Mayan Agent Focus and the Ergative Extraction Constraint: Facts and Fictions Revisited[*]

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
Abstract: Many languages of the Mayan family restrict the extraction of transitive (ergative) subjects for focus, wh-questions, and relativization (Ā-extraction). We follow Aissen 2017b in labelling this restriction the ergative extraction constraint (EEC). In this paper, we offer a unified account of the EEC within Mayan languages, as well as an analysis of the special construction known as Agent Focus (AF) used to circumvent it. Specifically, we propose that the EEC has a similar source across the subset of Mayan languages which exhibit it: *locality*. The locality problem is created when an object DP structurally intervenes between the Ā-probe on C⁰ and the ergative subject. Evidence that locality is the source of the problem comes from a handful of exceptional contexts which permit transitive subjects to extract in languages which normally ban this extraction, and conversely, contexts which exceptionally ban ergative extraction in languages which otherwise allow it. We argue that the problem with Ā-extracting the ergative subject across the intervening object connects to the requirements of the Ā-probe on C⁰: the probe on C⁰ is bundled to search simultaneously for [Ā] and [D] features. This connects the Mayan patterns to recent proposals for extraction patterns in Austronesian languages (e.g. Aldridge to appear) and elsewhere (van Urk 2015). Specifically, adapting the proposal of Coon and Keine 2018, we argue that in configurations in which a DP object intervenes between the probe on C⁰ and an Ā-subject, conflicting requirements on movement lead to a derivational crash. While we propose that the EEC has a uniform source across the family, we argue that AF constructions vary Mayan-internally in how they circumvent the EEC, accounting for the variation in behavior of AF across the family. This paper both contributes to our understanding of parametric variation internal to the Mayan family, as well as to the discussion of variation in Ā-extraction asymmetries and syntactic ergativity cross-linguistically.

Keywords: Ā-extraction, extraction restrictions, syntactic ergativity, Agent Focus, Mayan

1 Introduction

In many Mayan languages, the extraction of transitive (ergative) subjects is restricted; we follow Aissen 2017b in labelling this restriction the ERGATIVE EXTRACTION CONSTRAINT, or EEC. This paper offers a unified account of the EEC within the Mayan language family, as well as an analysis of the special construction known as "Agent Focus" (AF), used to circumvent it. Agent Focus has been a longstanding topic in the Mayanist literature (Smith-Stark 1978; Craig 1979; Larsen and Norman 1979; Dayley 1981; Ayres 1983), and more recently has received a good deal of attention in wider morphosyntactic circles (Stiebels 2006; Aissen 2011; Coon et al. 2014; Preminger 2014; Assmann et al. 2015; Erlewine 2016; Aissen 2017b; Watanabe 2017; Henderson and Coon 2018). The continued interest in the EEC and AF is perhaps unsurprising given the connection to topics across a range of morphological and syntactic domains, including morphological and syntactic ergativity, Ā-extraction, hierarchy effects and feature structure, case and agreement (and

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Case and Agree), binding, incorporation, obviation, transitivity and voice morphology—all topics we discuss below. The similarities and differences found in this area across the roughly thirty languages of the Mayan family also make this a fruitful area in which to investigate syntactic microvariation.

Examples which illustrate the restriction on Ā-extracting the ergative subject from a regular transitive clause are previewed for Q'anjob'al and K'iche' in (1).[1]

(1) *Ergative Extraction Constraint*

    a. *Maktxel max y-il   ix ix?
        who   PFV A3S-see CLF woman
        intended: 'Who saw the woman?'   (Q'anjob'al; Coon et al. 2014, 193)

    b. *Are ri ixoq   x-u-b'aq   ri   ch'ajo'n.
        FOC DET woman PFV-A3S-scrub DET clothes
        intended: '*The woman* scrubbed the clothes.'   (K'iche'; Can Pixabaj 2004, 58)

In contrast, object Ā-extraction from transitive verb forms is well-formed.

(2) *Object extraction*

    a. Maktxel max y-il   naq winaq?
        who   PFV A3S-see CLF man
        'Who did the man see?'   (Q'anjob'al; Coon et al. 2014, 192)

    b. Jas x-u-k'ut   ri ixoq?
        what PFV-A3S-teach DET woman
        'What did the woman teach?'   (K'iche'; Can Pixabaj 2004, 29)

The Agent Focus construction, used specifically to Ā-extract transitive subjects—for *wh*-questions, focus, and relativization—is illustrated for the same two languages in (3), and described further below.

(3) *Agent Focus*

    a. Maktxel max-ach il-**on**-i?
        who   PFV-B2S see-AF-ITV
        'Who saw you?'   (Q'anjob'al; Coon et al. 2014, 213)

    b. Are ri sis x-ti'-**ow**   ri kumatz.
        FOC DET coati PFV-bite-AF DET snake
        '*The coati* bit the snake'   (K'iche'; Can Pixabaj 2004, 56)

This paper has three main goals. **First**, we aim to clarify the range of variation concerning the EEC and AF construction in the Mayan family in order to provide a more complete picture of the empirical landscape to be accounted for. While some recent work has tackled differences in AF across a number of Mayan languages (e.g. Stiebels 2006; Watanabe 2017), we show below that the variation is more limited than previously described. The "facts and fictions" in our title pays homage to Smith-Stark's (1978) seminal work on this topic, but now with the benefit of more than four decades of descriptive and theoretical work to add. We connect some of the apparent points of variation to independent properties in the languages in question, delimiting the EEC- and AF-specific factors to be explained.

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[1]We follow Leipzig glossing conventions with the addition of the following abbreviations: A – "Set A" (ergative/possessive); AF – Agent Focus; B – "Set B" (absolutive); DIM – diminutive; DIR – directional; DTV – derived transitive status suffix; ENC – enclitic; EXT – existential; FOC –focus; ITV – intransitive status suffix; OBV – obviative; P – plural; PROX – proximate; RN – relational noun; S – singular; SS – status suffix; TV – transitive status suffix; WH – wh-word. In some cases, we have modified glosses or spelling of language names from original sources for consistency, and we have neutralized clitic/affix distinctions when present in originals. Unattributed examples are from the authors' elicitation notes. Translations from Spanish are our own.

Second, we argue that the EEC has a similar source across the subset of Mayan languages which exhibit it: locality. We provide evidence for the generalization in (4).

(4)   MAYAN EEC GENERALIZATION
      When an interpreted DP object structurally intervenes between the subject and the Ā-probe on C⁰, the subject is restricted from undergoing Ā-extraction.

We propose, in line with other previous work on EEC-effects (and syntactic ergativity more generally), that in Mayan languages which exhibit the EEC, the transitive object raises to a position above the transitive subject, blocking the subject from extracting (e.g. Campana 1992; Ordóñez 1995; Bittner and Hale 1996a; Aldridge 2004, 2008a; Coon et al. 2014; Assmann et al. 2015; see Deal 2016 for a recent overview of these accounts and syntactic ergativity more generally). This configuration is schematized in (5).

(5)   [$_{CP}$ ___ … [$_{vP}$ OBJECT [SUBJECT [$_{VP}$ V ~~OBJECT~~]]]]
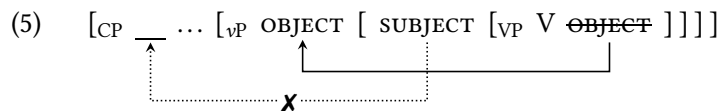
We show that special factors which exceptionally prevent such intervention from occurring have a direct effect on the extractability of the transitive subject.[2]

We argue, following previous work in Mayan, that the problem with extracting transitive (ergative) subjects cannot be reduced to properties of the ergative subject itself (contra Deal 2016; Polinsky 2016). Furthermore, while other previous work on extraction asymmetries has attributed the problem resulting from the inversion in (5) to a failure of abstract case (Case) or nominal licensing, we demonstrate below that this line of analysis cannot capture the patterns found across the Mayan EEC. Instead, we argue that the problem with Ā-extracting the ergative subject across the moved object connects to the requirements of the Ā-probe on C⁰. In section 4, we specifically propose that the probe on C⁰ is a complex probe which probes simultaneously for [Ā] and [D]. This causes the probe to enter into an Agree relationship with *both* the object and the subject in structures like (5). Adapting the proposal of Coon and Keine (2018), we argue that in such a configuration, conflicting requirements on movement force a derivational crash. Our account thus builds on existing work which ties extraction asymmetries to variation in the requirements of the Ā-probe on C⁰, and to a blurred division between traditional A- and Ā-operations and positions more generally, discussed further below.

Finally, we argue that while the EEC has a common source (the configuration in (5)), the Agent Focus construction in (3) is not homogenous across the family. We focus on the two subfamilies which have received the most attention in recent literature: Q'anjob'alan and K'ichean Proper. In the former, we follow the basic outline of the analysis in Coon et al. 2014 in which the Agent Focus (AF) morpheme is a v^0 head which does not cause the object to raise, thus allowing the ergative subject to extract freely. In K'ichean, in contrast, we propose that the object *does* raise (Levin 2018), but lands in a specifier equidistant with the subject to higher probes on Infl⁰ and C⁰. We propose in section 5 that these two different AF strategies account for independent differences in these constructions in Q'anjob'alan and K'ichean.

The remainder of this paper is organized as follows. In section 2 we provide a survey of the EEC and the Agent Focus construction in a representative sample of Mayan languages, and we summarize the desiderata that a successful analysis of these facts must cover. In section 3 we offer evidence for our proposal that locality is at issue in deriving the EEC, as stated in the generalization in (4) above. Section 4 provides a unified account of the extraction problem, which does not rely on failures of nominal licensing. In section 5 we offer an analysis of AF which accounts for both the similarities and differences found in AF

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[2]On the flipside, we suggest in appendix A that factors which exceptionally cause objects to raise may cause intervention effects in a language which otherwise does *not* exhibit the EEC.

constructions. Section 6 concludes with a summary and discussion of connections to extraction restrictions outside of the Mayan family.

2   Agent extraction and Agent Focus: Description and desiderata

This section lays out the EEC and Agent Focus facts to be accounted for. As noted at the outset, there is variation across the Mayan family in details of what have been called Agent Focus constructions, as well as in the nature of the EEC. Here we offer a proposal for how to delimit the scope of investigation, and also attribute some of the apparent variation to independent differences among the languages in question. The core properties of the Agent Focus construction which we aim to account for are exemplified by the Chuj (Q'anjob'alan) example in (6b), contrasted with the regular transitive in (6a).

(6) a. Ix-in-y-il   ix ix.
         PFV-B1s-A3s-see CLF woman
         'The woman saw me.'   (Chuj transitive)
     b. Ha ix ix   ix-in-il-an-i.
         FOC CLF woman PFV-B1s-see-AF-ITV
         '*The woman* saw me.'   (Chuj Agent Focus)

The Agent Focus construction in Chuj has the characteristics listed in (7), also shared by the AF constructions in Q'anjob'al and K'iche' in (3) above. First, AF is used only when the transitive subject appears in the left periphery, as in the focus construction in (6b).[3] The example in (6b) further illustrates that neither of the arguments of the AF verb is oblique. Zooming in on the verb stem itself we find: (i) the absence of the Set A (ergative) prefix (*y-* in (6a)); (ii) a special AF suffix *-an*; and (iii) an *intransitive* status suffix *-i.* We take these to be the core characteristics to be accounted for in a successful analysis of AF.

(7) *Characteristics of Mayan Agent Focus*
     a. AF is used when the transitive subject is Ā-extracted;
     b. AF constructions involve dyadic predicates in which neither subject nor object DP is oblique;
     c. Set A (ergative) φ-marking is absent;
     d. a special Agent Focus suffix appears on the stem;
     e. if a status suffix appears, it is an intransitive status suffix.

This combination of properties has been noted to give AF constructions across the family an apparently "mixed" status with respect to transitivity. They appear to be *transitive* insofar as we find two non-oblique DP arguments. Nonetheless, the verb appears with only a single Set B morpheme, and when a status suffix appears, it is an *intransitive* status suffix.[4]

Note that (7b) rules out antipassive constructions, as well as other constructions characterized by an oblique object sometimes described under the umbrella of Agent Focus, discussed in section 2.3 below. The characteristic in (7d) also rules out a construction which has been labelled as AF in Yucatec Maya (which also patterns differently from more canonical AF in both form and distribution); we follow Norcliffe (2009) who treats this as a distinct phenomenon, and do not discuss Yucatec further here.[5]

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[3]While AF only appears with transitive subjects in the left periphery, not all left-periphery subjects trigger AF. Specifically, certain topicalized subjects may appear in the left periphery without the use of AF. Following previous work (Aissen 1992; Bielig 2015), we take these to be base-generated high topics, also discussed in §3.1 below.

[4]Some languages, like Kaqchikel, have lost status suffixes entirely. In other languages, like Chuj and K'iche', status suffixes surface only in phrase-final position (see e.g. Henderson 2012).

[5]There are two ways that "Agent Focus" has been used in previous literature: (i) a particular construction used exclusively to Ā-extract transitive subjects, with a defined set of characteristics, as in (7); or (ii) *any* construction used for focusing agents. The

We begin in section 2.1 with brief background on the Mayan language family and grammatical characteristics relevant to the discussion below, and then turn to our theoretical assumptions about Mayan clause structure in section 2.2. In section 2.3 we examine the EEC and AF in more detail, focusing on two apparent areas of variation: (i) *which* DP (the subject or the object) governs the Set B φ-marking on the AF verb stem, and (ii) apparent variation in the relevance of person features of the subject DP to whether or not AF is needed for ergative extraction.

2.1   Mayan background

The Mayan language family is comprised of about thirty languages spoken in southern Mexico, Guatemala, Belize, and Honduras by more than six million people (Bennett et al. 2016; Aissen et al. 2017). The family is typically divided into six major subgroups: Yucatecan, Greater Tseltalan, K'ichean, Greater Q'anjob'alan, Mamean, and Huastecan (Campbell and Kaufman 1985; England and Zavala 2013; Campbell 2017).[6] The Huastecan branch is the most divergent, having been the first to branch off, and is not discussed further here. The five remaining subfamilies are shown in (8) (further subdivisions are separated by semi-colons). We have underlined four languages that will play a main role in the analysis below.

(8)   a.   **Yucatecan**: Yuctec Maya, Lacandon; Itzaj, Mopan
       b.   **Greater Tseltalan**: Ch'ol, Yokot'an, Ch'orti; Tsotsil, Tseltal
       c.   **K'ichean**: Q'eqchi'; Uspantek; Poqom, Poqomchi'; <u>K'iche'</u>, <u>Kaqchikel</u>, Tz'utujil, Sakapultek, Sipakapense
       d.   **Greater Q'anjob'alan**: <u>Q'anjob'al</u>, Akatek, Popti', Mocho'; <u>Chuj</u>, Tojol-ab'al
       e.   **Mamean**: Mam, Tektitek; Awakatek, Ixil

Despite variation across the family, a number of core characteristics are found across Mayan languages. First, Mayan languages are generally verb initial in discourse-neutral contexts, with arguments appearing in preverbal positions for topic, focus, wh-questions, and relativization (England 1991; Aissen 1992; Clemens and Coon 2018). Core arguments may generally be *pro*-dropped, and are cross-referenced on the verb stem by two series of morphemes: "Set A" (ergative, possessive) and "Set B" (absolutive). Set A morphemes are prefixal, while the location of Set B morphemes varies. A general template for the verbal complex of a full transitive verbal clause is shown in (9).

(9)   TAM – { SET B } – SET A – [Root – (Voice) – (Status suffix)] – { SET B }

The stem core (in square brackets in (9)) consists of a root, possibly one or more valence or argument structure-related suffixes (including the AF suffix, discussed below), and in some languages, a final "status suffix", which may vary according to TAM, transitivity, and clause type (-ITV, -TV, and -DTV below). In some languages, status suffixes only surface phrase-finally (Henderson 2012). Set A prefixes precede the verb stem, and a TAM marker appears initially. As shown in (9) and noted above, Set B morphemes appear either following the TAM marker, or stem-finally, discussed further below. Third person singular Set B lacks an overt reflex across the family, and we do not represent a null morpheme below.

Examples of transitive stems in three different languages are shown in (10). The core stem, in brackets in (9), is underlined.

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antipassive and Yucatec forms fall into the latter group, and we set them aside here, delimiting our investigation to the forms that share the characteristics in (7). See Norcliffe 2009 and discussion in Coon et al. 2014 for more on the Yucatec case, and section 2.3 below on the decision to eliminate constructions with oblique objects from the scope of our investigation.

[6]See also Bennett et al. 2016 and Campbell 2017 for discussion and alternate spellings of language names, and discussion of potential language versus dialect divisions.

(10)   a.   Tyi i-k'el-e-y-ety.
            PFV A3-watch-TV-EP-B2

            'He watched you.'   (Ch'ol; Vázquez Álvarez 2011, 177)

      b.   X-in-ki-ch'ab'ee-j.
            PFV-B1S-A3P-speak-DTV

            'They spoke to me.'   (K'iche'; Can Pixabaj 2004, 27)

      c.   Max-ach hin-kol-o'.
            PFV-B2S   A1s-help-TV

            'I helped you.'   (Q'anjob'al; Mateo Toledo 2017, 538)

Many languages exhibit split ergativity in certain non-perfective aspects, as well as in non-finite embedded clauses. In these splits, the intransitive subjects are marked with the same Set A (ergative/possessive) series normally reserved for transitive subjects (Larsen and Norman 1979; Coon 2013), as shown by the Ch'ol progressive in (11) (compare the identically-marked transitive subject in (10a) above). Importantly for the discussion below, intransitive subjects are never restricted from extracting, even when they are marked by the same Set A morphology as transitive subjects. The EEC is restricted to *transitive* subjects, and is not directly connected to Set A morphology.

(11)   Choñkol **i**-wäy-el.
      PROG   A3-sleep-NML

      'She is sleeping.'

See also England and Zavala 2013; Bennett et al. 2016, and works in Aissen et al. 2017 for recent overviews of Mayan grammar.

2.2   Theoretical assumptions

Following Clemens and Coon 2018, we take the verb stem to be formed by head movement of the root up through functional projections related to the verb's argument structure. Minimally, for a transitive stem this includes a bundled v^0/Voice^0 head (Harley 2017) which introduces the transitive subject in its specifier position (and may or may not be realized by overt valence morphology). We represent this head here as v^0. The stem lands above the subject in a head which hosts the stem-final status suffix ('ssP') and sits above the transitive subject, resulting in basic verb-initial order as shown in (12).

(12)   *Mayan verb stem formation* (Clemens and Coon 2018)
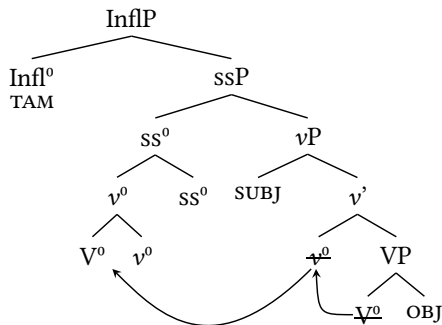
With respect to the Set A and Set B person markers, we follow Coon 2017 in taking Set A (prefixal ergative agreement) to arise from v^0 directly in the Spec-Head configuration with the external argument. Recall from (9) that the location of Set B (absolutive) morphology varies both across the family, and in some cases

even within individual languages. Mayan languages can be divided into two basic types with respect to the location of Set B, labelled "ʟᴏᴡ-ᴀʙꜱ" and "ʜɪɢʜ-ᴀʙꜱ". This variation in Set B is relevant because of the generalization, noted by Tada 1993 and discussed further in Coon, Mateo Pedro, and Preminger 2014, that ʜɪɢʜ-ᴀʙꜱ languages generally restrict the extraction of ergative arguments (i.e. generally exhibit the EEC, and require AF for transitive subject extraction), while ʟᴏᴡ-ᴀʙꜱ languages generally do not (i.e. generally do not exhibit the EEC, and do not possess AF forms).

Ch'ol and Tseltal are examples of ʟᴏᴡ-ᴀʙꜱ languages. Following Coon et al., we assume that in ʟᴏᴡ-ᴀʙꜱ languages, Set B markers in transitive clauses are generated via an Agree relationship established by the transitive v^0 head, akin to accusative in nominative-accusative languages. Set B markers in intransitive clauses are generated by finite Infl^0 (i.e. an ABS=DEF system in the terminology of Legate (2008)). Evidence for this proposal comes from the fact that Set B morphemes are available in nonfinite (TAM-less) embedded transitives, as shown in (13) for ʟᴏᴡ-ᴀʙꜱ Ch'ol. This is compatible with the proposal that Set B morphemes have a low source and thus remain present in nonfinite embeddings.[7]

(13) K-om   [j-käñ-**ety**   ].
      ᴀ1-want   ᴀ1-know-ʙ2
      'I want to speak to you.'   (Ch'ol; Vázquez Álvarez 2011, 99)

K'iche', on the other hand, is an example of a language in which the Set B absolutive morphemes uniformly precede the predicate stem, as in (10b) above. These ʜɪɢʜ-ᴀʙꜱ languages are proposed by Coon et al. 2014 to be languages in which finite Infl^0 is the source of absolutive morphology in both transitive and intransitive clauses (Legate's ABS=NOM; see also Campana 1992; Bittner and Hale 1996b; Aldridge 2004, among others). As expected, Set B morphemes may not appear in non-finite embedded clauses. The subject of a nonfinite embedded intransitive is cross-referenced via Set A marking, and transitive predicates must appear with passive or antipassive morphology in order to be embedded, as in (14).[8]

(14) X-u-chap   [nu-kuna-x-iik   ].
      ᴘꜰᴠ-ᴀ3ꜱ-begin   ᴀ1ꜱ-cure-ᴘᴀꜱꜱ-ɪᴛᴠ
      'She began to cure me.'   (K'iche'; Can Pixabaj 2015, 116)

Some languages, like Chuj and Q'anjob'al, allow both pre- and post-stem Set B morphology. In general, Set B markers appear attached to the TAM marker in eventive predicates, and follow the stem in stative "non-verbal" predicates which obligatorily lack TAM marking. Compare the Chuj eventive predicate in (15a) with the stative TAM-less form in (15b).

(15) a. Tz-**in**-y-il   waj Xun.
          ɪᴘꜰᴠ-ʙ1ꜱ-ᴀ3ꜱ-see ᴄʟꜰ Juan
          'Juan sees me.'   (Chuj; Buenrostro 2013, 128)
      b. Winak-**in**.
          man-ʙ1ꜱ
          'I am a man.'   (Chuj; Buenrostro 2013, 119)

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[7]We set aside for now the question of whether these morphemes are pronominal clitics or agreement markers, returning to this issue in section 5 below. What is relevant here is that an Agree relationship prefigures either, and we use the term "agreement" informally below to refer to any φ-indexing on the predicate. See for example Preminger 2019 and work cited therein on Agree as a precursor to both agreement and pronominal clitic formation.

[8]Based on the possibility of embedded reflexives, Can Pixabaj (2015) argues that nonfinite complement clauses in K'iche' may be formally transitive. Nonetheless, what is crucial here is the fact that—to our knowledge—Set B marking does not appear on these or other TAM-less embedded clauses in ʜɪɢʜ-ᴀʙꜱ languages. See also Aissen 2017b and works in Palancar and Zavala 2013 on nonfinite embedding in Mayan languages.
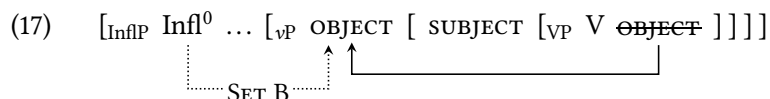
We propose that these Q'anjob'alan languages are nonetheless HIGH-ABS in the sense that finite Infl^0 is responsible for generating the Set B morphemes, and that alternations like the one in (15) are morphophonological in nature. As with K'iche' and other consistently HIGH-ABS languages, Q'anjob'al and Chuj do not permit nonfinite embedded transitives without special morphology. However, while K'ichean embedded predicates must be formally intransitive, Q'anjob'alan languages permit nonfinite embedded transitives *with the use of the AF morpheme* (Ordóñez 1995; Quesada 1997; Pascual 2007; Coon et al. 2014; termed the "Crazy Antipassive" by Kaufman 1990). This fact will form an important part of the motivation for the proposal in section 5 that while the EEC has a consistent source across the Mayan family, the AF solution is not homogenous. The patterns examined thus far are shown in the table (16).

(16)   *Extraction and embedding in three Mayan languages*

			source of ABS/Set B	EEC?	embedded ABS/Set B?
a.	LOW-ABS	e.g. Ch'ol	v^0	no	✓
b.	HIGH-ABS	e.g. K'iche'	Infl^0	yes	✗
c.	HIGH-ABS	e.g. Q'anjob'al	Infl^0	yes	with AF

To summarize, we assume that Set B morphemes are generated by an Agree relation with a functional head. In transitive clauses in LOW-ABS languages, like Ch'ol in row (a), transitive v^0 is responsible for the appearance of the Set B morpheme, and in general we do not find extraction restrictions in these languages (though see discussion of Tsotsil in appendix A). As is predicted on this account, Set B morphology is available in nonfinite embedded clauses. In HIGH-ABS languages, on the other hand, finite Infl^0 is the head responsible for Set B morphology, and ergative subjects are restricted from extracting. HIGH-ABS languages either ban Set B marking in nonfinite clauses altogether (e.g. K'iche'), or require the use of the AF morpheme in nonfinite embedded clauses (e.g. Q'anjob'al), a point of variation we return to in our analysis of AF in section 5 below.[9]

   Following Coon et al. 2014 and Assmann et al. 2015 we take the above facts to be connected: in HIGH-ABS languages, the transitive object must move to a position *above* the ergative subject. We take this object movement to be driven by an [EPP] feature on transitive v^0, present in HIGH-ABS languages. This movement makes the object accessible to the ABS-generating probe on Infl^0, as in (17). Below, the presence of Set B morphology will be an important diagnostic for the high position of object in HIGH-ABS languages.

(17) $[_{\text{InflP}} \text{Infl}^0 \ldots [_{vP} \text{OBJECT} [\text{SUBJECT} [_{\text{VP}} \text{V} \text{ ~~OBJECT~~ }]]]]$
          SET B

While movement of the object above the subject is necessarily for Set B morphology in HIGH-ABS languages, the object creates a locality problem for extraction of the ergative, as in (18) and discussed further in section 3 below.

(18) $[_{\text{CP}} \underline{\quad} \ldots [_{vP} \text{OBJECT} [\text{SUBJECT} [_{\text{VP}} \text{V} \text{ ~~OBJECT~~ }]]]]$
          ✗
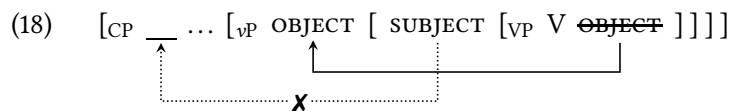
   Finally, note that while we have discussed Infl^0 and v^0 as the heads responsible for the appearance of the Set B (absolutive) morphemes, we make no commitment as to whether the realization of Set B morphology

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[9]All else being equal, we might expect that variation in postverbal word order in the Mayan family would correlate with this distinction, with HIGH-ABS languages showing VOS and LOW-ABS languages showing VSO. The picture, however, is more complicated than this, and we find languages with basic VOS and basic VSO on both sides of the HIGH/LOW divide. We leave this as a topic for future work, noting for now that the factors governing postverbal word order in Mayan are complex (England 1991; Clemens and Coon 2018), and that due to both the availability of *pro*-drop and the fronting of DPs for topic and focus, VOS and VSO orders are extremely rare.

is tied to nominal licensing. While some previous accounts of Mayan Agent Focus attribute the extraction problem to a failure of abstract case assignment (see e.g. Coon et al. 2014; Assmann et al. 2015), we argue below that this does not adequately cover all the facts. Our analysis leaves open the possibility that the appearance of Set B morphology is tied to abstract case assignment, but this is not a necessary part of the analysis, which we take to be an advantage of our account.

2.3 Agent Focus and variation

Though the focus of this article is on languages of the K'ichean and Q'anjob'alan subfamilies—on which much recent theoretical discussion focuses—Agent Focus has been claimed to be present in all five of the subfamilies in (8) above. As noted above, we focus here on constructions which share the properties in (19) (repeated from (7)).

(19) *Characteristics of Mayan Agent Focus*
      a. AF is used when the transitive subject is Ā-extracted;
      b. AF constructions involve dyadic predicates in which neither subject nor object DP is oblique;
      c. Set A (ergative) φ-marking is absent;
      d. a special Agent Focus suffix appears on the stem;
      e. if a status suffix appears, it is an intransitive status suffix.

An example from K'iche' illustrating these properties is shown in (20).

(20) Aree ri   at   x-at-ch'ay-ow-ik.
      FOC DET PRON2S PFV-B2S-hit-AF-ITV
      '*You* hit him/her.'   (K'iche'; Larsen 1988, 504)

Despite these pervasive characteristics, there is also variation in Agent Focus across the family, and this variation will play an important role in our analysis of AF constructions in section 5 below. A first point of reported variation concerns whether and how the person features of the subject and object DPs are involved in the choice between AF and transitive constructions, summarized in (21).

(21) *Argument features and AF*
      a. at least one DP must be 3rd person in order for AF to occur (e.g. K'iche');
      b. the *agent* must be 3rd person in order for AF to occur (e.g. Q'anjob'al);
      c. *both* agent and patient must be 3rd person in order for AF to occur (Tsotsil).

This is discussed in appendix A, where we demonstrate that this variation is only apparent, and does not provide counter-evidence to the EEC generalization in (4) above. Namely, the EEC is not affected by the person features of the subject and object DPs (contra Stiebels 2006; Watanabe 2017). Second, while AF constructions share in common the absence of Set A (ergative) marking, there is variation as to which argument (the subject or the object) is cross-referenced by the remaining Set B morphology, which we discuss in the remainder of this section.

Stiebels (2006) and Watanabe (2017) describe three different patterns of agreement in Mayan Agent Focus, summarized in (22). Here we argue against the existence of (22c).

(22) *Agreement patterns in AF*
      a. consistent object agreement (e.g. Q'anjob'al);
      b. variable agreement (e.g. K'iche');
      c. consistent subject agreement (e.g. Poqom).

The first type is exemplified by AF in languages of the Q'anjob'alan branch, as shown by Q'anjob'al in (23). Characteristic of Agent Focus, the Set A agreement which would normally cross-reference the transitive subject is absent. The Set B absolutive morpheme remains, and always co-indexes the internal argument. Recall that there is no third person Set B form, as in (23c).

(23) a. Maktxel max-**in** il-on-i?
who   PFV-B1S see-AF-ITV
'Who saw me?'   (Q'anjob'al; Coon et al. 2014, 223)

     b. Maktxel max-**ach** il-on-i?
who   PFV-B2S see-AF-ITV
'Who saw you?'   (Q'anjob'al; Coon et al. 2014, 180)

     c. Maktxel max il-on   naq winaq.
who   PFV see-AF CLF man
'Who saw the man?   (Q'anjob'al)

Languages in the K'ichean Proper subbranch of the K'ichean group (see (8c) above)—K'iche', Kaqchikel, Tz'utujil, Sakapultek, and Sipakapense—show hierarchy-based agreement (Dayley 1978; Norman and Campbell 1978; Smith-Stark 1978; Davies and Sam-Colop 1990; Preminger 2014). Specifically, the single Set B morpheme on the Agent Focus stem may cross-reference *either* the subject or the object DP, according to the hierarchy in (24).

(24)   1st person / 2nd person ≫ 3rd person plural ≫ 3rd person singular

Examples are shown in the K'iche' focus pairs in (25) and (26). The roles of the argument DPs are reversed in the pairs below, but note that the verb from remains identical. In (25) the Set B morpheme indexes the 1st person DP regardless of whether it is the subject or the object. Similarly, in (26) the Set B morpheme indexes the 3rd person plural DP regardless of its grammatical function.

(25) a. In   x-**in**-il-ow   le ak'al-ab'.
PRON1S PFV-B1S-see-AF DET child-PL
'*I* saw the children.'

     b. E are' le   ak'al-ab' x-**in**-il-ow   in.
PL FOC DET child-PL PFV-B1S-see-AF PRON1S
'*The children* saw me.'   (K'iche'; Davies and Sam-Colop 1990, 531)

(26) a. Ri ak'al-ab' x-**e**-tzuq-uw   ri   a Lu'.
DET child-PL PFV-B3P-feed-AF DET Peter
'*The children* fed Peter.'

     b. Ri   a Lu' x-**e**-tzuq-uw   ri   ak'al-ab'.
DET Peter PFV-B3P-feed-AF DET child-PL
'*Peter* fed the children.'   (K'iche'; Davies and Sam-Colop 1990, 531)

We offer an analysis of the appearance of the hierarchy effect precisely in AF contexts in section 5.3 below.

Finally, both Stiebels (2006) and Watanabe (2017) describe a third pattern in AF: consistent subject agreement. Watanabe lists Q'eqchi' and Mam; Stiebels also lists Poqom and Poqomchi'.[10] However, as Stiebels (2006, 528) notes: "In general, subject agreement seems to correlate with the oblique realization of the internal argument." A Poqom example is given in (27). Note here that the patient is introduced by a relational noun (RN), used to introduce oblique nominals across the family; the verb takes an intransitive

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[10]We follow Benito Pérez (2016) in referring to the language as Poqom, rather than Poqomam.

status suffix *-a* and the subject triggers Set B morphology on the stem.

(27)   Re' han   x-in-tiin-sa-n-a   [OBL aw-eh].
       FOC PRON1S PFV-B1S-bathe-CAUS-ANTIP-ITV   A2-RN
       '*I* bathed you.'   (Poqom; Benito Pérez 2016, 57)

We gloss the suffix on the verb in (27) as antipassive (ANTIP) rather than AF because Benito Pérez (2016, 55) notes that the morphology found on verbs in which the agent (i.e. underlying external argument) is focussed is *identical* to that found in antipassive: *-n* for derived transitives, *-w* for underived "root" transitives.

Compare the forms in (28). In (28a) we see a sentence with no extraction typically described as an antipassive, while in (28b) we find a sentence with extraction described as Agent Focus.

(28)   a.   X-to'-**w**-a   [OBL r-eh   ma' Tojin] la   k'ayaneel.
            PFV-help-ANTIP-SS   A3S-RN CLF Tojin   DET salesman
            'The salesman helped Tojin.'   (Poqom; Benito Pérez 2016, 53)
       b.   Re' la   k'ayaneel x-to'-**w**-a   [OBL r-eh   ma' Tojin].
            FOC DET salesman PFV-help-ANTIP-SS   A3S-RN CLF tojin
            '*The salesman* helped Tojin.'   (Poqom; Benito Pérez 2016, 56)

In both forms in (28), the patient is oblique, the verb is formally intransitive, and the subject is marked with Set B. Given that the agent, *la k'ayaneel*, is an intransitive Set B-triggering subject, it is unsurprising that it may undergo extraction, as in (28b). We contend that (28b) simply *is* an antipassive form; because extraction of intransitive subjects is not restricted, these types of constructions—though interesting in their own right—do not pose a puzzle for the question of how the EEC is obviated.
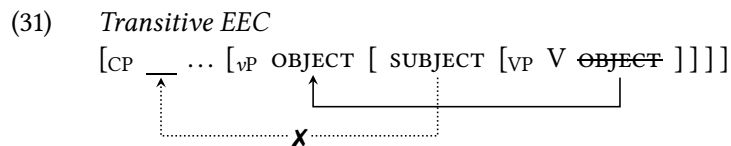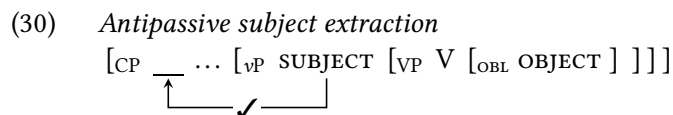
Similar facts are described for Mam (England 1983), which does not appear to possess a distinct AF form, but instead uses antipassive forms to extract agents: "The antipassive is used for various functions, including unknown or unmentioned patient, *agent promotion*, object (patient) incorporation into the verb, and lexical functions" (England 1983, 110, emphasis ours); see also Pérez Vail 2014 on the Mam antipassive. The use of an antipassive form to circumvent an ergative extraction restriction is a typologically common pattern in languages with which restrict the extraction of transitive subjects (see e.g. Deal 2016; Polinsky 2017), and is also independently available in languages which *do* have a distinct AF form.

Finally, Berinstein (1998) describes two different constructions with demoted objects in Q'eqchi'. One corresponds to what has been described as an "incorporation antipassive" in other Mayan languages (e.g. Maxwell 1976 on Chuj), shown in (29a). Here the internal argument must be a bare non-referential NP, the verb stem bears the antipassive suffix and is formally intransitive, and the subject behaves as other intransitive subjects in triggering Set B morphology. The second construction, in (29b), shows the same antipassive morphology, an intransitive verb stem, and an oblique object. However, unlike a regular antipassive, it is apparently *restricted* to contexts when the agent is Ā-extracted (she labels this construction "2-3 Retreat", in the framework of Relational Grammar).

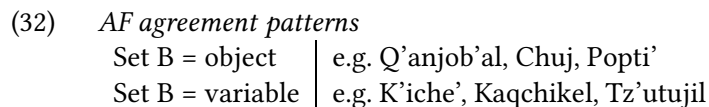(29)   a.   T-oo-lok'-o-k   wa.
            FUT-B1P-buy-ANTIP-SS tortilla
            'We will buy tortillas.'
       b.   Laa'o   t-oo-lok'-o-k   [OBL r-e   li wa   ].
            PRON1P FUT-B1P-buy-ANTIP-SS   3S-RN DET tortilla
            '*We* will buy the tortillas.'   (Q'eqchi'; Berinstein 1998, 212)

As discussed in Aissen 2017b, while it is interesting that the antipassive form in (29b) is restricted to

contexts of agent extraction (Aissen labels these AF$_{OBL}$), this form again does not present the same type of puzzle as canonical AF constructions: because the object is demoted to oblique status and does not raise (see section 3 below), and the clause is intransitive, it is unsurprising that the subject triggers Set B morphology and can extract. Contrast the schema in (30) with the ungrammatical (31), repeated from (5) above.

(30)   *Antipassive subject extraction*
         [$_{CP}$ __ ... [$_{vP}$ SUBJECT [$_{VP}$ V [$_{OBL}$ OBJECT]]]]

(31)   *Transitive EEC*
         [$_{CP}$ __ ... [$_{vP}$ OBJECT [SUBJECT [$_{VP}$ V ~~OBJECT~~]]]]]

We thus find the two basic agreement patterns in the AF constructions under consideration here from (22a) and (22b) above, summarized in (32).

(32)   *AF agreement patterns*

|	
Set B = object	e.g. Q'anjob'al, Chuj, Popti'
Set B = variable	e.g. K'iche', Kaqchikel, Tz'utujil

As noted by Stiebels (2006), consistent subject agreement (from (22c) above) is limited to contexts in which objects are demoted. Though these antipassive constructions are interesting, they do not present the same type of puzzle for how the EEC is circumvented and are not discussed further here.

Finally, note that variation has been described for some languages in *which* types of preverbal ergatives require AF. Heaton et al. (2016) report on an experimental study comparing AF in wh-questions and relativization in Kaqchikel, finding that AF is preferred for wh-questions but not relativization; see also Stiebels 2006 for a summary of similar variation in other Mayan languages. We return to this type of variation below, suggesting that it could be due either to (i) high base generation of certain ergatives (§3.1 and see Henderson and Coon 2018); or (ii) variation in probe structure (§4.2, fn. 17).

In the following section we provide evidence to show that the EEC is specifically a locality problem caused by intervening DP objects through an examination of environments in which transitive subject extraction is exceptionally licit. We then turn in section 4 to a formalization of this intervention.
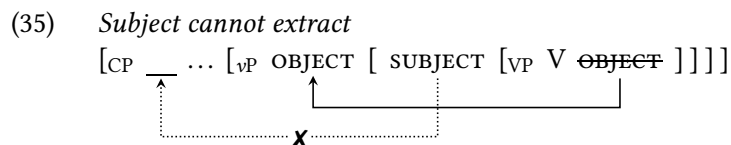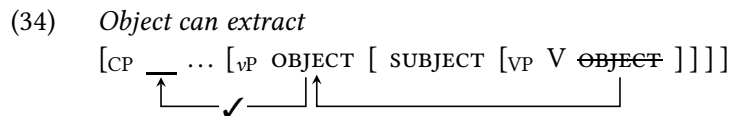
3   The extraction problem

As stated at the outset, we propose that the source of the EEC is *locality*. Recall from section 2.2 above that the direct object of a transitive clause in all HIGH-ABS Mayan languages moves to a position above the ergative subject; we take this movement to be triggered by an [EPP] feature on v^0. In this configuration, the direct object establishes an Agree relationship with Infl^0, resulting in Set B morphology. Set B morphology is correctly expected to correlate with the presence/absence finite Infl^0 in HIGH-ABS languages (see (14) above). The relevant configuration is diagrammed below in (33).

(33)   [$_{vP}$ OBJECT [SUBJECT $v^0_{[EPP]}$ [$_{VP}$ V ~~OBJECT~~]]]
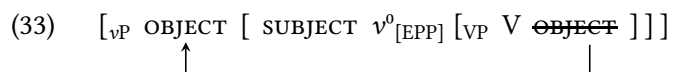
In the configuration in (33), the direct object asymmetrically c-commands the subject, and therefore stands in a more local relationship with probes on higher functional heads. We contend, following previous

authors, that this configuration is the source of the ban on Ā-extraction of the ergative subject (Coon et al. 2014; Assmann et al. 2015). By virtue of moving above the subject, the object alone is a licit target for Ā-movement to Spec,CP, schematized in (34). Ergative subject Ā-movement is ill-formed as shown in (35), repeated from (5).

(34) *Object can extract*
$[_{CP}$ ___ ... $[_{vP}$ OBJECT $[$ SUBJECT $[_{VP}$ V O̶B̶J̶E̶C̶T̶ $]]]]$

(35) *Subject cannot extract*
$[_{CP}$ ___ ... $[_{vP}$ OBJECT $[$ SUBJECT $[_{VP}$ V O̶B̶J̶E̶C̶T̶ $]]]]$

Ā-extraction of the ergative subject across the transitive object constitutes a Minimality violation, to be formalized in section 4 below. In this respect, the present analysis is similar to previous analyses of extraction restrictions, for example Campana 1992 on Mayan and Aldridge 2004, 2008b on Austronesian.

Ā-probes are generally taken to obey Relativized Minimality (Rizzi 1990), and therefore are able to skip over or ignore nominals that structurally intervene between a probe and its intended goal but which crucially lack the requisite Ā-feature sought by the probe—for example, the plain object DP in the configuration in (35). Instead, Ā-probes are commonly thought to target the closest element that is accessible to the probe *and* that bears an Ā-feature. Building on an analysis of K'ichean in Levin 2018, however, we claim that (36) holds in Mayan:

(36) RELATIVIZED PROBING IN MAYAN Ā-MOVEMENT
Ā-probes are relativized to the feature [D].

Adopting (36)—to be formalized in §4—Ā-probes in Mayan languages are expected to always target the first accessible DP in their c-command domain because all DPs bear D-features (see e.g. Nevins 2007, 2011, Béjar and Rezac 2009, Preminger 2014 for discussion of feature-relativized probing). We propose that it is the combination of (i) movement of the transitive object above the ergative subject as in (35), and (ii) relativization of the Ā-probe to [D], as in (36), that conspire to yield the EEC.

Before turning to a formalization of this relativized probing in section 4, we first provide evidence that *locality*, and not other syntactic considerations, is the determining factor for explaining the EEC (§3.1). Next we discuss why the analysis presented here is preferable to recent alternative proposals for capturing the EEC or syntactic ergativity effects more broadly (§3.2).

3.1 Evidence for a locality-based account

The present account predicts that transitive subject extraction out of a clause that does not contain an intervening DP object will be licit. This is generally the case in LOW-ABS languages, in which objects remain low and the EEC is absent. If on the other hand, in a LOW-ABS language, special factors cause the object to raise above the subject, we predict—all else being equal—that an extraction restriction should arise. Tsotsil presents evidence that this prediction is borne out, discussed in appendix A. By the same token, if in a HIGH-ABS language we find specific environments which do *not* involve an intervening DP object, we predict subject extraction to be well formed.

There are (at least) two environments in which transitive subjects extract in HIGH-ABS languages without the use of AF morphology, each examined below. First, in some languages, transitive clauses with bare NP objects have been noted to permit ergative subject extraction. Here we propose that the transitive

NP object moves above the subject but, due to the fact that it lacks a [D] feature, it will not intervene if the Ā-probe is relativized to [D]. Second, constructions with reflexive and "extended reflexive" objects permit transitive subject extraction. Here, we propose that the object undergoes movement to a position above the subject, but then *reconstructs* for binding purposes; in section 4 below we offer a formal proposal for why such objects will not count as interveners. In the remainder of this section we show that both environments, summarized in (37), are attested in HIGH-ABS Mayan languages.

(37)   *Environments in which the EEC lifted in HIGH-ABS languages*
    a.   object is a bare NP   (§3.1.1)
    b.   object is a reflexive or extended reflexive   (§3.1.2)

In exactly these environments the EEC is suspended and ergative subject extraction out of a canonical transitive clause is exceptionally well-formed.

Finally, the EEC has been reported to be obviated in environments of which both the subject and object DP occupy the left periphery, in apparent examples of multiple extraction, discussed in more detail in Erlewine 2016. These effects are described for Kaqchikel by García Matzar and Rodríguez Guaján (1997) and Broadwell 2000, shown in (38). When both arguments appear preverbally, as in (38a), the order S–O–V triggers the use of a full transitive verb form. The reverse order, O–S–V, requires the Agent Focus form of the verb, as in (38b). The initial element is contrastive, as indicated by the translations from the original.

(38)   a.   [_SUBJ Ja ri utiw-a'], [_OBJ ja ri aq] x-e-ki-tij.
              FOC DET coyote-PL   FOC DET pig PFV-B3P-A3P-eat
             '(In contrast to) the coyotes, it's the pigs they eat.'
    b.   [_OBJ Ja ri aq], [_SUBJ ja utiw-a'] x-e-ti-o.
              FOC DET pigs   FOC coyote-PL PFV-B3P-eat-AF
             '(In contrast to) the pigs, it's the coyotes that eat them.'   (Kaqchikel; García Matzar and Rodríguez Guaján 1997, 405)

Henderson and Coon (2018) argue that the initial DP in sentences like (38a) is a base-generated high topic, associated with a null pronoun in the base subject position. This is supported by the fact that an intonational break is required between the two DPs, which Aissen (1992) takes to be a diagnostic of high topics. Aissen (1992, 76) further notes a connection between external topics and contrastive topics in Kaqchikel's close relative, Tz'utujil. Under such an analysis, the S–O–V sentence in (38a) involves only object extraction and the transitive form of the verb is expected. In contrast, O–S–V sentences like (38b) show true subject extraction (with a high base-generated object), and AF is correctly predicted to be required. We do not discuss these examples further here, but see Levin 2018 for an alternative.[11]

3.1.1   NP complements

The locality-based approach pursued here receives support from the behavior of bare NP complements in the HIGH-ABS language K'iche'. If the transitive object is an NP, not a DP, it is predicted to not be a viable target for the [D]-relativized Ā-probe, even if it occupies a position in the clause that is structurally superior to that of the subject. As demonstrated by Aissen (2011), bare NPs in K'iche' permit Ā-movement of the ergative subject. This is shown for a *wh*-subject in (39a) and a negative existential in (39b).

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[11]A second possibility is proposed by Levin (2018). If sentences like those above *do* involve multiple extraction, as proposed in Erlewine 2016, then in the grammatical S–O–V transitives, the subject can be analyzed as having extracted across the *trace* of the object. Given that traces are shown cross-linguistically to not behave as interveners—see Rizzi 1986; Chomsky 1995, 2001, McGinnis 1998, Bošković 2011)—we would correctly predict that the ergative subject should be targetable by the Ā-probe on C⁰.

(39) a. Jachiin x-u-loq'   (*rii) uuq?
          WH   PFV-A3s-buy DET cloth
          'Who bought cloth?'
      b. Maj-juun k-u-loq'   (*lee) ojeer siik'.
          NEG-INDF IPFV-A3s-buy DET old cigarette
          'No one is going to buy old cigarettes.'   (K'iche'; Aissen 2011, 12)

This pattern of variation is found in K'iche' because K'iche' crucially allows bare NP objects of transitive clauses, in alternation with full transitive DP objects. In many other HIGH-ABS Mayan languages—for example Chuj and Q'anjob'al—bare NP objects trigger an intransitive "incorporation antipassive" construction (Pascual 2007; Coon 2019), independently predicted to permit the agent to extract. In others, like Tz'utujil, determiners are absent altogether (Dayley 1981; Duncan 2003), which could indicate that apparently-bare NPs are not in fact structurally reduced.

We maintain that the obligatory absence of determiners in (39) indicates that objects in this constructions are structurally reduced; they lack D^0 and its concomitant [D]-feature. These objects are nevertheless phrasal. They can be modified by adjectives, as in (39b). In fact, these reduced noun phrases are at least as big as NumP, because they can bear plural marking and in such cases trigger 3rd person plural Set B agreement on the verb, as in (40).

(40) Ma jun achi taj k-**e'**-u-b'oq   alaj **taq** chee'.
      NEG INDF man IRR INC-B3P-A3s-uproot DIM PL tree
      'It's not a man that is uprooting little trees.'   (K'iche'; Aissen 2011, 12, citing López Ixcoy 1997)

Sentences like those in (40) are important to the analysis proposed here. Recall that the realization of Set B morphology in HIGH-ABS languages like K'iche' requires the transitive object to undergo movement to a position above the transitive subject; from this higher position, the object is able to enter into Agree with $Infl^0$, resulting in Set B marking (see §2.2). The presence of the 3rd person plural Set B marker *e'-* in (40) indicates Agree between $Infl^0$ and the bare NP object *has* taken place. This contrasts with the analysis in Coon et al. 2014, where it is proposed that these bare NP objects permit ergative extraction because they remain low. Under the proposal developed here, the bare NP object, just like a full DP object, stands in a more local relationship to higher functional heads, shown in (41).

(41) *Subject can extract if object is NP*
      [$_{CP}$ __ ... [$_{vP}$ OBJECT$_{NP}$ [SUBJECT [$_{VP}$ V ~~OBJECT~~]]]]
      ✓

Under the proposal advanced here, the NP object is accessible to the Set B-generating φ-probe on $Infl^0$, correctly permitting the appearance of a Set B morpheme. Due to its lack of [D], however, it does not intervene for the higher [D]-relativized Ā-probe, and the transitive subject is correctly predicted to be extractable formalized in section 4 below.

In sum, the licit Ā-extraction of the ergative subject from a canonical transitive verb in the presence of a structurally reduced nominal complement is expected if locality, evaluated by a [D]-relativized Ā-probe, is the operative constraint in the EEC. When the object, occupying a structurally superior position to the ergative subject is a DP, it is a more local goal and must be targeted for Ā-extraction. When the object, occupying the very same position, is not a DP, it is a not an eligible goal and the subject is available for Ā-extraction.

3.1.2 Reflexive and extended reflexive complements

The second environment in which ergative subject Ā-extraction is exceptionally well-formed is when the subject binds the possessor of the object in both reflexive and "extended reflexive" constructions (e.g. Craig 1977; Mondloch 1981; Ordóñez 1995; Aissen 1999, 2011, 2017b; Pascual 2007; Coon and Henderson 2011; Hou 2013; Velleman 2014; Coon et al. 2014). These effects are robust across a number of Mayan languages that display the EEC. Examples of exceptional ergative subject Ā-extraction from reflexive and extended reflexive configurations in Q'anjob'al and K'iche' are provided in (42) and (43).

(42) *Reflexive objects*

    a.   Maktxel max y-il   **s-b'a**?
         who   PFV A3s-see A3s-self
         'Who saw herself?'   (Q'anjob'al; Coon et al. 2014, 225)

    b.   Aree jun kumatz u-b'aq'ati-m **r-iib'**.
         FOC one snake A3s-roll-PERF A3s-self
         '*A snake* coiled itself (around the tree).'   (K'iche'; Mondloch 1981, 233)

(43) *Extended reflexive objects*

    a.   Maktxel max s-bon   **s-na**?
         who   PFV A3s-paint A3s-house
         'Who$_i$ painted his$_{i/*j}$ (own) house?'   (Q'anjob'al; Coon et al. 2014, 226)

    b.   Aree lee a   Xwaan x-u-k'at   **r-aqan**.
         FOC DET CLF Juan   PFV-A3s-burn A3s-foot
         '*Juan$_i$* burned his$_{i/*j}$ (own) foot.'   (K'iche'; Mondloch 1981, 237)

Reflexive constructions like those in (42) involve a transitive verb stem and a nominal anaphor, often described as a relational noun or a body-part noun, in object position. Like other relational nouns, the reflexive noun appears with obligatory Set A marking (recall that Set A prefixes co-index both transitive subjects and possessors). As the examples in (42) show, transitive subjects may Ā-extract from a transitive verb when the object is a reflexive. The so-called "extended reflexives" in (43) appear structurally similar, but the possessed object is a regular (non-anaphoric) nominal (Aissen 1999). In the examples in (43), the subject binds the possessor of the object and a transitive subject again appears Ā-extracted in the absence of AF marking. We contend the in these configurations, too, the bound object does not act as an intervener. Because locality is the operative factor in deriving the EEC, exceptional ergative Ā-extraction is licit.

    Evidence that it is specifically the *binding* of the object's possessor that is at issue comes from the sentence in (44), a minimal pair with the extended reflexive in (43a) above. In both sentences, the object is the possessed nominal *sna* 'his house'. In (43a), when the verb form is transitive, the object's possessor is interpreted as bound by the subject—an extended reflexive. In (44), the verb is in the AF form and the object's possessor may not be interpreted as bound by the subject.

(44)   Maktxel max bon-on s-na?
       who   ASP paint-AF A3s-house
       'Who$_i$ painted his$_{*i/j}$ house?'   (Q'anjob'al; Coon et al. 2014, 226)

Similar alternations can be found in other languages in the works cited above.

    We first consider extended reflexive objects, which display two important properties. First, the possible appearance of 3rd person plural Set B morphology on the predicate provides evidence that extended reflexive objects *do* undergo movement to a position above the subject. In Kaqchikel, for example, the plural possessed object, *ri rak'wala* 'his children', is bound by *Juan* in (45a) and by the subject *wh*-word in (45b). In both, the plural object triggers the realization of the overt 3rd plural Set B morpheme *-e*.

(45) a. Ja ri a Juan x-**e**-b'e-ru-kano-j ri r-ak'wal-a.
FOC DET CLF Juan PFV-B3P-DIR-A3S-look.for-DTV DET A3S-child-PL
'It's Juan$_i$ that went to look for his$_{i/*j}$ (own) children.'

b. Achike x-**e**-b'e-ru-kano-j ri r-ak'wal-a?
WH PFV-B3P-DIR-A3S-look.for-DTV DET A3SG-child-PL
'Who$_i$ went to look for his$_{i/*j}$ (own) children?' (Kaqchikel; Filiberto Patal Majzul p.c.)

We propose that the ability for the bound objects to trigger Set B morphology in (45) indicates that the bound object has, like other objects, undergone movement above the subject, where it establishes an Agree relationship with finite Infl^0 (on par with the bare NPs from §3.1.1 above). However, unlike canonical objects, bound objects do not act as interveners. Second, observe that extended reflexive objects in Kaqchikel may be full DPs—not structurally reduced NPs—as evidenced by the presence of the determiner *ri*.[12]

If extended reflexive objects are DPs which have moved to the usual HIGH-ABS position above the subject, why do they not trigger EEC effects? We claim that while this EPP-driven movement is necessary to trigger the realization of Set B morphology, as in (45), it is problematic from the point of view of binding (cf. Campana 1992). In order to be bound by the subject, the object, having moved above the subject, must subsequently reconstruct to its base position.[13] We formalize the details of how reconstruction feeds subject extraction in the following section.

(46) *Object reconstruction for binding feeds subject extraction*
[$_{CP}$ ___ … [$_{vP}$ ~~OBJECT~~ [SUBJECT [$_{VP}$ V OBJECT]]]]
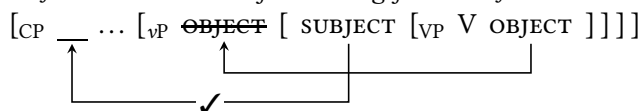
Now consider reflexive objects: the syntactic position of reflexives and their categorical status is less clear than extended reflexives. As noted above, reflexives in Mayan languages are formed by combining a possessive Set A marker with an anaphoric relational noun, glossable as 'self'. Unlike English, these reflexive nominals do not inflect for number. Therefore, it is not possible to tell if reflexive objects have moved above the ergative subject or not. Moreover, reflexive objects do not appear to be able to co-occur with elements associated with D^0, such as determiners or nominal classifiers, and in some languages they have been noted to necessarily appear adjacent to the predicate, even when the canonical word order is VSO (see Coon et al. 2014 on Q'anjob'al).

We thus have two viable options for accounting for regular reflexives like the ones in (42) above. One possibility is that they are structurally reduced, and that the grammaticality of transitive subject extraction is connected to their reduced [D]-less status, as with the NP objects discussed in section 3.1.1 above. Alternatively, they could be full DPs, but as with extended reflexives, they are required to reconstruct to their base position below the subject for binding purposes. It is possible for both options to exist within Mayan, and while we set aside a full account of reflexive objects, we note that both possibilities are correctly predicted to obviate the EEC.

Finally, our account predicts that semantic binding is the relevant factor in causing reconstruction and

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[12]We are grateful to Rodrigo Ranero for data collection and discussion of these patterns. Similar data cannot be replicated in Q'anjob'alan languages where 3rd person plural DPs do not trigger Set B morphology on the predicate, on par with 3rd person singular. Furthermore, while Q'anjob'alan languages lack general determiners, they do have a series of nominal classifiers, which are impossible on extended reflexive objects (Coon et al. 2014; Royer 2017, 2019). Coon et al. take the obligatory absence of nominal classifiers to indicate that extended reflexive objects have pseudo-incorporated into the verb and thus remain low. However, their account does not capture the fact that extended reflexive objects need *not* appear adjacent to the verb (Coon et al. 2014, fn. 28). Our account here is compatible with an analysis in which the Q'anjob'alan extended reflexive object raises and lacks a classifier for independent semantic reasons (see Royer 2019).

[13]Note that subsequent movement of the subject to a higher position above the object will not suffice, as such movement is uniformly Ā-movement, which does not create new antecedents for binding.

thus permitting ergative subject extraction. All else being equal, we predict that in other environments in which the subject binds an element inside the object DP, we might expect the EEC to again be lifted. While to our knowledge this has not been discussed elsewhere in the Mayanist literature, initial data from Chuj in (47) provides support for this proposal.

(47) a. **Context**: The teacher has bought a new book for the class and everyone takes turns reading it. You want to know who already read it and you ask:

Mach ix-awt-an   [ch'anh libro ix-s-man   *(**ix**)   ]?
who   PFV-read-AF   CLF   book PFV-A3-buy CLF.FEM

'Who$_i$ read the book that she$_j$ bought?'

b. **Context**: The class has gone on a trip to the bookstore, and every girl gets to buy one book. They go back to school and everyone takes out their new book to read. You ask:

Mach ix-y-awt-ej   [ch'anh libro ix-s-man-a'   (***ix**)   ]?
who   PFV-A3-read-DTV   CLF   book PFV-A3-buy-TV CLF.FEM

'Who$_i$ read the book that she$_i$ bought?'   (Chuj)

The baseline sentence in (47a) involves no pronominal binding and obligatorily employs AF for extraction of the subject. In (47b), however, when the extracted subject binds a (null) pronominal in the object relative clause, extraction is permitted from a transitive verb form.

Chuj is an especially good language in which to test this contrast, because there is an independent difference visible in bound versus unbound pronominals: nominal classifiers like the feminine *ix* above are generally obligatory in definite and specific contexts like (47a), but are impossible in bound pronominal contexts like (47b) (Royer 2019).[14] While further work is needed to determine if this generalization is attested more broadly in the languages for which reflexive and extended reflexive objects obviate the EEC, we take the contrast in (47) as strong evidence for the proposal that it is specifically *binding* at issue in these constructions, rather than, for example, syntactic differences between extended reflexive and regular DP objects.

3.2 Interim summary and comparison with other accounts

Normally the ergative subject is restricted from undergoing Ā-extraction in HIGH-ABS languages because the object has moved above it (see (35)). This configuration permits finite Infl⁰ to enter into Agree with the object (§2.2), but it also makes the object a more local goal for the [D]-relativized Ā-probe (see (36)). If, as we propose, locality explains the ungrammaticality of ergative subject Ā-extraction, we expect to find instances of exceptionally well-formed ergative subject Ā-extraction just in case the transitive object does not act as an intervener.

In the preceding subsection, we investigated two environments in which ergative subject Ā-extraction is exceptionally well-formed: transitives with bare NP objects (§3.1.1); and transitives in which the subject binds into the object (§3.1.2). We proposed that both cases provide evidence that *locality* is behind the EEC. In the next section, we formalize our analysis of how the probe operates to derive both the EEC in regular HIGH-ABS environments, as well as the availability of extraction in the exceptional environments described

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[14]While AF is required in (47a), either transitive or AF forms of the verb were deemed acceptable in (47b). This is in line with the fact that AF is generally optional in Chuj extended reflexives (Hou 2013). While our account does not explain why AF should be possible in some environments where it is not required (see §5), the crucial point here is that the EEC is lifted when the subject binds into the object.

above.[15]

Not only do the facts discussed in section 3.1 lend support to the idea pursued here that locality bears the explanatory burden of the EEC, these facts also prove problematic for alternative accounts of the EEC in Mayan. These previous accounts fall into two main groups: (i) the nature of the *ergative subject* prevents extraction; and (ii) ergative extraction creates a problem for *licensing of the object*.[16] In the interest of space we do not summarize these alternatives in full, but briefly highlight the issues raised by the facts above.

First, it has been claimed that syntactic ergativity effects, like the EEC, should be attributable to properties of the ergative subject itself (Deal 2016; Polinsky 2016). Under these accounts, some ergative subjects are proposed to not be viable targets for Ā-probes. This could be because ergative subjects are embedded inside an inaccessible PP (possibly with a null P^0; Polinsky 2016), or because ergative subjects do not meet the case discrimination requirements of Ā-probes (Deal 2016). All three exceptional cases considered above are problematic for such analyses. These demonstrate that extracting ergative subjects is not, in and of itself, a problem. Rather, the availability of ergative subject extraction is sensitive to the nature of the *direct object* (see also discussion in Henderson and Coon 2018). Under proposals which attribute ergative extraction restrictions to properties of the ergative DP, the exceptional well-formedness of ergative subject Ā-extraction in environments in which the object is a non-intervener is not expected.

The licensing-based accounts of Coon, Mateo Pedro, and Preminger (2014) and Assmann, Georgi, Heck,

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[15]One environment not discussed above is the behavior of ergative subject extraction from transitive clauses that take a CP-complement. We might imagine that, like bare NP-complements, CP-complements would permit ergative subject Ā-movement, because CPs, like NPs, lack [D]. This is not the case. Ergative subject extraction from clauses with CP-complements employ AF, as shown (i). Corresponding examples without AF are ungrammatical, as in (ii).

(i) a. Achike x-b'i-**n**   [chin ri   a   Juan yawa]?
         WH   PFV-say-AF COMP DET CLF Juan sick
         'Who said that Juan is sick.'   (Kaqchikel; Erlewine 2013, 43)

     b. Maktxel max hal-**on** [tol   max toj ix   Anixh]?
         who   PFV say-AF   COMP PFV go CLF Anna
         'Who said that Anna left?'   (Q'anjob'al; Pedro Mateo Pedro p.c.)

(ii) a. *Achike x-u-b'ij   [chin ri   a   Juan yawa]?
         WH   PFV-A3s-say COMP DET CLF Juan sick
         'Who said that Juan is sick.'   (Kaqchikel; Erlewine 2013, 43)

     b. *Maktxel max y-al   [tol   max toj ix   Anixh]?
         who   PFV A3s-say COMP PFV go CLF Anna
         'Who said that Anna left?'   (Q'anjob'al; Pedro Mateo Pedro p.c.)

At first blush, this behavior would appear problematic for the present account. Lacking a [D]-feature, CP-complements should not intervene. Nevertheless, there a few ways to understand this apparent contradiction. It may be the case that CPs are DPs (e.g. Rosenbaum 1967, Emonds 1976, Davies and Dubinsky 2000). Alternatively, CPs might be base-generated in Ā-positions and be co-referential with a DP in argument position (e.g. Alrenga 2005). On either of these views, transitive clauses with putative CP complements should behave identically to those with DP complements, blocking ergative subject extraction. Alternatively, CPs might intervene for independent reasons. In order for long-distance Ā-movement to obtain, CPs must themselves establish syntactic relationships within the clause (e.g. Rackowski and Richards 2005, van Urk and Richards 2015). If CP complements also move above the ergative subject (followed by extraposition the the right edge), this requirement may block Ā-probes from skipping over the intervening CP to target the ergative subject. We leave investigation of these and other possible alternatives for CP complements to future work.

[16]One recent analysis not discussed here at all is Erlewine's (2016) anti-locality account of the EEC. See Henderson and Coon 2018 for a critique of that proposal. We similarly do not provide a detailed discussion of the account in Stiebels 2006. Stiebels frames her account in Lexical Decomposition Grammar, and takes AF to be a grammaticalized mechanism of disambiguation, with variation governed by differences in constraint ranking. As with the account in Watanabe 2017, variation in the relevance of person features is taken to represent a hierarchy across the languages. If, as we argued in section 2.3 above, variation is instead attributable to independent differences in the languages in question, this account loses some of its effectiveness. It further lacks a developed-enough syntax to make clear predictions about which languages and constructions should require AF. See also Preminger 2014 and Aissen 2017b for discussion.

Müller, and Weisser (2015) also face problems in accounting for the data above. In both accounts, the EEC is connected to the licensing needs of the object. For Coon et al. (2014), the movement of the object above the subject is required in order for the object to be licensed by Infl⁰, but results in the lower subject being trapped inside the vP phase. For Assmann et al. (2015), all DPs must pass through Spec,InflP en route to Spec,CP; if the transitive subject moves through Spec,InflP, however, it *maraudes* the licensing abilities of Infl⁰, leaving the object without an available licenser. For both accounts, extraction of the ergative subject is predicted to be incompatible with the object entering into Agree with Infl⁰. The crucial data points from above are repeated in (48); in both, the subject has extracted from a full transitive clause and the object triggers Set B (3rd plural) marking on the verb. Taking Set B to indicate that Agree with Infl⁰ has taken place, and given that these accounts take Infl⁰ to be the source of object licensing, these sentences demonstrate that ergative extraction should not be incompatible with object licensing.

(48)   a.   Ma jun achi taj k-**e'**-u-b'oq   **alaj taq chee'**.
           NEG INDF man IRR INC-B3P-A3S-uproot DIM PL   tree
           'It's not a man that is uprooting little trees.'   (K'iche'; =(40))

     b.   Achike x-**e**-b'e-ru-kano-j   **ri**   **r-ak'wal-a**?
           WH   PFV-B3P-DIR-A3S-look.for-DTV DET A3SG-child-PL
           'Who$_i$ went to look for his$_{i/*j}$ children?'   (Kaqchikel; =(45b))

Coon, Mateo Pedro, and Preminger's account focuses on Q'anjob'al, where similar facts are independently unavailable. However, if a unified account of the Mayan EEC and AF is desired, these facts show that nominal licensing is not a viable approach.

4   Deriving the Ergative Extraction Constraint

In this section, we lay out a unified account of the EEC. In the previous section, we motivated the proposal that the source of the EEC is *locality*. Recall from section 2.2 that the direct object of a transitive clause in HIGH-ABS Mayan languages moves to a position above the transitive subject. Crucially, this causes the direct object to asymmetrically c-command the subject, placing it in a more local relationship to higher functional heads Infl⁰ and C⁰. Proximity of the object to Infl⁰ is necessary in order for Infl⁰ to enter into Agree with the object, creating the Set B morphemes. We argue, following previous authors, that this configuration is also the source of the ban on Ā-extraction of the ergative subject, as schematized in (49).

(49)   *Subject cannot extract*
       [$_{CP}$ __ ... [$_{vP}$ OBJECT [SUBJECT [$_{VP}$ V ~~OBJECT~~]]]]]

We propose that Ā-extraction of the ergative subject across the transitive object in (49) constitutes a Minimality violation because of the nature of the probe on C⁰ in Mayan. Specifically, the probe responsible for Ā-extraction searches simultaneously for both [Ā] and [D] features, as in (50) (repeated from (36) above):

(50)   RELATIVIZED PROBING IN MAYAN Ā-MOVEMENT
       Ā-probes are relativized to the feature [D].

The relativization of an Ā-probe to [D] connects to recent work on extraction asymmetries outside of the Mayan family. Aldridge (to appear), for example, proposes that Austronesian movement to Spec,CP is driven by [φ]-features, while Erlewine (2018) (building on Erlewine, van Urk, and Levin 2017) proposes that the locus of nominal case licensing in Toba Batak is a bundled C⁰–T⁰ head. This line of work blurs

the division between the roles and features typically associated with T⁰ and C⁰ (and relatedly, between A-movement and Ā-movement; van Urk 2015), with potential connections to the notion of Feature Inheritance more generally (Richards 2007; Chomsky 2008), discussed in more detail below. Importantly, however, these works also relate asymmetries in extraction to a problem of nominal licensing (as in e.g. Coon et al.'s and Assmann et al.'s accounts of Mayan discussed above). For Aldridge and Erlewine, only the DP which extracts may receive abstract structural case (i.e. nominative/absolutive). In Mayan, however, we argued in section 3 that nominal licensing cannot be the problem: finite Infl⁰ *may* enter into Agree with the object, even when the ergative subject extracts.

In the remainder of this section, we present a formal account of the Mayan EEC which relies on (50), but which crucially does not require reference to nominal licensing; nominal licensing may or may not be independently necessary, and we take no stand on this issue here. In section 4.1, we introduce Coon and Keine's 2018 derivation of φ-feature-driven hierarchy effects in terms of *feature gluttony*, a configuration in which a probe agrees with multiple goals. While their account focuses on configurations of multiple agreement involving φ-features, we show in section 4.2 how by extending their analysis to larger feature sets including Ā-features, we can straightforwardly derive the EEC. Specifically, an articulated probe on C⁰ causes the probe to enter into Agree with both the subject and the object in EEC-inducing configurations, resulting in an irresolvable conflict for movement. In section 4.3, we examine the environments in which transitive subjects can be extracted without AF marking on the verb, before turning to how AF circumvents the EEC in section 5.

4.1 Relativized probing and Feature Gluttony

Coon and Keine (2018) develop an account of [φ]-feature driven *hierarchy effects*, or configurations containing two DPs whose grammaticality or surface realization depends on the ranking of the two DPs with respect to some grammatical hierarchy, such 1>2>3 for person, or PL>SG for number. The core intuition of their proposal is that such hierarchy effects are the result of having *too much Agree*. Specifically, they argue that ungrammatical structures with respect to a particular hierarchy may arise when a probe participates in more than one valuation relation, copying back features from multiple goals. They refer to this configuration as *feature gluttony*, illustrated in (51).

(51) *Feature Gluttony* (Coon and Keine 2018:4)
      [Probe⁰ [… DP$_1$ … [… DP$_2$ …]]]

Feature gluttony is not itself ungrammatical. Instead, Coon and Keine propose that it is the way the grammar processes such a structure that may lead to ungrammaticality. When it comes to morphological agreement, if the probe in (51) ends up with different φ-values, this may pose a problem for spell-out during the morphological component. If, on the other hand, the probe induces movement, Agree with more than one DP may cause an irresolvable conflict for movement, detailed below.

The first necessary ingredient to Coon and Keine's account is the arrangement of features into geometries (Harley and Ritter 2002; Béjar 2003). An abstract feature geometry is given in (52).

(52) $\begin{bmatrix} x \\ | \\ y \\ | \\ z \end{bmatrix}$

Such geometries encode entailment relations among features; features on lower nodes entail the features on higher nodes. A syntactic object specified for a given feature on a hierarchy is also specified for any

features the first entails. Thus, given the hierarchy in (52), an element with feature [y] has the feature specification [x[y]], and an element with feature [z] has the specification [x[y[z]]].
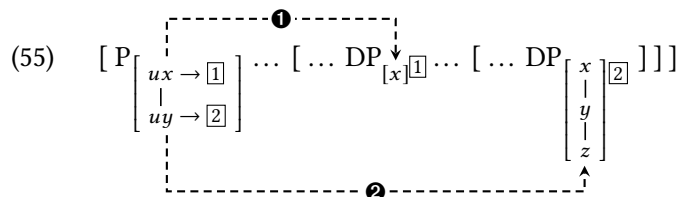
Second, Coon and Keine assume that probes may be articulated to a variable degree. In Deal's (2015) terms, probes may vary as to what kinds of features they are *satisfied by*, that is, what kinds of features have to be matched in order for the probe to stop searching for a goal (Béjar 2003; Béjar and Rezac 2009; Preminger 2014). Specifically, following previous work, Coon and Keine assume that probes also may consist of hierarchically organized *segments*, and that these segments are arranged according to the same geometry as the relevant set of features on goals (Béjar and Rezac 2009). Examples of probes that would interact with the hierarchy in (52) are given in (53).

(53)   *Articulated probes*

    a. $\begin{bmatrix} u\text{x} \end{bmatrix}$ — fully satisfied by any XP bearing [x]

    b. $\begin{bmatrix} u\text{x} \\ | \\ u\text{y} \end{bmatrix}$ — fully satisfied by any XP bearing [y]

    c. $\begin{bmatrix} u\text{x} \\ | \\ u\text{y} \\ | \\ u\text{z} \end{bmatrix}$ — fully satisfied by any XP bearing [z]

Finally, Coon and Keine 2018's formalization of Agree is given in (54).

(54)   Agree (Coon and Keine 2018, 18)
Given a probe P with a hierarchy of unchecked feature segments [uF]

    a.   P searches the closest accessible XP in its domain such that this DP contains feature set [G], with [G] ∩ [F] ≠ ∅;

    b.   the feature hierarchy containing [G] is copied to P;

    c.   [G] is removed from [uF];

    d.   iterate over steps a.–c. until [uF] = ∅ or search fails.

The probing algorithm in (54) states that a probe will agree with the closest accessible XP which matches at least *some* of its segments, (54a). When Agree is established between a probe and a goal, the entire feature geometry that contains the matched segment on the XP is copied over to the probe, (54b), and the matching segments on the probe are deleted, (54c). If there are remaining segments that are not matched, the probe is not satisfied, in Deal's terms, and the remaining segments continue probing, (54d). The schematic in (55) illustrates this system in a case in which multiple Agree relations are established.

(55) $\Big[\,\text{P}_{\begin{bmatrix} u\text{x} \to \boxed{1} \\ | \\ u\text{y} \to \boxed{2} \end{bmatrix}}\; \dots\; \big[\, \dots\, \text{DP}_{[x]\boxed{1}} \dots\, \big[\, \dots\, \text{DP}_{\begin{bmatrix} x \\ | \\ y \\ | \\ z \end{bmatrix}\boxed{2}}\,\big]\,\big]\,\Big]$

     ❶ .... ❷

In (55), an articulated probe P with the unchecked segments [ux[uy]] probes a structure that contains two DPs. The higher DP bears only the feature [x]; the lower DP bears the feature hierarchy [x[y[z]]]. By (54a), P agrees with the higher DP, because that DP matches some of its unchecked segments (namely, [x]). This is step ❶. As a result of Agree being established between P and the higher DP, the feature hierarchy [x]

is copied over to the probe, deleting $[ux]$. In this paper, we follow Coon and Keine in depicting feature copying by means of the identifiers $\boxed{1}$ and $\boxed{2}$. So, "$ux \to \boxed{1}$" encodes that that Agree for segment $[x]$ results in the copying of the feature hierarchy $\boxed{1}$ and to deletion of $[x]$. In (55), this notation means that $[x]$ is copied to the probe and $[x]$ is deleted. Crucially, because the DP lacks $[y]$, the segment $[uy]$ on the probe is not deleted, and it continues to probe, in accordance with (54d). The closest DP that matches $[uy]$ is the lower DP, whose feature structure is $[x[y[z]]]$. Accordingly, $[uy]$ agrees with this DP (step ❷). The entire feature geometry $[x[y[z]]]$ is copied over to the probe, and to deletion of $[uy]$, notated "$uy \to \boxed{2}$."

The Agree relations in the derivation in (56) result in the feature geometries of *both* DPs being copied back to the probe P. The content of P after these relations is represented as in (56). P in (56) is *gluttonous* because it has agreed with, and hence acquired values from, two DPs.

$$(56) \qquad P = \left\{ [x]^{\boxed{1}} \ , \ \begin{bmatrix} x \\ | \\ y \\ | \\ z \end{bmatrix}^{\boxed{2}} \right\}$$

Crucially, feature gluttony only arises when the lower potential goal is featurally *more* highly specified than the higher potential goal with respect to the probe, as was the case in (55) above. If the lower DP has fewer features than the higher DP, or an identical set of features, gluttony does not arise.

First consider (57), an example in which the lower DP has fewer of the features sought by the probe. The higher DP matches both segments on the probe, $[ux]$ and $[uy]$, leading to Agree. The entire feature geometry from the higher DP, $[x[y[z]]]$, is copied over onto the probe. Because both $[ux]$ and $[uy]$ have been matched, both are deleted from the probe. This means no unmatched segments remain on the probe and no second round of probing occurs.

$$(57) \qquad [\ P \begin{bmatrix} ux \\ | \\ uy \end{bmatrix} \to \boxed{1} \ ] \ \dots \ [\ \dots \ DP \begin{bmatrix} x \\ | \\ y \\ | \\ z \end{bmatrix}^{\boxed{1}} \ \dots \ [\ \dots \ DP \begin{bmatrix} x \\ | \\ y \end{bmatrix} \ ]\ ]\ ]$$

Similarly, only a single Agree relationship is established in (58), where both DPs bear identical feature sets, $[x]$. The probe first agrees with the higher DP, leading to copying of $[x]$ and deletion of $[ux]$ from the probe. Even though $[uy]$ remains on the probe, neither DP contains a matching feature $[y]$, and so search fails and no further Agree is established. Following Preminger (2014), a probe with unvalued features must initiate a search operation, but failure to enter into Agree does not cause the derivation to crash. Consequently, the fact that $[uy]$ is left over in (58) is not fatal.

$$(58) \qquad [\ P \begin{bmatrix} ux \to \boxed{1} \\ | \\ uy \end{bmatrix} \ \dots \ [\ \dots \ DP_{[x]}{}^{\boxed{1}} \ \dots \ [\ \dots \ DP_{[x]} \ ]\ ]\ ]$$

With this system in place, we show in the next section how the system of Agree just sketched can be used to derive the Mayan EEC.

4.2 Extension to the EEC

Feature gluttony only arises in configurations in which the lower of two DPs in a probe's search domain contains *more* features that match the probe's unvalued segments than the higher DP, creating the opportunity for an articulated probe to enter into Agree with more than one DP. We contend that exactly such

an environment holds in configurations of would-be ergative extraction in Mayan, albeit with an expanded set of features. We propose that feature gluttony on C⁰ leads to the EEC. Recall that we take the following constraint on Ā-probes to hold in Mayan:

(59)   RELATIVIZED PROBING IN MAYAN Ā-MOVEMENT
       Ā-probes are relativized to the feature [D].

More precisely, we take (59) to mean that the Ā-probe on C⁰ in Mayan searches for both the feature [D] and one of the features involved in Ā-movement, such as [Wh], [Foc], or [Rel]. Here, we notate this set of features together as [Ā]. In a HIGH-ABS configuration, if the higher DP object will have the feature [D], while the lower Ā-subject will have both [D] and [Ā] features, giving rise to gluttony, as shown in (60).

(60)   *Feature gluttony configuration in Ā-probing*
       [C⁰$_{[uD, u\bar{A}]}$ [… DP.Object$_{[D]}$ … [… DP.Subject$_{[D, \bar{A}]}$ …]]]

The key question is how it is possible for C⁰ to probe for both [D] and [Ā] at the same time. We suggest that the key to understanding this property is the ability for features to be arranged into geometries. Specifically, following Baier 2018 on anti-agreement effects cross-linguistically, we propose that the feature [D] and the [Ā] in Mayan are part of *the same* feature geometry, which we label $\mathcal{F}$, shown in (61).

(61)   *Feature geometry $\mathcal{F}$*
$$\begin{bmatrix} \mathcal{F} \\ \diagdown\diagup \\ D \quad \bar{A} \end{bmatrix}$$

According to the geometry in (61), the feature [D] entails [$\mathcal{F}$], as does the feature [Ā]. This means that a constituent bearing the feature [D] does not bear just [D], but is specified as [$\mathcal{F}$[D]]. Likewise, a constituent bearing the feature [Ā] is specified [$\mathcal{F}$[Ā]].[17] XPs bearing these features will therefore match any probe searching for [$\mathcal{F}$]. We propose that the C⁰ head involved in Ā-extraction in Mayan bears a fully articulated $\mathcal{F}$-probe, as shown in (62).
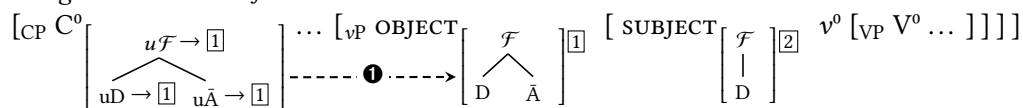
(62)   *Probe on C⁰ in Mayan extraction*
$$\begin{bmatrix} u\mathcal{F} \\ \diagdown\diagup \\ uD \quad u\bar{A} \end{bmatrix}$$

As noted above, the idea that Ā-probes may be relativized to a feature like [D] is found elsewhere in recent literature on special extraction patterns. For example, van Urk (2015) argues that in Dinka, C⁰ probes for [φ] and [Ā] simultaneously, and Erlewine (2018) argues that in the Austronesian language Toba Batak, C⁰ and T⁰ can be bundled into a single head and probe together. Aldridge (to appear) proposes that Austronesian movement to Spec,CP is driven by [φ].

The probe in (62), combined with the assumption that the object moves to a position above the subject, is able to derive the Mayan EEC. Consider first what happens in object extraction contexts, shown in (63).
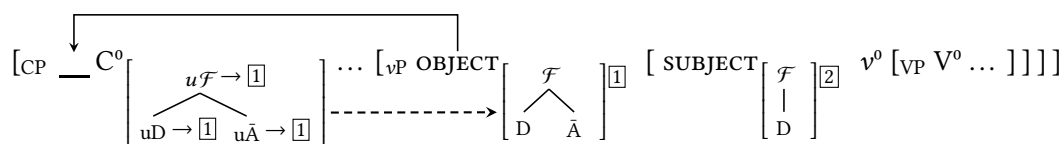
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[17]We assume that the feature sets [D] and [Ā] are also internally structured. See Abels 2012 and Aravind 2018 for proposals regarding the structure of the [Ā] feature set. Though we do not develop this idea further here, note that articulation of Ā-features could provide a means of accounting for variation in different types of Ā-extraction patterns. For example, Stiebels (2006) lists some HIGH-ABS Mayan languages as using AF in *wh*-questions and focus, but not in relativization (see also Heaton et al. 2016 and Deal 2016 for cross-linguistic discussion). Patterns in which ergative extraction is restricted in some, but not all, Ā-contexts could be handled by appealing to more fine-grained specifications in the probe's feature structure.
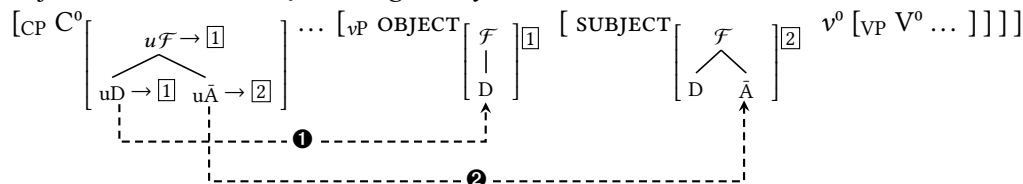
(63) *C⁰ agrees with the object*

$$[_{CP}\ C^0 \begin{bmatrix} u\mathcal{F} \to \boxed{1} \\ uD \to \boxed{1}\quad u\bar{A} \to \boxed{1} \end{bmatrix} \dots [_{vP}\ \text{OBJECT} \begin{bmatrix} \mathcal{F} \\ D\quad \bar{A} \end{bmatrix}\boxed{1}\ [\ \text{SUBJECT} \begin{bmatrix} \mathcal{F} \\ | \\ D \end{bmatrix}\boxed{2}\ v^0\ [_{VP}\ V^0 \dots\ ]]]]$$

Here, the probe on C⁰ searches its c-command domain and enters in an Agree relation with the highest DP, the object. The complete [$\mathcal{F}$] feature geometry is copied over to the probe, as indicated by the identifiers $\boxed{1}$, deleting the matching segments [u$\mathcal{F}$], [uD], and [u$\bar{A}$] on the probe. Because C⁰ has no remaining segments, it stops probing, and does not enter into a second Agree relation with the subject. Across Mayan, $\bar{A}$-elements undergo obligatory movement to the left periphery, commonly taken to be Spec,CP. Therefore, after the Agree relation between C⁰ and the object DP is established in (63), the object moves to Spec,CP, as shown in (64). Object $\bar{A}$-movement is unproblematic, as C⁰ has entered into only one Agree relation in (64), and therefore there is only one DP that can potentially move to Spec,CP.

(64) *$\bar{A}$-movement of the object*

$$[_{CP}\ \underline{\quad}\ C^0 \begin{bmatrix} u\mathcal{F} \to \boxed{1} \\ uD \to \boxed{1}\quad u\bar{A} \to \boxed{1} \end{bmatrix} \dots [_{vP}\ \text{OBJECT} \begin{bmatrix} \mathcal{F} \\ D\quad \bar{A} \end{bmatrix}\boxed{1}\ [\ \text{SUBJECT} \begin{bmatrix} \mathcal{F} \\ | \\ D \end{bmatrix}\boxed{2}\ v^0\ [_{VP}\ V^0 \dots\ ]]]]$$

Consider next what happens in structures where a transitive subject has an $\bar{A}$-feature and the object does not, as shown (65).

(65) *$\bar{A}$-feature located on subject $\longrightarrow$ gluttony*

$$[_{CP}\ C^0 \begin{bmatrix} u\mathcal{F} \to \boxed{1} \\ uD \to \boxed{1}\quad u\bar{A} \to \boxed{2} \end{bmatrix} \dots [_{vP}\ \text{OBJECT} \begin{bmatrix} \mathcal{F} \\ | \\ D \end{bmatrix}\boxed{1}\ [\ \text{SUBJECT} \begin{bmatrix} \mathcal{F} \\ D\quad \bar{A} \end{bmatrix}\boxed{2}\ v^0\ [_{VP}\ V^0 \dots\ ]]]]$$

(step **❶**, step **❷**)

The probe on C⁰ first searches and enters in an Agree relation with the object DP (step **❶**). The complete [$\mathcal{F}$] feature geometry of the object is copied over to the probe (as indicated by the identifier $\boxed{1}$) deleting the matching segments [u$\mathcal{F}$] and [uD] on the probe. Because the object lacks [$\bar{A}$], that segment remains on the probe, and another round of search is initiated (step **❷**). The probe finds matching a matching [$\bar{A}$] feature on the subject DP, and the entire feature geometry of the subject is copied over (as indicated by the identifier $\boxed{2}$). The probe now has no remaining segments, and halts probing.[18]

The configuration in (65)—in which a lower element contains more of the features sought by the probe than a higher element—gives rise to feature gluttony. We propose that the ungrammaticality of ergative extraction in the structure in (65) results from conflicting requirements on movement that are brought about by the fact that the C⁰ has entered into Agree relationships with two DPs. Specifically, following Coon and Keine in their derivation of PCC effects, we invoke two independently-motivated general constraints on movement: *Best Match* and the *Attract Closest*. *Best Match* requires movement of the DP that matches the most features of the probe. We assume that this is calculated by comparing the feature sets left on the probe after Agree has concluded. For the scenario under discussion here, the probe on C⁰ will have two sets of features, one from the object and the other from the subject, as shown in (66).

---

[18]Note that even if there were remaining segments on the probe, the probe has hit a phase boundary at vP, and therefore the search space is exhausted. With respect to the extraction of transitive *objects* in LOW-ABS languages, we assume that (as in any account of cyclic $\bar{A}$-movement) these must raise to the phase edge in order to extract and no extraction problem will arise.

(66)   *Features on C⁰ after (65)*

$$C^0 = \left\{ \begin{bmatrix} \mathcal{F} \\ | \\ D \end{bmatrix} \boxed{1} , \begin{bmatrix} \mathcal{F} \\ \diagup\diagdown \\ D \quad \bar{A} \end{bmatrix} \boxed{2} \right\}$$

Because the subject's feature set matches three segments of the probe, while the object's feature set only matches two, the subject qualifies as the Best Match for C⁰. Precedents for this constraint include van Urk and Richards' (2015) *Multitasking*; Coon and Bale (2014), van Urk (2015) and Oxford's (to appear) *Best Match*; and Lahne's (2012) *Maximize Matching* (building on Chomsky 2000, 2001). The second constraint, *Attract Closest* (also known as the *Minimal Link Condition* or *Closest*), dictates that the probe move the highest or *closest* eligible DP (e.g., Chomsky 1995; Kitahara 1997; Müller 1998; Fitzpatrick 2002; Rackowski and Richards 2005). In the scenario in (65), the object DP is closer to Spec,CP than the subject DP, and thus qualifies as the best candidate for this constraint.

These two constraints are satisfied together when a probe agrees with a single goal. This is the case in Mayan when the object bears Ā-features. However, in feature gluttony configurations, in which a single probe agrees with two DPs, the constraints give rise to conflict. This is the case in Mayan when the transitive subject bears Ā-features and the object does not. On the one hand, Best Match requires Ā-movement of the lower DP (the subject), because it matches all three features on C⁰. On the other hand, Attract Closest requires Ā-movement of the higher DP (the object), because it is closer to Spec,CP.

Following Coon and Keine, we take these two constraints to be *unranked* and *inviolable.* This give rise an irresolvable conflict for transitive subject movement. First, movement the higher DP to Spec,CP satisfies Attract Closest, but it violates Best Match. Second, movement the lower DP satisfies Best match, but it violates Attract Closest. Third, given that overt Ā-movement is required in Mayan, moving neither DP to Spec,CP violates both constraints. Finally, assuming that C⁰ projects only one specifier, moving both DPs to Spec,CP is impossible. Because the constraints Best Match and Attract Closest are inviolable, there is simply no way to proceed in the structure, shown in (67). This renders the structure ineffable, deriving the restriction on Ā-extracting transitive subjects.

(67)   *Ā-feature located on subject $\longrightarrow$ gluttony*
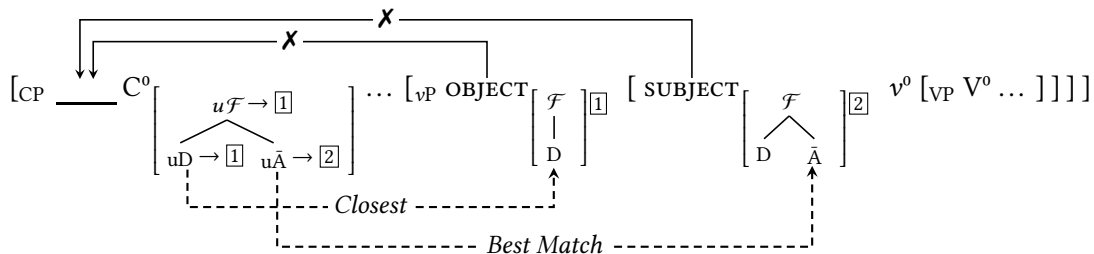
Stepping back, the analysis just detailed derives the fact that *locality* is the core cause of the EEC. First, because the object intervenes between C⁰ and the subject, it is always available for probing from C⁰. Second, when C⁰ agrees with both the subject and object, the object is more local to Spec,CP, and therefore blocks movement of the subject. In the next section, we show how our analysis in terms of relativized probing and feature gluttony can derive the exceptions to the EEC discussed in section 3.1 above.

4.3   How to circumvent the EEC

Our account of the Mayan extraction restriction is based on two ingredients: (i) a locality violation caused by the object c-commanding the subject; and (ii) the relativization of the Ā-probe to search for [D] and [Ā] features simultaneously. As discussed in section 3.1 above, our account thus predicts that transitive

subject Ā-extraction out of a clause that does *not* contain an intervening DP object will be licit. It was shown above that this prediction is borne out in two different environments, summarized here in (68), repeated from (37).
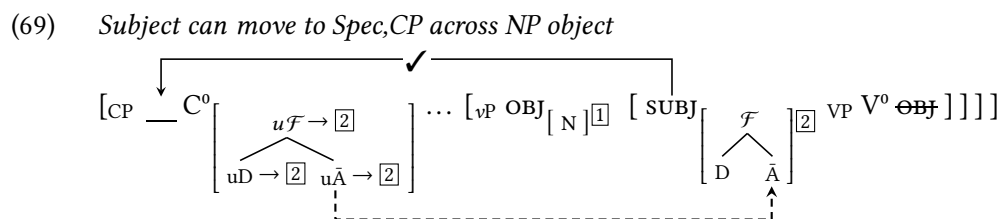
(68) *Environments in which EEC lifted in* HIGH-ABS *languages*

    a.   object is a bare NP   (§3.1.1)

    b.   object is a reflexive or extended reflexive   (§3.1.2)

In section 3.1 above we argued that what each of these environments share in common, is the *absence of an interpreted DP* intervening between the probe on C⁰ and the transitive subject. Below, we briefly sketch how our analysis, formalized in terms of relativized probing and feature gluttony, can account for the fact that ergative subject extraction out of a canonical transitive clause is exceptionally well-formed in exactly these environments.

4.3.1 NP complements

The current account predicts that if the complement noun phase is an NP, not a DP, it should not be a viable target for an Ā-probe, even if it occupies a structurally higher position than the subject. The lower DP subject, however, will still be an accessible goal to the probe on C⁰. Recall that this prediction is confirmed by the behavior of bare NP objects in K'iche', which do not block the Ā-movement of the ergative subject (Aissen 2011). Ergative extraction is possible despite the fact that the NP objects occupy the same high structural position as full DP objects. These NPs obligatory lack a determiner, and a transitive form accompanies ergative subject Ā-movement; AF is absent (see example (39) on page 14).

Recall that the fact that bare NP objects can still trigger Set B/absolutive plural morphology crucially indicates that such NPs have undergone movement to a position above the subject where they are accessible to the φ-probe on Infl⁰. Nevertheless, the structurally reduced NP object does not intervene for the purposes of ergative subject Ā-movement. This is entirely expected under the present account. Consider the structure in (69), where the object lacks a [D]-feature.

(69) *Subject can move to Spec,CP across NP object*

$$[_{CP} \underline{\quad} C^0 \begin{bmatrix} u\mathcal{F} \to \boxed{2} \\ uD \to \boxed{2} \quad u\bar{A} \to \boxed{2} \end{bmatrix} \dots [_{vP} \text{OBJ}_{[\,N\,]\boxed{1}} [\text{SUBJ} \begin{bmatrix} \mathcal{F} \\ D \quad \bar{A} \end{bmatrix}_{\boxed{2}} \text{VP } V^0 \text{ } \sout{\text{OBJ}}]]]]$$

The probe on C⁰ searches its c-command domain and, in this case, ignores the object NP, because that phrase does not have a feature that matches any segments of the C⁰-probe; it agrees only with the subject DP. The complete [$\mathcal{F}$] feature geometry is copied over to the probe, as indicated by the identifiers $\boxed{2}$, deleting the matching segments [u$\mathcal{F}$], [uD], and [uĀ] on the probe. Because C⁰ has no remaining segments, it stops probing. Because only a single Agree relationship has been established (i.e. no gluttony), there is no problem with extracting the Ā-subject.
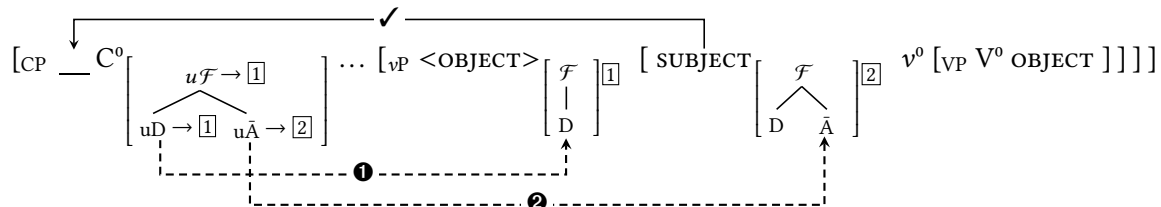
4.3.2 Reflexive and extended complements

Finally, as discussed in section 3.1.2, ergative subject Ā-extraction from a transitive clause is well-formed when the subject binds the possessor of the object, in reflexive and extended reflexive constructions (e.g. Craig 1977; Mondloch 1981; Ordóñez 1995; Aissen 1999, 2011; Pascual 2007; Coon and Henderson 2011; Coon et al. 2014), shown in (42) and (43) on page 16 above. Just as with bare NP complements, extended reflexive objects may trigger Set B plural agreement, providing evidence that they must move above the subject

in order to be accessible to the φ-probe on Infl⁰. Unlike their bare NP counterparts, however, extended reflexive objects may be full DPs—not structurally reduced NPs (see example (45) on page 17).

We contend that the reflexive and extended reflexive objects do in fact move above the subject, like the NP objects above. However, while the bare NP objects were simply ignored by the probe on C⁰, by virtue of being DPs, these (extended) reflexive objects *are* licit targets for the articulated probe on C⁰, as shown in (70).[19] We propose that the ability of the subject to extract is directly connected to obligatory reconstruction for binding, detailed below.

(70)   *Reconstruction for reflexive binding feeds subject extraction*

$$[_{CP} \underline{\quad} \; C^0 \begin{bmatrix} u\mathcal{F} \to \boxed{1} \\ uD \to \boxed{1} \quad u\bar{A} \to \boxed{2} \end{bmatrix} \ldots [_{vP} <\text{OBJECT}> \begin{bmatrix} \mathcal{F} \\ | \\ D \end{bmatrix} \boxed{1} \; [\text{ SUBJECT} \begin{bmatrix} \mathcal{F} \\ D \quad \bar{A} \end{bmatrix} \boxed{2} \; v^0 \; [_{VP} V^0 \text{ OBJECT }]]]]$$

(with arcs marked ✓, ❶, ❷ indicating the probing relations)

In (70), the articulated probe on C⁰ first searches and enters in an Agree relation with the object DP (step ❶). The complete [$\mathcal{F}$] feature geometry of the object is copied over to the probe (as indicated by the identifiers $\boxed{1}$) deleting the matching segments [u$\mathcal{F}$], [uD] on the probe. Because the object lacks [$\bar{A}$], that segment remains on the probe, and another round of search is initiated (step ❷). The probe finds a matching [$\bar{A}$] feature on the subject DP, and the entire feature geometry of the subject is copied over (as indicated by the identifier $\boxed{2}$). The probe now has no remaining segments, and halts probing.

So far this is the normal calculus for C⁰-probing in a transitive clause with two DP arguments (cf. (65) above). However, we propose that reconstruction of the object means that the object no longer unambiguously c-commands the subject and this is what allows the subject to extract from a full transitive clause. Specifically, at the time the grammar checks to see if Attract Closest is satisfied by moving the subject to Spec,CP, the object does not unambiguously c-command the subject: one copy of the object c-commands the subject (the higher copy, in angled brackets), and one copy is c-commanded by the subject (the lower interpreted copy). The two conflicting sets of c-command relations between the subject and object DP cause Attract Closest to favor neither DP; since the subject is favored by Best Match, the subject extracts.[20]

With regards to reflexive objects, we noted in section 3.1.2 that the syntactic position of reflexives and their categorical status is less clear than extended reflexives. Unlike English, these elements do not inflect for number and verbal number agreement cannot be used as a diagnostic for position of a reflexive object. Furthermore, reflexive objects do not appear to be able to co-occur with elements associated with D⁰ (i.e. determiners, classifiers). This may be evidence that they are structurally reduced, in which case they could receive the same treatment as bare NP objects in section 4.3.1. Alternatively, if reflexives are full DPs, we can attribute the possibility of transitive subject Ā-movement in both cases to the binding relationship established between the subject and object, as in (70).

---

[19]Note that the higher copy of the object *is* visible to the φ-probe on Infl⁰; a proposal in which the Ā-probe on C⁰ simply could not access the higher copy of the object would be unprincipled.

[20]Alternatively, it could be that reconstruction renders the derived position of the object a trace (e.g. Chomsky 1993; Bobaljik 1995, 2002; Hornstein 1995), causing it to not act as an intervener. Exceptionally well-formed ergative subject Ā-extraction in reflexive and extended reflexive contexts would then follow from the idea that the evaluation of Attract Closest does not consider traces. Note however that the higher copy must still be accessible to the φ-probe on Infl⁰ in order to capture the availability of Set B agreement.

5 How AF circumvents the EEC

Finally, we turn to the Agent Focus construction and how it circumvents the EEC. To foreshadow, we propose that the AF morpheme is the spell-out of a special v^0 head (v^0_{AF}). While regular transitive v^0 (v^0_{TV}) triggers raising of the object above the subject in HIGH-ABS languages, v^0_{AF} does not. As a result, the movement conflict described in section 4 does not arise.

While some properties of AF are shared across the family, there are also important points of variation, which we attribute to differences in the details of the features on v^0_{AF}. We begin here in section 5.1 with a short review of the properties that a successful account of AF must handle, and sketch an analysis of what the v^0_{AF} heads have in common. We turn to the details of the Q'anjob'alan AF construction in 5.2, followed by K'ichean Proper in 5.3.

5.1 Shared AF properties

The core properties of AF to be accounted for are repeated in (71).

(71)   *Characteristics of Mayan Agent Focus*
   a.   AF is used when the transitive subject is Ā-extracted;
   b.   AF constructions involve dyadic predicates in which neither subject nor object DP is oblique;
   c.   Set A (ergative) φ-marking is absent;
   d.   a special Agent Focus suffix appears on the stem;
   e.   if a status suffix appears, it is an intransitive status suffix.

As noted at the outset, this section focuses on AF in languages of the K'ichean Proper and Q'anjob'alan branches of the Mayan family. This is due first to the fact that most recent work on AF and the EEC focuses on these languages, and second to the observation that for some other Mayan languages, constructions used to extract agents appear to be *intransitive* (e.g. Poqom and Q'eqchi'; see §2.3 above). While these antipassive constructions are interesting in their own right, given the independent extractability of intransitive subjects, they do not pose a puzzle for how the EEC is circumvented.

Q'anjob'al and K'iche' AF constructions are shown in (72).

(72)   *Agent Focus*
   a.   A   naq Xhwan max-ach kol-**on**-i?
        FOC CLF Xhwan PFV-B2s help-AF-ITV
        '*Xhwan* helped you.'   (Q'anjob'al; Mateo Toledo 2008, 334)
   b.   Are ri   sis   x-in-ti'-**ow**-ik.
        FOC DET coati PFV-B1s-bite-AF-ITV
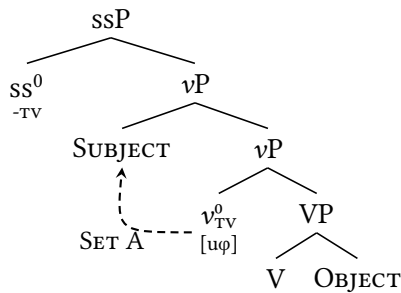   '*The coati* bit me.'   (K'iche'; Can Pixabaj 2004, 55)

Both constructions in (72) share all of the properties in (71) above; AF is used only when the transitive subject is Ā-extracted (here for focus), and neither subject nor object appears demoted. Focusing on the stems themselves, we find that Set A marking is absent entirely, an AF suffix appears on the stem, and the intransitive status suffix appears stem-finally.

An important difference, discussed in section 2.3 above, concerns *which* DP the Set B morpheme co-indexes, repeated in the summary table in (73). In Q'anjob'alan, the Set B morpheme consistently tracks the object. In K'ichean Proper, on the other hand, Set B is hierarchically governed. In (72b) Set B tracks the 2nd person object, but Set B may also track the subject if it is higher ranked, discussed further in section 5.3 below.
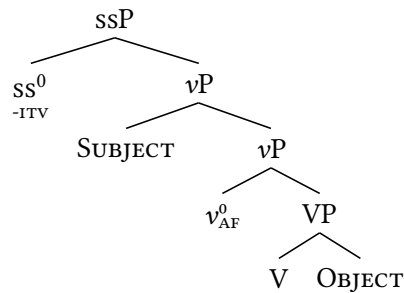
(73)   *AF agreement patterns*

| Set B = object | e.g. Q'anjob'al, Chuj, Popti' |
| Set B = variable | e.g. K'iche', Kaqchikel, Tz'utujil |

As foreshadowed above, we propose that the AF morpheme—i.e. *-on* in (72a) and *-ow* in (72b)—is the overt morphological realization of a v^0 head (v^0_{AF}). Like v^0_{TV}, it introduces the transitive subject in its specifier position. However *unlike* the transitive subject, it does not enter into Agree with the subject, accounting for the absence of Set A agreement. Setting aside for now the differences in behavior of the object, transitive and Agent Focus clauses are diagrammed in (74) and (75).

(74)   *Transitive*

```
            ssP
          /     \
       ss^0      vP
       -TV     /    \
         SUBJECT     vP
            ↑       /    \
         SET A   v^0_TV   VP
                 [uφ]    /   \
                        V   OBJECT
```

(75)   *Agent Focus*

```
            ssP
          /     \
       ss^0      vP
      -ITV     /    \
         SUBJECT     vP
                   /    \
                v^0_AF   VP
                        /   \
                       V   OBJECT
```

Following Coon et al. 2014, we take the choice of status suffix to be determined based on the direct selectional relationship with vP. Specifically, the transitive form of the status suffix is conditioned by merge with ergative/Set A-assigning (transitive) vPs, while the intransitive suffix is conditioned by non-ergative/Set A-assigning vPs. The latter category includes intransitive verbs in the languages in question, but also the Agent Focus vP.
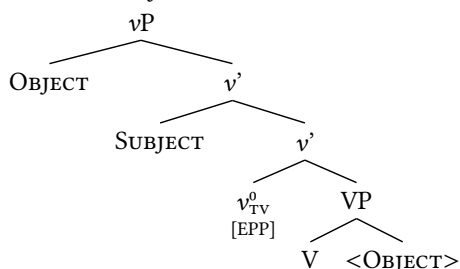
The picture so far accounts for several of the AF properties in (71) above; it connects the appearance of a special suffix (71d) to the absence of Set A morphology (71c) and the choice of an intransitive status suffix (71e). Recall, however, that the EEC does not specifically ban Set A/ergative-marked DPs from extracting (§3). The crucial question thus becomes accounting for the properties in (71a)–(71b): what about the AF construction permits the transitive subject to Ā-extract from a regular dyadic predicate?[21]
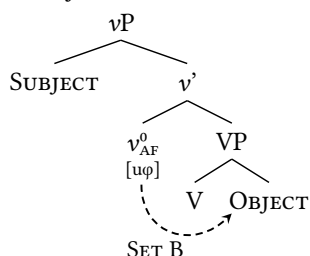
5.2 Q'anjob'alan

Our analysis of AF in Q'anjob'alan follows in broad strokes the account in Coon et al. 2014: Q'anjob'alan v^0_{AF} differs from v^0_{TV} both in not triggering Set A subject marking, as in (75), but also in having a φ-probe which enters into Agree with the transitive object, creating the Set B/absolutive morpheme. While v^0_{TV} triggers raising of the transitive object to a position above the subject (§2.2), v^0_{AF} lacks an [EPP] feature and the object remains low.

---

[21]An important puzzle that we cannot fully address is the source of the property in (71a): the fact that the AF construction is limited to environments where the Ā-extraction of the transitive subject would otherwise be illicit. That is, while our account explains how AF permits the otherwise-impossible extraction of the subject, it does not explain why this option is not more widely available, even in the absence of subject Ā-extraction. The fact that AF is limited to constructions where extraction would otherwise be banned has led previous authors to consider a type of Last Resort mechanism (Ordóñez 1995; Coon et al. 2014; Assmann et al. 2015). We adopt this basic line of account, setting aside the larger question of how such mechanisms should be understood as a topic for future work.

(76) *Transitive object raises*

```
                vP
         ┌──────┴──────┐
      OBJECT          v'
              ┌────────┴────────┐
           SUBJECT             v'
                       ┌────────┴────────┐
                    v⁰_TV               VP
                    [EPP]        ┌───────┴───────┐
                                 V          <OBJECT>
```

(77) *AF object remains low*

```
                vP
         ┌──────┴──────┐
      SUBJECT         v'
              ┌────────┴────────┐
           v⁰_AF               VP
           [uφ]         ┌───────┴───────┐
            ┆           V          OBJECT
            ┆          ↗
          SET B ┄┄┄┄┄┄┘
```

The source of Set B morphology thus differs in Q'anjob'alan transitive and AF clauses. In a transitive clause, the object raises above the subject and from this position is accessible to the high φ-probe on Infl⁰, as in HIGH-ABS languages more generally. In an AF clause, the object remains low, and v^0_{AF} has the φ-probe responsible for triggering the Set B morpheme.

The relevant features on v^0_{TV} and v^0_{AF} in Q'anjob'alan are summarized in (78). In both transitive and AF constructions, v^0 is responsible for externally merging the transitive subject, represented as $[\theta]_{SUBJ}$; only in the transitive construction does v^0 also enter into φ-Agree with the subject, triggering the Set A morpheme. Transitive and AF v^0 crucially differ in their treatment of the object: v^0_{TV} has an [EPP] feature which causes the object to raise, but does not have a φ-probe. In a transitive clause, the Set B marking comes from the high probe on finite Infl⁰ (HIGH-ABS), as discussed in section 2.2 above. In contrast, v^0_{AF} does have a φ-probe triggering a Set B morpheme, and the object remains in situ.[22]

(78) *Transitive and AF* v⁰ *in Q'anjob'alan*

	v^0_{TV}	v^0_{AF}
$[\theta]_{SUBJ}$	✓	✓
$[u\phi]_{SUBJ}$ (Set A)	✓	✗
$[EPP]_{OBJ}$	✓	✗
$[u\phi]_{OBJ}$ (Set B)	✗	✓

A couple of further notes are in order here. First, under the proposal that Set B is triggered by different heads in transitive and AF clauses, one might wonder why the form of Set B remains constant, as in the transitive and AF forms in (79).

(79) a. Max-**ach** y-il-a'.
     PFV-B2S A3S-see-TV
     'She saw you.'

   b. Maktxel max-**ach** il-on-i?
     who   PFV-B2S   see-AF-ITV
     'Who saw you?'   (Q'anjob'al; Coon et al. 2014)

While we do not take a stance on the nature of Set B marking across the family, in Q'anjob'alan languages Set B morphemes are morphophonological clitics. In clauses containing an overt TAM morpheme, the Set B morpheme appears attached high, as in (79). But in clauses lacking overt aspect marking, as with the non-verbal predicates in (80), the Set B morpheme appears after the predicate, written as a free-standing morpheme (orthographic <h> represents the absence of an initial glottal stop).

---

[22]Importantly, in an AF clause Infl⁰ does not trigger a (second) Set B clitic. One possibility is that the φ-probe on Infl⁰ in an AF clause is optional, and simply not merged (see e.g. Kalin 2018). Alternatively, it is possible that Infl⁰ *does* enter into Agree with the higher subject in an AF clause, but that a morphological constraint prevents the spell-out of two Set B morphemes. Some support for this view will be found in independently-needed morphological constraints on multiple Set B morphemes in K'ichean (§5.3).

(80) a. Chot-an **hach** ayoq.
          sitting B2S DIR

          'You are sitting down.'   (Q'anjob'al; Mateo Toledo 2008, 54)

      b. Man kuywom-oq **hach**.
          NEG student-IRR B2S

   'You are not a student.'   (Q'anjob'al; Mateo Toledo 2008, 69)

Following Coon et al., we take these Set B morphemes to be syntactic pronominal clitics, triggered by φ-Agree with a probe (see e.g. Kramer 2014 for discussion). Given that we are dealing with a case of pronominalization, the fact that the φ-probes on both Infl⁰ (in a transitive) and v^0 (in AF) trigger identical forms is unsurprising.

Second, as discussed in Coon et al., the proposal that v^0_{AF} has a Set-B-generating φ-probe offers an immediate explanation for an otherwise puzzling fact in Q'anjob'alan languages: the AF morpheme is obligatory in *nonfinite embedded transitives*. Recall from section 2.2 above that many HIGH-ABS languages disallow nonfinite embedded transitives altogether. In Q'anjob'alan, embedded transitives are possible, but only with the AF morpheme. This strategy is entirely expected under this account, in which v^0_{AF} provides a low source for Set B morphology.

(81) Chi uj   [hach y-il-**on**-i   ].
      IPFV be.able.to B2S A3S-see-AF-ITV

      'She can see you.'   (Q'anjob'al; Coon et al. 2014, 180)

Finally, and most relevant to the discussion at hand, the fact that the Set B morpheme remains low offers an immediate account of the ability for an Ā-transitive subject to extract from an AF clause. As illustrated in (82), the articulated probe on C⁰ will find the high subject DP. The subject will fully satisfy the probe, and probing will halt, permitting the subject to Ā-extract.

(82) *Probe on C⁰ finds subject in Spec,vP*
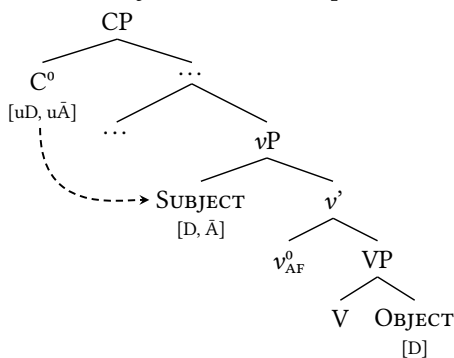
In sum, the AF corner of Q'anjob'alan behaves as a LOW-ABS language in permitting the object to remain low, and in providing a low source for the generation of the Set B clitics. In turn, this results in the lack of an extraction problem for the ergative subject—again, as in LOW-ABS languages. This system further accounts both for the consistent pattern of object-triggered Set B morphology, as well as for the fact that the AF morpheme is used in nonfinite embedded clauses, where Set B would otherwise be unavailable.

5.3 K'ichean

We now turn to AF in the K'ichean Proper branch. Recall that like in Q'anjob'alan, AF clauses lack Set A, have a special AF suffix, and appear with an intransitive status suffix (when one is present), accounted

for with the basic structure in (75) above. However, we find two important differences between K'ichean Proper and the Q'anjob'alan AF discussed just above. First, Set B person marking indexes the highest-ranked DP on the hierarchy in (83), repeated from (24) above.

(83)   1st person / 2nd person ≫ 3rd person plural ≫ 3rd person singular

A pair illustrating combinations of 1st and 3rd person singular DPs is provided in (84). Note that Set B indexes the 1st person DP regardless of whether it is the subject (84a) or the object (84b).

(84)   a.   In   x-**in**-il-ow   le   achi.
                 1PRON PFV-B1S-see-AF DET man
                 '*I* saw the man.'
         b.   Le   achi x-**in**-il-ow   in.
                 DET man PFV-B1S-see-AF 1PRON
                 '*The man* saw me.'   (K'iche'; Davies and Sam-Colop 1990, 523)

Second, while in Q'anjob'al the AF morpheme is required in order to embed a nonfinite transitive clause, embedded transitives in K'ichean Proper are simply ungrammatical and a detransitivized verb form must be used instead (see (14) and discussion in §2.2 above).

   Our analysis of AF in this group of languages again relies on differences in the specification of the v^0_{AF} head, shown in the column added to the comparison table in (85). Specifically, K'ichean AF is like Q'anjob'alan AF—and different from full transitive v^0 in both subfamilies—insofar as v^0_{AF} does not enter into φ-Agree with the transitive subject merged in its specifier position (row 2). However, following the proposal in Levin 2018, K'ichean v^0_{AF} is closer to v^0_{TV} insofar as it *does* trigger raising of the object ([EPP]$_{OBJ}$ in row 3), but does not enter into φ-Agree with the object (row 4).

(85)   *Transitive and AF v⁰ in Q'anjob'alan*

	v^0_{TV} (Q'an. & K'ich.)	v^0_{AF} (Q'an.)	v^0_{AF} (K'ich.)
[θ]$_{SUBJ}$	✓	✓	✓
[uφ]$_{SUBJ}$ (Set A)	✓	✗	✗
[EPP]$_{OBJ}$	✓	✗	✓
[uφ]$_{OBJ}$ (Set B)	✗	✓	✗

The proposed feature content of the K'ichean v^0_{AF} head immediately provides a path to account for the two facts above. First, because K'ichean v^0_{AF} lacks [uφ]$_{OBJ}$ and is therefore not able to create a Set B/absolutive morpheme, it is unsurprising that it is unavailable as a strategy for embedding a full transitive in a nonfinite environment. As noted above, we abstract away from whether this is due to nominal licensing triggered by φ-Agree, or some other more general requirement that Set B morphology be available—either way, it is clear that the v^0_{AF} morpheme in K'ichean is not a viable alternative for Set B marking the way it is in Q'anjob'alan.

   Second, raising of the object places the object in a specifier of v^0_{AF}. Following the proposal in Levin 2018, the fact that both subject and object occupy specifiers of the AF *v*P, and neither DP has entered into φ-Agree with v^0 (as evidenced by the absence of Set A), results in a configuration in which both the subject and the object are accessible to the Set B-generating φ-probe on Infl⁰, as illustrated in (86). This provides exactly the environment needed to account for the hierarchy effect.

(86) *AF: SUBJ and OBJ equidistant to Infl⁰*
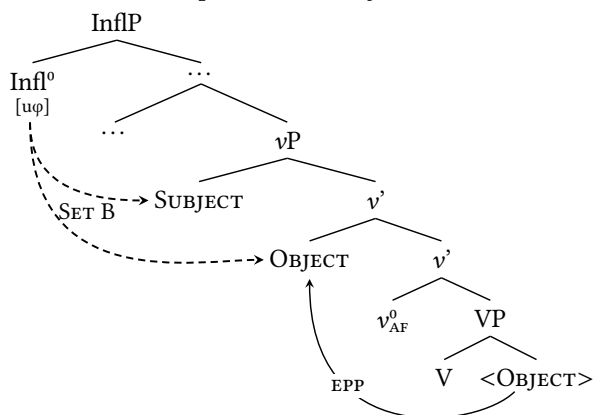
Concretely, we propose that the subject and object DPs in K'ichean AF are *equidistant* to higher functional projections. There are arguments in the literature both for (Reinhart 1981; Ura 1996; Chomsky 2000; Hornstein 2009; Oxford to appear) and against (Chomsky 2001; Hiraiwa 2001; Doggett 2004) equidistance of multiple specifiers, and we are unable to address these in detail here. This account of the K'ichean hierarchy effect builds specifically on work by Oxford (to appear), who employs a structure comparable to that in (86) for the transitive paradigm across the Algonquian family. The consistent equidistance of subject and object DPs, combined with an articulated probe on Infl⁰, derives the robust hierarchy effects across those languages.

Oxford cites Richards' (2001) suggestion that multiple specifiers created by A-movement results in equidistance. Importantly for the account here, multiple A-specifiers are equidistant only in the *absence* of inherent Set A agreement between v^0 and the thematic subject. In transitives, the v_{TV}^0 enters into Agree with the subject in its specifier position; we suggest that this Agree/feature-sharing relation creates a clear link between v_{TV}^0 and the subject. As a result, the A-moved object unambiguously c-commands the subject, as in (87).[23]

(87) *Transitive: OBJ≫SUBJ*

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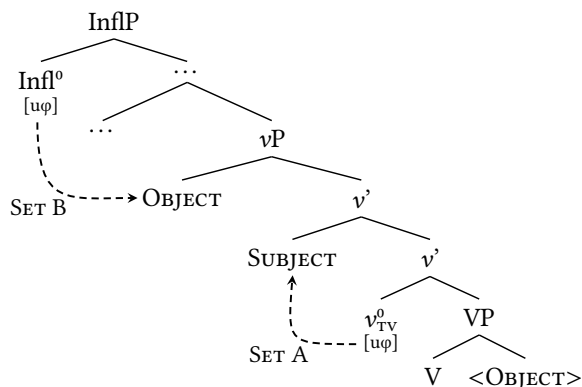
[23]One way of implementing this idea would be through the timing of Merge and Agree. Suppose that the φ-probe on v_{TV}^0 must probe that head's specifier *as soon as possible*, that is, as soon as there is a DP merged with v_{TV}^0 (see e.g. Rackowski 2002). If this is the case, then there will always be a recoverable record of which DP has merged first in (87): since the subject has valued the φ-probe on v_{TV}^0, it merged first. Now, suppose further that the constraint Attract Closest is able to use such information in the calculation of relative distance of two goals. Such a state of affairs would lead to the subject in (87) being unextractable.

Alternatively, it could be the case that the DP object in a transitive is actually attracted by a higher functional project, above the vP containing the subject, ensuring an asymmetric c-command relationship in transitives. We do not know of positive evidence for this, and so in order to restrict variation fo the features in v^0, we do not pursue this option here.

Note that Algonquian consistently lacks inherent ergative agreement, compatible with the proposal that the absence of inherent agreement results in equidistance of multiple v^0 specifiers. This proposal provides a means to understand why hierarchy effects are language-wide in Algonquian, but confined to the AF corner of K'ichean. We offer a concrete account of the K'ichean heirarchy effect in appendix B, focusing here on main question of this section: what about the K'ichean AF construction permits the transitive subject to extract?

While in Q'anjob'alan AF the object remained low, here the object is attracted to a specifier of vP. Crucially, the same equidistance of subject and object used to derive the hierarchy effect just above offers an immediate account of the extractability of the agent DP. The relevant configuration with the Ā-probe on C^0 is shown in (88).

(88)   *Probe on C^0 finds both arguments in Spec,vP*
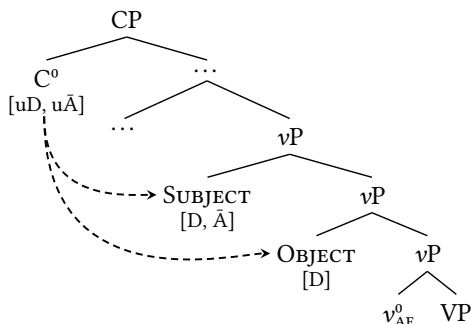
Recall from section 4.2 that the EEC in transitives is derived through a conflict between Attract Closest and Best Match. Here, because the subject and object DP are equidistant to the articulated probe on C^0, Best Match prefers the more high-specified subject, permitting extraction to Spec,CP.

6   Conclusion and cross-linguistic outlook

6.1   Summary

This paper reexamined the empirical landscape of the Ergative Extraction Constraint found in a subset of Mayan languages, and offered a proposal for its source. Specifically, we argued that the EEC is the result of a locality problem, in which a DP object intervenes between the Ā-probe on C^0 and the ergative subject. Following previous work on Mayan, DP objects in a subset of languages raise to a position above the subject in order to be targeted by a φ-probe on Infl^0. Despite reported variation in the relevance of person features to the extractability of ergative subjects, we argued that this variation is only apparent, and connects to independent differences in the languages in question (§2). The proposal that *locality* is the source of the extraction problem received further support from environments in which properties of the object—i.e. a lack of a D^0 head, or a need to be bound by the subject—permitted ergative subjects to extract from full transitive clauses (§3). The relevance of the nature of the object to the extractability of the ergative subject, as well as evidence that the object *may* enter into Agree even when the subject extracts, provided evidence against the applicability of previous accounts which rely either on a problem of object licensing (Coon et al. 2014; Assmann et al. 2015), or on properties of ergative subjects (Deal 2016; Polinsky 2016). While nothing in our proposal—which focuses specifically on the EEC in Mayan—rules out the possibility that features of ergative subjects may underlie extraction restrictions in other languages, here we provided evidence that this cannot be the source of the EEC in Mayan.

We argued further that this locality problem arises specifically because the probe responsible for Ā-extraction is a composite probe, relativized to search for both [D] and [Ā] features simultaneously. This

was formalized in section 4 by adopting a specific implementation of Cyclic Agree in which a single probe may enter into Agree with more than one goal in its c-command domain, so long as unvalued features remain to instigate probing. Extending Coon and Keine's (2018) analysis of hierarchy effects in the domain of φ-features into a larger set of features ([$\mathcal{F}$], following Baier 2018), we proposed that the offending configurations in Mayan involve constructions in which the lower DP (the Ā-subject) has *more* of the probe's features than the higher DP (the DP object). Mirroring the derivation of PCC effects in inverse configurations, we proposed that these multiple Agree relationships cause an irresolvable conflict for movement.

We next turned to the special Agent Focus constructions used to circumvent the EEC. Again following previous work in Mayan, we proposed in section 5 that the AF morpheme is a particular instantiation of v^0, v^0_{AF}, which differs from transitive v^0_{TV} in important respects. What AF constructions have in common—as expected on our account—is that they solve the locality problem by *not* causing the object to raise above the subject. However, the exact features on v^0_{AF} vary across the family, in a way that we connected directly to the independent variation observed in AF (§2). We adopted the general proposal for Q'anjob'alan AF in Coon et al. 2014, in which v^0_{AF} does not cause the object to move, and instead generates the Set B morpheme low, on par with regular transitives in LOW-ABS languages; this accounts for (i) the fact that Set B consistently targets the object in Q'anjob'alan, and (ii) the use of v^0_{AF} in nonfinite environments which would otherwise lack a source for Set B. Our account of K'ichean AF drew on the analysis in Levin 2018, in which v^0_{AF} *does* cause raising of the object, but to a vP specifier which does not asymmetrically c-command the subject, accounting for the hierarchy effects found in Set B marking in these languages. Both the Set B hierarchy effect and the availability of extraction are directly connected to the fact that higher functional probes target both subject and object DPs simultaneously; as a result, neither is favoured by Attract Closest. This gives rise to the φ-hierarchy effect for the Infl⁰ probe, and the extractability of the more featurally-specified Ā-subject by the C⁰ probe. Crucially, in AF in both Q'anjob'alan and K'ichean Proper, the DP object no longer intervenes for subject extraction, accounting for the use of this construction to circumvent the EEC.

6.2 Cross-linguistic outlook

The present paper focuses specifically on the EEC in the Mayan language family. While we leave it as an open question whether it is appropriate to extend a similar account to extraction restrictions elsewhere, we discuss some possible avenues for cross-linguistic comparison here. Specifically, as noted above, our account relied on two special properties argued to be present in Mayan: (i) the high position of the object in a regular transitive clause in HIGH-ABS languages, and (ii) a mixed probe on C⁰, which probes for [Ā] and [D] simultaneously.

We suggest that the high position of the object connects directly to the fact that ergative extraction asymmetries appear in a *subset* of morphologically ergative languages (see e.g. Comrie 1978; Dixon 1979, 1994 and Larsen and Norman 1979; Aissen 2017b on Mayan specifically). On the account here, the Mayan EEC is parasitic on morphological ergativity: objects in HIGH-ABS languages raise to a high position from which they can enter into Agree with Infl⁰, while agreement with transitive subjects occurs in situ (i.e. inherent ergative agreement; Coon 2017). All else being equal, we do not expect to find these effects in morphologically nominative-accusative languages, in which *subjects* are generally taken to establish a relationship with finite T⁰. Furthermore, the fact that not all morphologically ergative languages show EEC effects can be tied to independent variation in the source of "absolutive" (Legate 2008), but with more nuance than reported in Coon et al. 2014. Specifically, in a language where finite T⁰/Infl⁰ is responsible for absolutive clitics/agreement, we expect (all else being equal) the object to raise above the subject. In Mayan languages in which the source of absolutive is low, we don't find an EEC. Note however that nothing in principle rules out the possibility that objects which receive absolutive case or agreement low could nonetheless raise above the subject (as appears to be the case for Tsotsil in appendix A). This is

compatible, for example, with the account of Dyirbal in Legate 2012; Legate proposes that absolutive has a *low* source but that the language nonetheless shows effects of an EEC. See also Aldridge 2004 on variation in Austronesian.

With respect to the mixed probe on C⁰, we noted above that the proposal that C⁰ probes for [Ā] and [D] builds on a line of work on the nature of Ā-movement in languages not genetically related to Mayan—see for example van Urk 2015 for Dinka, as well as Aldridge (to appear), Erlewine et al. 2017, and Erlewine (2018) for Austronesian languages. Though our account differs crucially from some of these in not relying on licensing, it shares with these works a blurring of the line between A- and Ā-movement, as well as the roles associated with T⁰ and C⁰ in driving this movement. We note speculatively that Mayan languages conspicuously lack processes associated movement to T⁰/Infl⁰: there are no raising verbs, and no evidence that unaccusative or passive subjects A-move, and in general no evidence for [EPP]-driven movement to Spec,TP. If A-movement is triggered by nominal features like [D] or [φ] (van Urk 2015), then the fact that C⁰ is the locus of [D] probing in Mayan could perhaps be connected to this absence. We leave this and many other future possible directions as topics for future cross-linguistic investigation.

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A Which arguments trigger AF?

Variation has been described in which arguments, or combinations of arguments, trigger AF. As noted in section 2.3, three different patterns have been described in the relevance of the person features of the nominal arguments (Stiebels 2006; Aissen 2017b; Watanabe 2017), summarized in (89).[24]

(89)   *Argument features and AF*
  a.   at least one DP must be 3rd person in order for AF to occur (e.g. K'iche');
  b.   the *agent* must be 3rd person in order for AF to occur (e.g. Q'anjob'al);
  c.   *both* agent and patient must be 3rd person in order for AF to occur (Tsotsil).

Here we propose that things are again simpler than they appear, and that this apparent variation can be traced back to independent differences among the languages in question. Specifically, we maintain that the EEC holds *whenever* an (interpreted) DP object moves to a position above the subject in a Mayan transitive clause—regardless of the person features of either argument. This is repeated from (4) in (90) below.

(90)   MAYAN EEC GENERALIZATION
  When an interpreted DP object structurally intervenes between the subject and the Ā-probe on C⁰, the subject is restricted from undergoing Ā-extraction.

We discuss each pattern from (89) in turn below, arguing that none presents a counterexample to the generalization in (90).

At least one DP must be 3rd person. First, we examine the at-least-one-third-person restriction in (89a). Recall from above that section 2.3 that the Set B morpheme in languages of the K'ichean Proper branch is hierarchically governed: either the subject or the object may control the Set B morphology, according to the hierarchy in (24) above. Note, however, that this hierarchy does not determine which argument is indexed in combinations of 1st and 2nd person arguments, and such combinations are generally reported to be impossible in AF clauses (Dayley 1978; Larsen 1988; Preminger 2014). In the Kaqchikel example in (91), for example, the AF form is reported to be ungrammatical regardless of the choice of Set B morpheme.

(91)   *Ja   rat   x-{in/at/Ø}-ax-an   yïn.
       FOC PRON2S PFV-B1S/B2S/B3S-hear-AF PRON1S

       intended: '*You* hit me.'   (Kaqchikel; Preminger 2014, 22)

We follow Aissen (2017b) and other previous work which analyzes this as a *morphological* problem: both 1st and 2nd person forms compete for the Set B slot, and the grammar is unable to resolve the conflict (see also Stiebels 2006; Watanabe 2017). One piece of evidence in favor of this analysis comes from Aissen (2017b), who notes that K'iche' has a second person formal (polite) pronominal category, expressed as *lah* in singular and *alaq* in plural. Both of these forms behave formally as 3rd persons in not triggering any

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[24]Here and elsewhere we use "agent" and "patient" to refer to the most agent-like and patient-like DPs in a transitive construction, setting aside variation in details of thematic roles, which to our knowledge do not have an effect on the EEC or AF constructions.

morpheme in the Set B slot. Combinations of a 2nd person formal argument with a first person argument are grammatical in AF clauses, as shown in (92).

(92) In   x-in-ch'aab'e-n   **alaq**.
      PRON1s PFV-B1s-talk.to-AF PRON2P.FORMAL
      '*I* talked to you.'   (K'iche'; Mondloch 1981, 221)

As Aissen notes, forms like (92) suggest that the ban is not strictly about combinations of 1st and 2nd person DPs, but rather on the clash of two competing overt morphemes (we return to how to formally model this in §5.3).

There are at least three possibilities reported for realizing a focussed agent in combinations of 1st and 2nd person DPs with overt Set B exponents. The first and least surprising, shown in (93), is to instead use an antipassive construction. Here the object appears in an oblique form and the now-intransitive agent is free to extract (see §?? above).

(93) Atet   x-at-ch'ey-o   w-xiin.
      PRON2s PFV-B2s-hit-ANTIP A2s-RN
      '*You* hit me.'   (Tz'utujil; Dayley 1978, 38)

Aissen (2017b) reports that all speakers of Tz'utujil and some speakers of K'iche' have such an antipassive in their grammars, and simply use this independently-available strategy to focus an agent in contexts with two local arguments.

Second, López Ixcoy (1997) reports that some K'iche' speakers permit the AF construction to be used in combinations of local arguments with Set B indexing the *internal* argument, as in (94). Note that since the agent has extracted, it will always be realized by the full 1st or 2nd person focussed pronoun; Set B indexes the remaining argument.

(94) At   x-in-xibi-n   pa b'ee.
      PRON2s PFV-B1s-scare-AF PREP path
      '*You* scared me in the path.'   (K'iche'; López Ixcoy 1997, 369)

Finally, for K'iche' speakers who do *not* have an antipassive form, as well as for at least some Kaqchikel speakers (Preminger 2014), we find the appearance of an extracted agent from a regular transitive verb form, as shown in (95).

(95) In   k-at-in-to'-oh.
      PRON1s IPFV-B2s-A1s-help-ss
      '*I* will help you.'   (K'iche'; Mondloch 1981, 223)

Assuming following previous work that the ban on multiple morphologically-realized local persons is indeed a morphological problem specific to the AF construction—related to multiple overt realizations of person features in a construction with a single morphological slot for φ-marking—the next question is: what, if anything, does this have to do with the EEC? Our proposal is that this is *not* directly related to the EEC. That is, the restriction on extracting ergative subjects from transitive clauses is not lifted in the K'ichean Proper subbranch when both arguments are local. Rather, we propose that the EEC is maintained, and that when faced with the need for agent extraction in these local contexts, speakers must make use of an alternative strategy: either an antipassive (93), an AF form with special agreement (94), or—most surprisingly from the point of view of the EEC—apparent extraction from the transitive form as in (95).

It is not obviously the case, however, that the agent in (95) has extracted; one possibility is that at least in some cases, the left-edge DP is in a high base-generated topic position (see Aissen 1992; Clemens and

Coon 2018 on high topics). An alternative possibility is that some speakers have access to a Last Resort mechanism (see e.g. Rezac 2011), allowing a transitive verb form to function as an AF stem in terms of extraction (see section 5 below on the function of an AF stem), exactly when this morphological problem prevents the regular AF from being used. While we do not offer further details for this claim here, we contend that the K'ichean Proper pattern in which AF is only possible in which one argument is 3rd person singular (i.e. triggers no overt Set B form) does not necessarily imply a pattern in which the Ergative Extraction Constraint is lifted for combinations of non-3rd persons. Rather, an independent morphological conflict creates a problem for the use of AF, which the syntax must resolve through other means.

The agent must be 3rd person. We next turn to the second reported argument pattern from (89b) above. In Q'anjob'alan languages, Agent Focus is reported to only occur with 3rd person agents; 1st and 2nd person agents appear to extract directly from transitive forms, as shown by the pair in (96). In (96a), the extracted agent appears with the expected AF form of the verb. In (96b), however, we find an apparently focussed 1st person pronoun and a transitive verb form.

(96)   a.   A   Juan max maq'-on no tx'i'.
            FOC Juan PFV hit-AF   CLF dog
            '*Juan* hit the dog.'
       b.   Ayin   max hin-maq' no tx'i'.
            PRON1s PFV A1-hit   CLF dog
            '*I* hit the dog.'   (Q'anjob'al; Coon et al. 2014, 223)

The Q'anjob'al pattern, we claim, is entirely different from the K'ichean Proper pattern discussed above (cf. Stiebels 2006; Erlewine 2016; Watanabe 2017, who analyze these person patterns in (89) as being different "strengths" of the same type of restriction). First, note that this restriction cannot be attributed to a morphological source; the Set B morpheme in the Q'anjob'alan AF construction consistently targets the object (see (32) above).

   Coon et al. (2014) suggest that 1st and 2nd person agents in Q'anjob'al are base-generated in a high position and that AF is not used because no true agent extraction has taken place. While they present this as a speculative proposal, we offer further evidence here that this is on the right track. One important difference between the Q'anjob'alan languages which do not show AF with apparently-extracted 1st and 2nd person ergative subjects, and the K'ichean languages which do (recall the morphological AF problem arises only when *both* arguments are local; 1/2>3 forms require AF), is the following: the 1st and 2nd person pronouns in Q'anjob'al are ungrammatical in postverbal subject position, as shown by the intransitive and transitive pairs in (97) and (98).[25] This stands in clear contrast with K'ichean Proper languages, which do permit 1st and 2nd person pronominal forms in postverbal argument position (see e.g. (25b) above)

(97)   a.   **Ayin**   max-in way-i.
            PRON1s PFV-B1s sleep-ITV
            '*I* slept.'
       b.   *Max-in way **ayin**.
            PFV-B1s sleep PRON1s
            intended: 'I slept.'

(98)   a.   **Ayin**   max hin-watx'ne-j aj   te' na.
            PRON1s PFV A1s-build-DTV DIR CLF house
            '*I* built the house.'

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[25]Similar facts can be replicated for Chuj, another language which does not show AF when local agents extract.

b. *Max hin-watx'-ne-j   aj **ayin**   te' na.
    PFV A1S-build-CAUS-DTV DIR PRON1S CLF house
    intended: 'I built the house.'   (Q'anjob'al; Pedro Mateo Pedro, p.c.)

The ungrammaticality of the forms in (97b) and (98b) contrasts with 3rd person subjects, which appear in postverbal position in discourse-neutral contexts, as in (99a) and (99b).

(99) a. Max way **ix Malin**.
          PFV sleep CLF Malin
          'Maria slept.'
      b. Max s-watx'-ne-j   aj **naq winaq** te' na.
          PFV A3S-build-CAUS-DTV DIR CLF man   CLF house
          'The man built the house.'   (Q'anjob'al; Pedro Mateo Pedro, p.c.)

Indeed, Mateo Pedro (2001) proposes that these 1st and 2nd person "pronouns" like *ayin* are in fact comprised of the Q'anjob'al focus marker (*a*), plus the Set B absolutive clitic (=*in* in the first person singular examples above); see also Pascual 2007 and Scharf 2016 for the same conclusion and further related discussion. While free-standing pronouns across Mayan show a formal connection to the Set B series, in Q'anjob'al the 1st and 2nd person singular and plural pronouns (*ayin* '1SG', *ayach* '2SG', *ayon* '1PL', *ayex* '2PL') are exactly identical to the focus marker combined with the Set B series (=*in*, =*ach*, =*on*, =*ex*), plus an epenthetic glide.

We thus follow Mateo Pedro and others in analyzing these as complex forms, not as true extracted pronouns. While we set aside the details of the structure of forms like (96b) and (98a), the fact that these "pronouns" do not appear in postverbal argument position, and can be clearly decomposed into the focus marker plus absolutive (unlike K'ichean languages, in which we find a morphological resemblance, but not complete identity) points to the conclusion that Ā-extraction simply has not taken place; the 1st and 2nd person forms are base-generated in the left edge. In other words, we follow Coon et al. 2014 in proposing that all Ā-extracted DPs in Q'anjob'alan require AF, and that 1st and 2nd person elements like *ayin* in (96b) have not extracted from underlying subject position, in line with the generalization in (90) above.

Both agent and patient must be 3rd person. Finally, we turn to Tsotsil. Tsotsil is an outlier in the Greater Tseltalan branch in having an Agent Focus construction. Like the other members of its subfamily, it has a series of stem-final Set B markers, which at least in some environments appear to be available in TAM-less environments, as in (100a)—hallmarks of LOW-ABS languages.[26]

(100) a. X-tal   [a-tek'-ik-**on**   ].
          ASP-come   A2-step-2PL-B1
          'You (all) will come and step on me.'   (Tsotsil; Aissen 1984, 561)
      b. Ak'-o [s-mala-**otikotik**   ] li   Maruch-e.
          let-IMP A3-wait.for-B1PL.EXCL DET Maruch-CL
          'Let Maruch wait for us.'   (Tsotsil; Aissen 1987, 222)

Nonetheless, Agent Focus in Tsotsil shares the properties from (19) above: it is limited to contexts of transitive subject extraction, neither DP is oblique, Set A marking disappears, and a cognate form of the AF suffix appears on the stem. As Aissen (1999, 456) notes, like AF in other languages, the Tsotsil AF stem appears with intransitive status suffixes in certain environments.[27] However, Tsotsil AF occurs only when

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[26]Tsotsil also has a reduced set of "high" Set B morphemes; see Aissen 1987 and Woolford 2011 for discussion.

[27]Aissen (1999, 457) describes the Set B marker in the AF construction as preferentially targeting the object but with subject

both arguments are 3rd person (Haviland 1981; Aissen 1999, 2017a). Compare the 3>3 forms in (101a) and (101b), with the ungrammatical form in (101c).

(101) a. Buch'u i-maj-**on**   li   Petul-e?
           who   PFV-hit-AF DET Pedro-ENC
           'Who hit Pedro?'   (Tsotsil; Aissen 1999, 456)

       b. J-bankil   i-maj-**on**.
           A1-older.brother PFV-hit-AF
           '*My older brother* hit him.'

       c. *Vo'on   l-i-maj-**on**.
           PRON1S PFV-B1-hit-AF
           intended: '*I* hit him.'   (Tsotsil; Aissen 1999, 456)

To express the meaning in (101c), a transitive form is used, as in (102). AF forms are similarly impossible when the object DP is 1st or 2nd person.

(102) Vo'on   i-j-maj.
       PRON1S PFV-A1-hit
       '*I* hit him.'   (Tsotsil; Aissen 1999, 456)

Not only may agents extract from transitive environments if one DP is a local DP, they may also extract from transitive constructions in which *both* are 3rd person—that is, while AF is limited to agent extraction in 3>3 contexts, not all 3>3 environments with extracted agents require AF. This means that in certain contexts, there is ambiguity as to whether the subject or object DP is the one which has extracted, as in (103).

(103) Buch'u i-s-kolta   li   tzeb-e?
       who   PFV-A3-help DET girl-ENC
       'Who helped the girl? / Who did the girl help?'   (Tsotsil; Aissen 1999, 459)

Aissen notes that while this kind of optionality is possible in elicited material, in practice it is generally quite clear whether a certain 3>3 construction will make use of AF. Specifically, the choice between a transitive or AF form depends on a variety of factors related to the *relative prominance* of subject and object DPs, including animacy, definiteness, individuation, and discourse role. Specifically, "the AF form requires that the object be more prominent than the subject; the TV form requires roughly the opposite" (Aissen 1999, 459). To give just one example related to the property of animacy, consider the question in (104).

(104) K'usi i-s-ti'?
       what PFV-A3-bite/eat
       'What did he eat?' / *What bit him?'   (Tsotsil; Aissen 1999, 459)

While the verb *ti'* can mean either 'eat' or 'bite', the transitive verb form in (104) is unambiguously interpreted as a case of patient extraction (cf. the optionality in (103)). This is because an AF form is required when the patient outranks the agent on the animacy scale, as would be the case in the ungrammatical reading of (104).

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agreement also attested, repeated in Stiebels 2006. Aissen (2017a, 150), however, states that it is in fact only possible with objects. Aissen (2017a) also proposes that AF in some dialects of Tsotsil has been reanalyzed as a passive; we do not offer a full analysis of Tsotsil AF 5, setting this aside as a topic for future work.

Further examples are given by Aissen (1999), who draws parallels between AF in Tsotsil, and systems of *obviation* in languages like those in the Algonquian family. Because AF occurs when the lower-ranked argument is the subject, AF forms in Tsotsil are thus like inverse forms in languages with systems of obviation (Aissen 1997). suggest, following work in Algonquian syntax (e.g. Bruening 2009 and discussion there), that obviation systems relate to binding. Specifically, in strings with more than one third person argument, the proximate nominal must c-command the obviative nominal. This means that if the proximate argument is generated as the patient, it must move to a position above the agent—effectively mirroring the general syntax of HIGH-ABS languages discussed in section 2.2 above. Compare the "direct" form in (105), in which the subject is proximate and the object is obviative, with the inverse form in (106).

(105)   [SUBJ_PROX [_VP V OBJ_OBV]]   *direct*

(106)   [OBJ_PROX [SUBJ_OBV [_VP V ~~OBJ_PROX~~]]]   *inverse*

Again, the generalization from (22c) above is descriptively correct: AF in Tsotsil only occurs when both arguments are third person. However, this restriction can once again be reduced to a language-specific property. Systems of obviation operate only with two third person arguments, and exactly in inverse contexts, the object moves above the subject, mirroring the normal syntax of a HIGH-ABS language, consistent with our generalization from (90).

B   The K'ichean hierarchy effect

The K'ichean hierarchy which governs the realization of the single Set B morpheme in the AF construction is visually represented in (107); Set B morphemes from one K'ichean language, Kaqchikel, are provided for reference in (108).

(107)   *K'ichean person hierarchy*[28]

	combination of DPs	Set B
a.	[PART] ↔ [3SG/PL]	[PART]
b.	[PART] ↔ [PART]	*
c.	[3PL] ↔ [3SG]	[3PL]
d.	[3PL] ↔ [3PL]	[3PL]

(108)   *Kaqchikel Set B series* (Bennett et al. 2018)

	SINGULAR	PLURAL
1ST	*i-/in-*	*öj-*
2ND	*a-/at-*	*ïx-*
3RD	Ø	*e-/e'-*

The facts to be accounted for in (107) can be stated as follows: in any combination of a 1st or 2nd person ([PART(ICIPANT)]) DP with a 3rd person DP, the [PART] Set B morpheme will be realized, regardless of the number features of either DP (row a). Combinations of two [PART] DPs are simply ineffable in the Agent Focus construction (§A); again, this is irrespective of their number features (row b). In combinations of 3rd person arguments, if there is a 3rd person plural DP, the 3PL Set B marker will be realized; combinations of two 3rd plural DPs are acceptable and result in a (single) plural exponent (rows c–d).

As in the derivations above, we take the probe responsible for generating the Set B morphemes to be located on Infl⁰. In order to account for the privileged role of person features in the hierarchy, we take the probe to be an articulated person probe, shown in (109); on splitting φ-probes into distinct person (π) and number (#) probes, see Taraldsen 1995; Sigurðsson 1996; Anagnostopoulou 2003; Béjar and Rezac 2003, among others.[29]

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[28]See Preminger 2014, pg. 64 for a full table of combinations and outputs, not included here for space.

[29]It is possible that there are distinct person ([uπ]) and number ([u#]) probes, with [uπ] ordered before [u#], as in Preminger's account. In our system, there will be no role for the number probe and we set it aside here.

(109) *Articulated person probe on Infl⁰*

$$\begin{bmatrix} u\pi \\ | \\ u\textsc{part} \end{bmatrix}$$

We assume that the K'ichean Set B morphemes—for example, those from Kaqchikel in (108)—are pronominal clitics, generated when the φ-probe on Infl⁰ enters into Agree with a goal DP, possibly a null *pro*.[30] Following much previous work, we take clitic doubling to be an instance of long head movement of a D⁰ head to some functional projection, triggered by an Agree operation (e.g., Anagnostopoulou 2003; Preminger 2019; Yuan 2018). Clitic doubling is *featurally coarse*; in our system (for reasons that will become clear just below), the clitics are triggered by a probe relativized to person features as in (109), but the result of this probing is pronominalization of the DP. Given that we are dealing with an instance of pronominalization, it is unsurprising that the Set B morphemes reflect both person and number features, even though the probe that triggers them is relativized specifically to person.

Our account of the hierarchy effect in K'ichean also relies on the principles of feature gluttony used to derive the EEC in section 4 above. Because the specifiers of *v*P are equidistant from Infl⁰, as shown above in (86), when the articulated person probe probes, it will agree with the subject and object simultaneously. This configuration is always gluttonous, because the probe has agreed with two DPs. We argue that this gluttonous configuration leads to the hierarchy effects observed in K'ichean AF. We continue to assume that a gluttonous configuration is not in itself problematic, but that the way such a configuration interacts with other aspects of the grammar may be. Specifically, following Coon and Keine's (2018) analysis of PCC effects, movement of pronominal clitics will be constrained by Attract Closest and Best Match, just as discussed for Ā-movement in section 4 above. In the scenario at hand, Attract Closest fails to pick only one argument because the two DPs that Infl⁰ agrees with are not in an asymmetric c-command relationship. This means that Best Match will be the only operative constraint in determining which DP to clitic-double.

When one argument is 1st or 2nd person, and the other is 3rd person (row a in the table in (107)), Best Match will favour the 1st or 2nd person DP, and that DP will be clitic doubled, as shown (borrowing Oxford's representation for probing equidistant DPs) in (110). This is because a [PART] DP will always have *more* of the features sought by the probe in (109) than a 3rd person DP, and thus will qualify for as the Best Match. This is the case whether the [PART]-bearing DP is the subject or the object. The number specification of either DP is similarly irrelevant because Best Match is only calculated with respect to the features of the probe.[31]

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[30]Preminger (2014) proposes that the 1st and 2nd person Set B morphemes in Kaqchikel are pronominal clitics, while the 3rd person plural is a reflex of morphological agreement. Preminger uses this distinction to account for the preference of [PART] over 3rd person, via a stipulation that the realization of clitics is privileged over the realization of agreement. As support for this division, Preminger cites the fact that the 1st and 2nd person Set B forms look morphologically *more* similar to full pronouns than the 3rd person plural morpheme. However, it has been noted in a range of recent work that morphological similarity is not a sufficient diagnostic for the distinction between clitics and agreement (Bennett et al. 2018; Yuan 2018). Furthermore, there is an independent explanation of the morphological distinction that Preminger discusses (see Preminger 2014, 26)—namely, the addition of the segment <j> in the 3rd person pronouns is likely historically related to the focus marker *ja*.

Our account here takes all of the Set B morphemes to be syntactically pronominal clitics—i.e. syntactically, they are D⁰ heads. As discussed in detail in Bennett et al. 2018, these forms are morphophonologically *affixal*. The possibility that a syntactic clitic is realized as a morphophonological affix can be straightforwardly accounted for in Bennett et al.'s system of *prosodic smothering*. Furthermore, if independent evidence is found that these morphemes are morphosyntactically *agreement* (i.e. the realization of φ-features on a functional head), minimal modifications could be made to our system here to capture this.
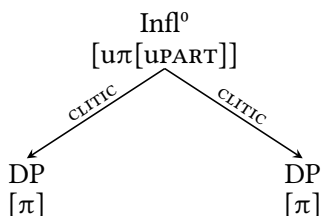
[31]The general idea behind this analysis is similar to that in Watanabe 2017, but also differs in important respects. For Watanabe, Set B morphemes are agreement morphemes and the preferential insertion of [PART] over 3rd person agreement is governed by the Subset Principle (Halle 1997). Watanabe formulates the ban on multiple [PART] clitics as a variant of the Obilgatory Contour Principle; it is not immediately clear to us, however, what then permits multiple 3rd person plural DPs in his system.

(110)   *One argument is 3rd person*

$$\text{Infl}^0$$
$$[\text{u}\pi[\text{uPART}]]$$

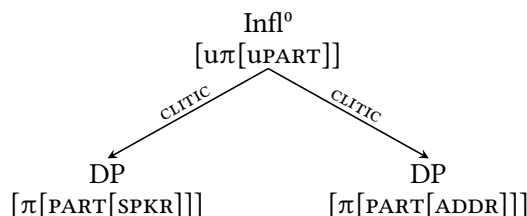DP $[\pi]$ ⟵----   CLITIC   DP $[\pi[\text{PART}[\text{SPKR}/\text{ADDR}]]]$
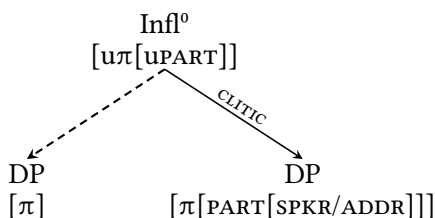
In other combinations DPs—i.e. rows b–d in (107) above—Best Match will fail to pick one DP over the other. This follows from the assumption that the π-probe only considers *person* features when calculating Best Match. In combinations of two 3rd person DPs, both will only have the feature $[\pi]$, and therefore will be equal with respect to Best Match, as in (111). In combinations of 1st and 2nd person arguments, both DPs are equally good matches for the $[\text{u}\pi[\text{uPART}]]$ probe on Infl^0, and neither qualifies as Best Match, as in (112).[32] We propose that in these scenarios, *both* DPs are clitic-doubled by the probe on Infl^0, as shown in (111)–(112).

(111)   *Both arguments are 3rd person*

$$\text{Infl}^0$$
$$[\text{u}\pi[\text{uPART}]]$$

CLITIC — DP $[\pi]$ CLITIC — DP $[\pi]$

(112)   *Both arguments are 1st/2nd person*

$$\text{Infl}^0$$
$$[\text{u}\pi[\text{uPART}]]$$

CLITIC — DP $[\pi[\text{PART}[\text{SPKR}]]]$ CLITIC — DP $[\pi[\text{PART}[\text{ADDR}]]]$

We propose that morphological constraints moderate which argument is exponed in the above scenarios. Specifically, we assume the two morphological constraints in (113).

(113)   *Morphological constraints in K'ichean AF hierarchy effects*
   a.   ONE SLOT: only one overt clitic may be spelled out on Infl^0
   b.   REALIZE ALL: spell out all features of a head

As discussed in Watanabe 2017, some version of (113a) will be necessary in any account of the K'ichean hierarchy. As precedent, see also the CONDITION ON CLITIC HOSTS used in accounts of Basque in Arregi and Nevins 2012 and of Choctaw (Muskogean) in Tyler to appear, which bans specific functional heads from hosting more than one clitic. The requirement in (113b) that all features be spelled out also finds precedent in the morphological literature; see for example "XREF" and related discussion in Woolford 2003.

These constraints account for the facts in rows b–d of the table in (107) above. Beginning in row b, when two [PART] DPs have been clitic doubled on Infl^0, there is no possible outcome that respects both ONE SLOT and REALIZE ALL. There is only one clitic slot, and it is therefore impossible to realize both arguments' features, violating REALIZE ALL. If both clitics are realized, ONE SLOT is violated. This derives the ineffability of AF with two participant arguments in K'ichean without recourse to a special Person Licensing Condition, as in Preminger 2014.[33]

In cases where two 3rd person arguments have been clitic doubled on Infl^0, as in rows c–d, it is possible to respect both constraints. In the combination of a [3SG] and [3PL] argument, only the [3PL] has an overt

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[32]Note that since Best Match is evaluated against the features of the probe, 1st and 2nd person DPs will be equally good matches for this $[\text{u}\pi[\text{uPART}]]$ probe regardless of whether both 1st and 2nd person are fully specified, as represented in (112), or whether one is underspecified with respect (i.e. if 2nd person is missing the [ADDR] node). See discussion in Harley and Ritter 2002.

[33]See Preminger 2019 who argues for a weakening of the original PLC, and Coon and Keine 2018 for further critique.

exponent (see table (108), above). Therefore, it is possible to realize all features on Infl⁰ while using only one morphological slot. In the combination of two [3PL] arguments, we assume that REALIZE ALL is satisfied with the insertion of a single morpheme to spell out multiple feature bundles, if both of those feature bundles would be spelled out by homophonous exponents. That is, the features of both arguments are recoverable, and this is all that REALIZE ALL requires. Because there is only one clitic, ONE SLOT is also respected.

The outcomes of the various person combinations, along with the constraints that determine the outcome, and summarized in (114).

(114) *Constraints in the K'ichean hierarchy*

	combination of DPs	Set B	Relevant constraint(s)
a.	[PART] ↔ [3SG/PL]	[PART]	Best Match = [PART]
b.	[PART] ↔ [PART]	*	Realize All & One Slot violated
c.	[3PL] ↔ [3SG]	[3PL]	Realize All & One Slot satisfied (3SG = Ø)
d.	[3PL] ↔ [3PL]	[3PL]	Realize All & One Slot satisfied (3PL for both)