM-B<sub>3sg</sub>-sleep-AF

Why do intransitive verbs not show AF? We could entertain a few different hypotheses. Is it because the subject argument is introduced differently? Is it because the intransitive verb's morphology is not compatible with AF? Is it because there is no direct object? In Kaqchikel we are able to distinguish between these options and, in particular, eliminate the last option. That is, *the presence or absence of Kaqchikel AF does not correspond to the existence of a direct object*.

This is an important observation due to the fact that two recent approaches to Mayan AF, Coon et al. (2011) and Assmann et al. (2012), explicitly tie the appearance of AF to a need to Case-license a direct object DP. That is, these approaches predict that AF occurs when (a) the subject has been  $\bar{A}$ -extracted *and* (b) there is a direct object.<sup>15</sup> As we will see, these approaches make incorrect predictions for the distribution of Kaqchikel AF.

<sup>14</sup>I proposed here that AF-blocking adverbs are relativized to block only the [AF] feature. This very AF-specific effect of this class of adverbs is admittedly stipulative, as is the effect of the [AF] feature on the resulting verbal morphology. However, the technologies of feature spreading and blocking have been argued for previously on independent grounds. Furthermore, to my knowledge no other account of AF—and certainly none of those which attempt to directly derive the morphological realization of AF from the syntax of extraction or to the Case-assignment of nominals—can account for the types of data which motivates the spreading view here.

<sup>15</sup>Briefly, Coon et al. (2011) and Assmann et al. (2012) assume that Case-licensing in AF languages follows an ergative-absolutive pattern, and argue that the object cannot receive absolutive case when the ergative argument is

Consider first the case of an AF clause with “want” taking a reduced clausal complement. We have seen that AF morphology spreads down onto both “want” and its embedded transitive verb. Now consider an example in which “want” embeds an intransitive verb, such as *b’e* “go” below. Here, the verb “want” is in AF, but the embedded verb “go” is not.

(40) **AF spreading with “want” does not spread onto intransitive verbs:**

Achike n- $\emptyset$ -ajo-**van**      n- $\emptyset$ -b’e      Japon?  
 who    INC-B<sub>3sg</sub>-want-**AF** INC-B<sub>3sg</sub>-go Japan  
 ‘Who wants to go to Japan?’

Example (40) tells us two things about AF in Kaqchikel. First, AF does not require the existence of a direct object in the clause, as attested by the AF marking on the verb “want” in (40).<sup>16</sup> Second, intransitive verbs do not show AF morphology even in an environment where we independently know that AF is being triggered.

Under the proposal I have presented here in section 3, we can think of the derivation of (40) as involving the spreading of the [AF] feature onto both “want” and “go,” but only the transitive “want” has a corresponding Vocabulary Insertion rule which can realize the [AF] feature. That is, intransitive verbs may never realize the [AF] feature, even in a structure as in (40) where it must have received the [AF] feature.

The same point—that the realization of AF morphology is not dictated by the presence or absence of a direct object in the clause—can also be seen through CP-embedding verbs, such as *b’ij* “say” in example (41). In the examples in (41), *b’ij*’s complement is the embedded CP, and there is no DP direct object argument. However, when the subject of *b’ij* is extracted, the verb is required to use its AF form.

(41) **Verbs without DP direct objects also show AF:**

- a. Ri xta Maria x- $\emptyset$ -u-b’ij      [chin ri a Juan yawa].  
 Maria      COM-B<sub>3sg</sub>-A<sub>3sg</sub>-say that Juan      sick  
 ‘Maria said that Juan is sick.’
- b. Achike x- $\emptyset$ -b’i-**n**      [chin ri a Juan yawa]?  
 who    COM-B<sub>3sg</sub>-say-**AF** that Juan      sick  
 ‘Who said that Juan is sick?’
- c. \* Achike x- $\emptyset$ -u-b’ij      [chin ri a Juan yawa]?  
 who    COM-B<sub>3sg</sub>-A<sub>3sg</sub>-say that Juan      sick

From the data we have seen here, we can see that the presence or absence of a direct object is *not* what distinguishes transitive and intransitive verbs in their AF-ability. As such, these facts call into question the recent Case-based approaches to AF (Coon et al., 2011, Assmann

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extracted and that in these situations an AF head steps in as a last-resort absolutive case assigner. This AF head is then realized directly as the AF suffix. The resulting difference in Case-licensing pattern also affects the realization of agreement on the verb, explaining the lack of a Set A (ergative) agreement slot in AF verbs.

The two proposals, however, are markedly different in spirit and in many key details. For reasons of space I will not attempt to summarize these proposals here with the depth of discussion that they deserve.

<sup>16</sup>The locative expression *Japon* “Japan” in example (40) is arguably a locative adjunct rather than a direct object. This is reflected in the fact that the verb *b’e* “go” is morphologically intransitive and never agrees with locative goals as a core argument.

et al., 2012), which directly tie AF morphology to the existence of a direct object which requires Case-licensing. Ultimately, the fact that transitive verbs show AF but intransitives do not must come from differences in how the arguments of these predicates are introduced or from the morphological properties of these verbs. I will leave more detailed investigation of this issue for future work.

## 4.2 Agreement under AF

In a standard Kaqchikel transitive verb, there are separate morphemes which reflect agreement with the verb's subject and object. These agreement slots are referred to as Set A and Set B, respectively (42). However, in the AF form, transitive verbs lose their Set A agreement slot and instead only have a Set B agreement slot (43). In this section I will discuss the pattern of agreement reflected in this Set B agreement slot in AF verb forms, and its consequences for the theory of AF.

(42) **Agreement on full agreement transitive:**

subject ASPECT-B-A- $V_{trans}$  object

(43) **Morphology of the Agent Focus transitive verb:**

ASPECT-B- $V_{trans}$ -AF

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 (44). In (44a), 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 (44b), 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 (45) below.

(44) **Examples of Set B agreement in AF:**

(Preminger, 2011:exx 21–22)

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

(45) **Agreement patterns in (44):**

a. subject<sub>2sg</sub> ASPECT-B<sub>2sg</sub>- $V_{trans}$ -AF object<sub>3sg</sub> (=44a)

b. subject<sub>3sg</sub> ASPECT-B<sub>2sg</sub>- $V_{trans}$ -AF object<sub>2sg</sub> (=44b)

Previous researchers have described this pattern of agreement as obeying the salience hierarchy in (46). That is, the Set B agreement on an AF verb will look at both its subject and its object and choose the  $\phi$ -features of the argument which is higher on the hierarchy (46). This explains the pattern observed in (44): 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 this variety of Kaqchikel (Preminger, 2011), as well as in the related Mayan languages of Tz’utujil, Sakapultek, Sipakapense, and K’iche’ (Stiebels 2006, and references therein).<sup>17</sup>

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

Given this descriptive hierarchy, 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.** This is demonstrated by the subject cleft in (47). 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 Set B agreement marker chosen. Instead, the full agreement transitive form of the verb must be used.

- (47) **Ā-extraction with first- and second-person arguments grammatical without AF:**

- a. ✓ Ja yin x-at-in-tzët rat.  
 FOC me COM-B<sub>2sg</sub>-A<sub>1sg</sub>-see you  
 ‘It was ME that saw you’
- b. \*Ja yin x-i-tzet-ö rat.  
 FOC me COM-B<sub>1sg</sub>-see-AF you
- c. \*Ja yin x-a-tzet-ö rat.  
 FOC me COM-B<sub>2sg</sub>-see-AF you

We could imagine two different characterizations for this effect of first- and second-person arguments. One option would be to say that when both arguments of a transitive verb are first- or second-person, the process of AF does not happen. Another option would be to say that, (47a) is indeed an AF clause, but that the agreement processes in the clause and the resulting morphological realization have obscured this fact. Here again data from reduced clausal embeddings under *ajo* “want” can contribute to our understanding of this phenomenon.

Example (48) is a baseline which shows the pattern of agreement with *ajo* “want” taking a transitive reduced clausal complement, with a first-person subject and a second-person object. The embedding verb “want” exhibits Set A agreement with the subject and third-singular (default) Set B agreement, while the embedded verb “see” shows Set A agreement with the subject and Set B agreement with the object. This pattern is consistent with the pattern of agreement we documented earlier, schematized in (16a), repeated below.

- (48) **Baseline: reduced clausal embedding with first- and second-person arguments:**

Rat n-∅-aw-ajo y-in-a-tz’ët yin.  
 You INC-B<sub>3sg</sub>-A<sub>2sg</sub>-want INC-B<sub>1sg</sub>-A<sub>2sg</sub>-see me

‘You want to see me.’

- (16a) **Agreement pattern with transitive reduced clausal embedding:**

subject ASPECT-B<sub>3sg</sub>-A-want ASPECT-B-A-V<sub>trans</sub> object

<sup>17</sup>See Preminger (2011) for a detailed presentation of these facts in the variety of Kaqchikel described in this paper.

Now we will consider a subject cleft variant of (48), which we expect to form an AF triggering environment. The question is whether AF morphology will appear here and, if so, where it will appear.

Again, we can imagine two contrasting characterizations of the effect of first- and second-person arguments blocking the realization of AF, as in example (47), and then think through what predictions these views make. First, consider the view that the entire AF process does not occur in clauses where both the subject and object are first- or second-person. Under this view, we would predict that AF will not occur at all in a subject cleft variant of (48).

Second, consider the hypothesis that the syntactic process of AF occurs indiscriminantly, but the agreement with both first- and second-person arguments then obscures the morphological realization of AF on the verb. More specifically, under this view, we predict that in an AF environment AF will appear on those verbs which agree with only zero or one participant (first- or second-person) arguments. We know from our baseline (48) that the verb “want” in a non-AF environment agrees with only one participant argument, and thus we predict that it will exhibit AF. However, the embedded verb “see” agrees with two participant arguments in (48), and therefore will not be in AF form.

The data below shows that the latter approach is correct:

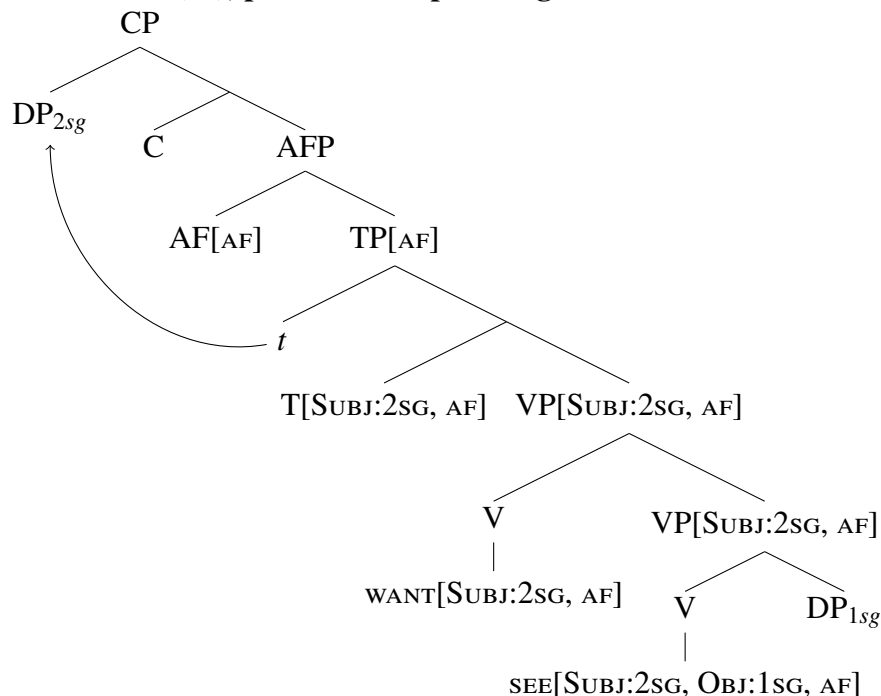
(49) **AF on *ajo* but not on embedded verb, due to agreement with first- and second-person arguments:**

- a. ✓ Ja rat y-at-**ajo-van** y-in-a-tz'ët yïn.  
 FOC you INC-B<sub>2sg</sub>-want-**AF** INC-B<sub>1sg</sub>-A<sub>2sg</sub>-see me  
 ‘It’s YOU that wants to see me.’
- b. \* Ja rat y-at-**ajo-van** y-in-tz'et-ö yïn.  
 FOC you INC-B<sub>2sg</sub>-want-**AF** INC-B<sub>1sg</sub>-see-**AF** me
- c. \* Ja rat y-at-**ajo-van** y-a-tz'et-ö yïn.  
 FOC you INC-B<sub>2sg</sub>-want-**AF** INC-B<sub>2sg</sub>-see-**AF** me

The data in (49) shows us that the process of AF *does* continue to occur in this clause, even though both arguments in the clause are first- or second-person. The verb “want,” which in (48) only agreed with one participant argument, is in its AF form in (49), with agreement with the second-singular subject. On the other hand, the realization of AF morphology is blocked on the embedded verb “see,” which we know from (48) agrees with two participant arguments in non-AF environments. In (49), “see” shows the same, full agreement verb form as in the non-AF environment (48). AF forms of “see,” regardless of the Set B agreement target chosen, are ungrammatical.

This data can be neatly captured within the view of AF morphosyntax I have advocated for here, where the syntax of AF and its morphological realization are dissociated. In section 3, I proposed that the processes of  $\varnothing$ -agreement underlyingly occur in AF clauses just like in non-AF clauses. This results in the SUBJ agreement feature spreading onto both verbal nodes and the OBJ agreement feature being on only the embedded verb. The [AF] feature spreads onto both verbs, resulting in the verb “want” carrying the feature specification [SUBJ:2SG, AF], with no OBJ feature valuation, and the verb “see” with the features [SUBJ:2SG, OBJ:1SG, AF].

(50) Structure of (49), post-feature-spreading



The question, now, is what morphological realizations are available for these two terminals. Given the descriptive  $\varphi$ -feature hierarchy which governs the agreement observed on AF verbs (46), the SUBJ and OBJ together determine the realization of Set B morphology.<sup>18</sup> In particular, if either argument is first- or second-person, its  $\varphi$ -features must be realized through agreement morphology on the verb. In the case of “want,” we can straightforwardly realize the terminal node as *yatajovan* “INC-B<sub>2sg</sub>-want-AF,” which encodes both the [AF] and [SUBJ:2SG] features of the verb.

In the case of “see,” things are more complicated. Below we see the various possible realizations of the verb “see” afforded by the morphology of Kaqchikel and the features that they realize. We see that **no realization of the verb will realize all of its features**. As we have seen before, in this variety of Kaqchikel the solution is to allow the non-realization of the [AF] feature as a last-resort; i.e., the verb “see” is realized using the rule in (51a).

(51) Vocabulary Insertion rules applying to SEE[SUBJ:2SG, OBJ:1SG, AF] in (50):

- a. SEE[SUBJ:2SG, OBJ:1SG] → *yinatʒ'ët* “INC-B<sub>1sg</sub>-A<sub>2sg</sub>-see” [AF] unrealized
- b. SEE[SUBJ/OBJ:2SG, AF] → *yatz'etö* “INC-B<sub>2sg</sub>-see-AF” [OBJ:1SG] unrealized
- c. SEE[SUBJ/OBJ:1SG, AF] → *yintz'etö* “INC-B<sub>1sg</sub>-see-AF” [SUBJ:2SG] unrealized
- d. ...less specific rules...

Furthermore, the interaction observed in (49) is not predicted under the recent Case-based approaches of Coon et al. (2011), Assmann et al. (2012). In particular, these approaches cannot derive (49a), where the embedding verb “want” is in its AF form. Under these approaches, AF morphology is a last-resort Case assigner for direct objects when the subject has been  $\bar{A}$ -extracted. Assume further that first- and second-person arguments in Kaqchikel have a requirement such that

<sup>18</sup>A complete table documenting the various combinations of subject and object  $\varphi$ -features and the resulting Set B resolution on AF verbs can be found in Preminger (2011:ex. 65).

they must be  $\varphi$ -agreed with (Preminger, 2011). In example (49), for whatever reason the embedded verb is not in its AF form and it therefore has agreed with both the subject and object arguments. This means that both DPs have been Case-licensed, because both of these theories assume that agreement morphology on the verb transparently reflects the pattern of nominal Case-licensing. As a result, we know that the direct object has already been Case-licensed, and therefore predict that the last-resort AF Case-licensing is unnecessary and will be ungrammatical. Therefore the attested pattern in (49) is unexpected under these Case-based approaches.

In contrast, the approach advocated for here is able to derive the pattern observed, crucially because the underlying syntactic processes, including the assignment and spreading of [AF] features and the processes of  $\varphi$ -agreement, occur in all clauses and then feed, but not predetermine, the final morphological realization. At individual nodes, the morphology will determine the optimal output based on the feature structure given to it by the syntax. Here again we see the advantage of dissociating the syntax and morphological realization of AF.

## 5 Conclusion

In this paper I discussed the patterns which govern the realization of AF morphology in Kaqchikel. While  $\bar{A}$ -movement of the subject of a transitive verb is a necessary condition for all cases of AF morphology, we have seen that the conditions which govern AF realization are much more complex. Theories which predict a one-to-one correspondence between  $\bar{A}$ -extraction of a subject and AF-marking on a verb cannot be correct for Kaqchikel.

In section 2.3 I showed that AF morphology *spreads* onto verbs in reduced clausal complements of the verb *ajo* “want.” I considered some standard options for the type of reduced clausal embedding involved and showed that a simple one-to-one correspondence between  $\bar{A}$ -movement of a subject and AF-marking cannot be maintained for this data. In this case, AF-marking on the embedded verb must be the result of syntactic choices above, motivating downward spreading approach to AF morphology.

In section 2.4 I presented data with adverbs which block the realization of AF morphology in an AF environment. That is,  $\bar{A}$ -extraction of the subject can occur without corresponding AF-marking, showing again that the morphological realization of AF is independent of the syntax of AF. Furthermore, the direction of blocking—AF morphology disappears *below* the intervening adverb—supports the idea that AF morphology spreads downwards.

I presented a technical proposal for this downward spreading in section 3. AF morphology on verbs is the reflex of an abstract [AF] feature assigned above which then spreads within the clause. This feature spreading can be thought of as an extension of Affix Hopping and has recently been independently motivated for verbal morphology by Bjorkman (to appear a, to appear b) and more generally in the work of Matushansky (2008), Pesetsky (ms). In future work, there is a need for a better characterization of the set of adverbs which constitute blockers of [AF].

Finally, in section 4 I extended this proposal to the analysis of the lack of AF on intransitive verbs and the pattern of agreement observed on AF verbs. Throughout, I argued that the recent Case-based approaches to AF (Coon et al., 2011, Assmann et al., 2012) cannot be adopted for Kaqchikel.



## References

- Aissen, Judith. 1999. Agent focus and inverse in Tzotzil. *Language* 75:451–485.
- Aissen, Judith. 2011. On the syntax of agent focus in K'ichee'. In *Proceedings of Formal Approaches to Mayan Linguistics (FAMLi)*, ed. Kirill Shklovsky, Pedro Mateo Pedro, and Jessica Coon.
- Assmann, Anke, Doreen Georgi, Fabian Heck, Gereon Müller, and Philipp Weisser. 2012. Ergatives move too early: on an instance of opacity in syntax. Submitted.
- Bjorkman, Bronwyn. to appear a. Go get, come see: motion verbs, morphological restrictions, and syncretism. *Natural Language & Linguistic Theory* Manuscript.
- Bjorkman, Bronwyn. to appear b. The syntax of syncretism. In *Proceedings of NELS 40*.
- Coon, Jessica, Pedro Mateo Pedro, and Omer Preminger. 2011. The role of case in A-bar extraction asymmetries. Submitted.
- Matushansky, Ora. 2008. A Case study of predication. In *Studies in formal Slavic linguistics. Contributions from formal description of Slavic languages 6.5*, 213–239. Frankfurt am Main.
- Norcliffe, Elisabeth. 2009. Head-marking in usage and grammar: a study of variation and change in Yucatec Maya. Doctoral Dissertation, Stanford University.
- Pesetsky, David. ms. Russian case morphology and the syntactic categories. URL [lingBuzz/001120](http://lingbuzz/001120), manuscript, Massachusetts Institute of Technology.
- Preminger, Omer. 2011. Agreement as a fallible operation. Doctoral Dissertation, Massachusetts Institute of Technology.
- Stiebels, Barbara. 2006. Agent focus in Mayan languages. *Natural Language & Linguistic Theory* 24:501–570. URL <http://dx.doi.org/10.1007/s11049-005-3820-z>.

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