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

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1 Introduction

Today there are around thirty distinct Mayan languages, spoken by more than six million people in Mexico, Guatemala, Belize, and Honduras.

- All Mayan languages are morphologically ergative.
  - Transitive subjects are marked with [Set A] prefixes.
  - Transitive objects and intransitive subjects are marked with **Set B**.

(1) a. Tyi [i]-mek'-e-**yety** jiñi x'ixik.
PFV A3-hug-TV-B2 DET woman
'The woman hugged you.'
b. Tyi wäy-i-**yety**.
PFV sleep-ITV-B2
'You slept.' (Ch'ol; Tseltalan; Mexico)

(2) a. Ix-**ach**-[s]-chel ix ix.
PFV-B2S-A3-hug the woman
'The woman hugged you.'
b. Ix-**ach**-way-i.
PFV-B2-sleep-ITV
'You slept.' (Chuj; Q'anjob'alan; Guatemala)

Puzzle: In many—but not all—Mayan languages, transitive (ergative) subjects cannot be **focused, wh-questioned, or relativized** (i.e. undergo Ā-movement) from a regular transitive verb form.

(3) Maxki tyi [i]-mek'-e-**yety**?
who PFV A3-hug-TV-B2
'Who hugged you?' (Ch'ol)

(4) *Mach ix-**ach**-[s]-chel-a'?
who PFV-B2S-A3S-hug-TV
intended: 'Who hugged you?' (Chuj)

- This is part of a phenomenon known as *syntactic ergativity*—in *some* ergative languages, syntactic operations are sensitive to the distinction between ergatives, on the one hand, and absolutives on the other (see Deal 2016).
- We follow Aissen 2017b in labelling this restriction shown in (5) the ERGATIVE EXTRACTION CONSTRAINT, or EEC.[1]

(5) 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'ichee'; Can Pixabaj 2004, 58)

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[1] Abbreviations are listed on the last page. We indicate focused DPs with italics.

In this talk: A unified account of the EEC within Mayan, and an analysis of the special construction known as "Agent Focus" (AF) used to circumvent it.

- AF has been a longstanding topic in Mayanist literature (Smith-Stark 1978; Craig 1979; Larsen and Norman 1979; Dayley 1981; Ayres 1983).
- 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 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.

Three goals today:

1. **First**: we clarify the range of variation concerning the EEC and AF construction in the family in order to provide a more complete picture of the empirical landscape to be accounted for.
   - Some recent work has tackled AF across a number of Mayan languages (e.g. Stiebels 2006; Watanabe 2017), we show that the **variation is more limited than previously described**.
   - The "facts and fictions" in our title pays homage to Smith-Stark's (1978) early work on this topic, now with the benefit of more than four decades of descriptive and theoretical work.
   - ➽ Appropriate for this venue because the work here would not have been possible without the excellent work of native speaker linguists.
     - Among the world's Indigenous languages, Mayan language stand out for the **active community of native-speaker linguists** working to document, analyze, promote, and maintain their languages (see e.g. England 2007).
     - This work has had important impacts on language health, language policy, and the availability of linguistic resources, both for educators and linguists.
2. **Second**, we argue that the EEC has a similar source across the subset of Mayan languages which exhibit it: locality.

   (6) 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.

   - In Mayan languages which generally 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).

   (7) $[_{CP}$ __ … $[_{vP}$ OBJECT [SUBJECT $[_{VP}$ V ~~OBJECT~~]]]]

   - The problem with Ā-extracting the subject across the moved object connects to the requirements of the Ā-probe on C⁰.
   - ➽ The [Ā] probe on C⁰ is relativized to the feature [D].
3. **Third**, we argue that while the EEC has a common source (the configuration in (7)), the **Agent Focus construction**—exemplified below for the same two languages—is not homogenous across the family.

   (8) 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'ichee'; Can Pixabaj 2004, 56)

   - We focus on the two subfamilies which have received the most attention in recent literature: Q'anjob'alan and K'ichean.
   - In both subfamilies, the AF morpheme is a v^0 head which does not cause the object to move above the subject, circumventing the locality problem in (7).
   - But it does this in different ways, accounting for differences we do find between AF in the two subfamilies

Plan: ☐ Desiderata • ☐ The extraction problem • ☐ Deriving EEC • ☐ AF

2 Agent extraction and Agent Focus: Description and desiderata

- There is variation across the Mayan family in details of constructions called Agent Focus, as well as in the nature of the EEC—but less than previously described.

2.1 Mayan background

- The five main branches of the Mayan family are shown in (9). (Campbell and Kaufman 1985; England and Zavala 2013; Bennett et al. 2016; Campbell 2017; Aissen et al. 2017).[2]

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

Despite variation, many **core characteristics** are found across Mayan:

- Mayan languages are **verb initial** in discourse-neutral contexts (England 1991; Aissen 1992; Clemens and Coon 2018).
- Arguments appear obligatorily in **preverbal** positions for topic, focus, wh-questions, and relativization.
- Core arguments may generally be *pro*-dropped, and are cross-referenced on the verb stem by two series of morphemes:
"Set A" (= ergative, possessive); "Set B" (= absolutive).

(10) TAM–{**SET B**}–[SET A]–Root–(Voice)–(Stat. suffix)–{**SET B**}

- As shown in (10), Set B morphemes (bold) appear either following the TAM marker, or stem-finally, discussed further below.

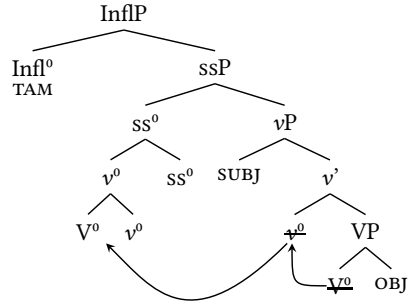
[2] A sixth branch, the Huastecan branch, is the most divergent, having been the first to branch off, and is not discussed here.

(11) a. Tyi [i]-k'el-e-**yety**.
PFV A3-watch-TV-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)

2.2 Theoretical assumptions

- We take the verb stem to be formed by head movement of the root up through functional projections related to argument structure:

(12) *Mayan verb stem formation* (Clemens and Coon 2018)



- Following Coon 2017, Set A (prefixal ergative agreement) arises directly from transitive v^0 in the Spec-Head configuration with the external argument.
- Mayan languages can be divided into two types with respect to the location of **Set B** (see (10)): "LOW-ABS" and "HIGH-ABS" (Tada 1993).
  - ➪ HIGH-ABS languages generally restrict the extraction of ergative arguments (i.e. generally exhibit the EEC, and require AF for transitive subject extraction);
  - ➪ LOW-ABS languages generally do not (i.e. generally do not exhibit the EEC, and do not possess AF forms).

➽ The location of the Set B/absolutive morpheme correlates with the functional head responsible for generating it (Coon, Mateo Pedro, and Preminger 2014).

LOW-ABS — Set B from v^0

- In LOW-ABS languages (e.g. Ch'ol, Tseltal), Set B markers in transitive clauses are generated via an Agree relationship established by the transitive v^0 head with the object (Legate's 2008 ABS=DEF).
- Set B morphemes are *available* in (TAM-less) nonfinite embedded clauses.

(13) K-om [j-käñ-**ety**].
A1-want A1-know-B2
'I want to speak to you.' (Ch'ol; Vázquez Álvarez 2011, 99)

HIGH-ABS — Set B from Infl^0

- In HIGH-ABS languages (e.g. K'iche', Kaqchikel), finite Infl^0 is the source of absolutive morphology (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.
- In K'ichean, all nonfinite embedded clauses must be detransitivized (via passive or antipassive); the single remaining argument is co-indexed via Set A:

(14) X-u-chap [nu-kuna-x-iik].
PFV-A3S-begin A1S-cure-PASS-ITV
'She began to cure me.' (K'iche'; Can Pixabaj 2015, 116)

- In Q'anjob'alan, nonfinite embedded transitives are possible only with special morphology (§5).

(15) EXTRACTION AND EMBEDDING IN TRANSITIVES

	ABS/Set B	EEC?	embedded ABS/Set B?
LOW-ABS	v^0	no	✓
HIGH-ABS	Infl^0	yes	✘

- 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 to be driven by an [EPP] feature on v_{TV}.
  - This movement makes the object accessible to the ABS-generating probe on Infl^0, as in (16):

(16) $[_{InflP}$ Infl^0 … $[_{vP}$ OBJECT [SUBJECT $[_{VP}$ V ~~OBJECT~~]]]]
SET B

➽ *But*, in so doing, it also creates a locality problem for extraction of the transitive subject:

(17) $[_{CP}$ __ … $[_{vP}$ OBJECT [SUBJECT $[_{VP}$ V ~~OBJECT~~]]]]
✗

2.3 Agent Focus

- AF has been claimed to be present in all five of the subfamilies in (9) above.
- The core properties of the Agent Focus construction which we aim to account for are exemplified by the Chuj (Q'anjob'alan) sentence in (18b):[3]

[3] (19d) 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.

(18) 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)

- We focus here on constructions which share the properties in (19):

(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) marking is absent;
d. a special Agent Focus suffix appears on the stem.

- In languages which have retained status suffixes, like Chuj above, an *intransitive* status suffix appears on the AF stem (18b).
- AF constructions across the family thus seem to show a "mixed" status with respect to transitivity.
  - *Transitive* insofar as we find two non-oblique DP arguments.
  - *Intransitive* insofar as the verb appears with only a single (Set B) φ-agreement morpheme; the *intransitive* status suffix appears.
- Despite these pervasive characteristics, there is also **variation** in Agent Focus across the family, along two main dimensions:
  - First, 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 Set B morphology (§2.3.2).
  - A second point of variation concerns whether and how the **person features** of the subject and object DPs are involved in the choice between AF and transitive constructions (§2.3.1/A).

2.3.1 Which arguments trigger AF?

- Variation has been described as to *which types of arguments* trigger the use of AF (vs. a transitive form) (Stiebels 2006; Watanabe 2017):

(20) ARGUMENT FEATURES AND AF
In order for AF to occur…
a. at least one DP must be 3rd person (e.g. K'iche');
b. the *agent* must be 3rd person (e.g. Q'anjob'al);
c. *both* agent and patient must be 3rd person (Tsotsil).

- In appendix A we show that this variation in the EEC is only apparent, and can be understood based on individual properties of the languages in question (Coon, Baier, and Levin 2019).

➽ The EEC holds *whenever* an object DP intervenes between C⁰ and the transitive subject—*regardless* of person features.

2.3.2 Agreement patterns

- Stiebels (2006) and Watanabe (2017) describe three different patterns of Set B marking across AF. We argue against the existence of (21c) in true AF.

(21) 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).

Set B = object (Q'anjob'alan)

- Characteristic of AF, the Set A (ergative) agreement is absent.
- The Set B always cross-references the internal argument:

(22) a. Maktxel max-**in** il-on-i?
who PFV-B1S see-AF-ITV
'Who saw me?'
b. Maktxel max-**ach** il-on-i?
who PFV-B2S see-AF-ITV
'Who saw you?'
c. Maktxel max il-on naq winaq.
who PFV see-AF CLF man
'Who saw the man? (Q'anjob'al; Coon et al. 2014)

Set B = variable (K'ichean)

- Languages in the K'ichean Proper subbranch—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).
- The single Set B morpheme on the Agent Focus stem may cross-reference *either* the subject or the object DP, according to (23):

(23) 1/2 ≫ 3 plural ≫ 3 singular

(24) 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)

(25) 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)

Set B = subject (✘)

- Both Stiebels (2006) and Watanabe (2017) describe a third pattern in AF: consistent subject agreement (Q'eqchi', Mam, Poqom, and Poqomchi').[4]
- However, Stiebels (2006, 528): "In general, subject agreement seems to **correlate with the oblique realization of the internal argument**."
- In (26), the patient is introduced by a relational noun, used to introduce oblique arguments across the family:

(26) 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)

[4] We follow Benito Pérez (2016) in referring to the language as Poqom, not Poqomam.

- Benito Pérez (2016, 55) notes that in Poqom, the morphology found on verbs in which the agent is focussed is *identical* to that found in antipassive.

➽ We contend that (26) simply is an antipassive form; because extraction of intransitive subjects is generally not restricted, these types of constructions—though interesting in their own right—are not relevant to our understanding of the EEC and AF.

- Similar facts are described for Mam (England 1983), where antipassive constructions are used to extract agents—a common pattern cross-linguistically.
- These forms do not present the same type of puzzle as canonical AF constructions: because the object is oblique, it is unsurprising that the subject triggers Set B morphology and can extract:

(27) [CP ___ … [vP SUBJECT [VP V [OBL OBJECT]]]]
↑ ✓

Summary

(28) AF AGREEMENT PATTERNS

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

Plan: ☑ Desiderata • ☐ The extraction problem • ☐ Deriving EEC • ☐ AF

3 The extraction problem

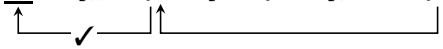
➽ **Proposal:** the source of the EEC is *locality*.

- The direct object in all HIGH-ABS Mayan languages moves to a position above the ergative subject; here it establishes an Agree relationship with Infl^0, resulting in Set B morphology:

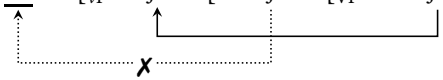
(29) [InflP Infl^0 … [vP OBJECT [SUBJECT [VP V ~~OBJECT~~]]]]
SET B

➽ We propose, following previous authors (e.g. Campana 1992; Ordóñez 1995; Bittner and Hale 1996a; Aldridge 2004, 2008a; Coon et al. 2014; Assmann et al. 2015), that this configuration is the source of the ban on Ā-extraction of the ergative subject.

- The high object is a licit target for Ā-movement to Spec,CP:

(30) *Object can extract*
[CP __ … [vP OBJECT [SUBJECT [VP V ~~OBJECT~~]]]]


- Ergative subject Ā-movement is ill-formed:

(31) *Subject cannot extract*
[CP __ … [vP OBJECT [SUBJECT [VP V ~~OBJECT~~]]]]


➪ Ā-extracting the subject across the object constitutes a **Minimality violation**; see Campana 1992 and Aldridge 2004, 2008b.

- **Why does this problem arise?** Ā-probes are generally taken to obey Relativized Minimality (Rizzi 1990), and are able to skip over interveners that lack an Ā-feature.

➽ Building on an analysis of K'ichean in Levin 2018, we claim that (32) holds in Mayan:

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

- We propose that it is the combination of…

(i) movement of the transitive object above the ergative subject as in (31), and

(ii) relativization of the Ā-probe to [D], as in (32),

…that conspire to yield the EEC.

- This account predicts that transitive subject extraction out of a clause that does not contain an intervening DP object will be licit.

  – This holds generally in LOW-ABS languages, in which objects remain low and the EEC is absent.

  – There are also several interesting environments in HIGH-ABS languages in which this prediction can be tested language-internally, two discussed here:

(33) ENVIRONMENTS IN WHICH EEC LIFTED IN HIGH-ABS LGS
a. object is a bare NP (§3.1)
b. object is a reflexive or extended reflexive (§3.2)
c. both S and O appear in the left periphery (Coon et al. 2019)

- We show below how our account predicts that the EEC is suspended in these environments.

3.1 NP complements

- As demonstrated by Aissen (2011), bare NP objects in K'iche' permit Ā-movement of the ergative subject from a full transitive (cf. (5b)).

(34) a. Jachiin x-u-loq' (*rii) uuq?
WH COM-A3S-buy DET cloth
'Who bought cloth?'
b. Maj-juun k-u-loq' (*lee) ojeer siik'.
NEG-INDF INC-A3S-buy DET old cigarette
'No one is going to buy old cigarettes.' (K'iche'; Aissen 2011, 12)

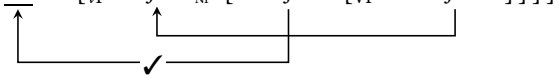
- The bare NP objects *are* structurally high.

- Recall that movement of the object is required for Set B marking from Infl^0; bare NP objects can trigger plural Set B:

(35) 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)

➽ **Proposal:** The NP object is accessible to the φ-probe on Infl^0, permitting the appearance of a Set B morpheme.

  – Due to its lack of [D], it does not intervene for the higher [D]-relativized Ā-probe:

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


3.2 Reflexive and extended reflexive complements

- Another environment in which ergative subject Ā-extraction is well-formed is when **the subject binds into the object** in both 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):

(37) Reflexives

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'ichee'; Mondloch 1981, 233)

(38) Extended reflexives

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'ichee'; Mondloch 1981, 237)

- Extended reflexives show two important properties:
- First, the availability of 3rd person plural Set B agreement provides evidence that the extended reflexive objects above the subject:

(39) a. Ja ri a Juan x-**e**-b'e-ru-kano-j ri
FOC DET CLF Juan PFV-B3P-DIR-A3S-look.for-DTV DET
r-ak'wal-a.
A3S-child-PL
'*Juan*$_i$ 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.)

- Second, observe that extended reflexive objects in Kaqchikel may be full DPs—not structurally reduced NPs.
- If extended reflexive objects are DPs which move above the subject, why don't they trigger EEC effects?

➽ **Proposal:** In order to be bound by the subject, the object must reconstruct to its base position—reconstruction renders the object a non-intervener (§4).

(40) *Object reconstruction for binding feeds subject extraction*
[$_{CP}$ ___ … [$_{vP}$ ~~OBJECT~~ [SUBJECT [$_{VP}$ V OBJECT]]]]
✓

- The status of reflexive objects as in (38) is less clear, and there is no strong evidence that they are DPs or ever move above the subject.
  - If they stay low, or lack [D], this offers an easy explanation for their lack of intervention.
  - If evidence is found in favor of full reflexives moving, the same reconstruction account would apply.

3.3 Interim summary and comparison with other accounts

- We have argued that the following generalization consistently holds:

(41) Mayan EEC generalization
When an interpreted DP object structurally intervenes between the subject and the A'-probe on C^0, the subject is restricted from undergoing A'-extraction.

- The EEC will be generally active in high-abs langauges; these are the languages for which finite Infl^0 is the source of Set B (Coon et al. 2014):

(42) [$_{InflP}$ Infl^0 … [$_{vP}$ OBJECT [SUBJECT [$_{VP}$ V ~~OBJECT~~]]]]
Set B

➽ *Locality* is the problem:

(43) [$_{CP}$ ___ … [$_{vP}$ OBJECT [SUBJECT [$_{VP}$ V ~~OBJECT~~]]]]
✗

- **Evidence comes from environments where the EEC is lifted:**
  1. bare NP objects — no [D] feature, no problem[5]
  2. subject binds into object — high objects must reconstruct for binding
- This account predicts that if in a LOW-ABS language, a particular configuration requires the object to move above the subject, ergative extraction would be similarly restricted.
  - ➽ Tsotsil provides exactly this kind of environment (§A).
- These facts are problematic for alternative accounts of the EEC. Briefly:
  1. At least in Mayan, the EEC cannot be attributed to properties of *ergative subjects* (Deal 2016; Polinsky 2016) — ergative subjects *can* extract, given the right environment.
  2. Licensing-based accounts of Coon et al. (2014) and Assmann et al. (2015) also face problems in accounting for the data above.
     - Examples like (35) and (39) above showed that certain transitive objects may enter into Agree with Infl^0 and the ergative subject may nonetheless extract.

(44) 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'; =(35))

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; =(39b))

- For Assmann et al. (2015), Infl^0 is predicted to never enter into Agree with the object if the subject extracts—this should create a licensing problem.
- The phase-based account of Coon et al. (2014) predicts that any object high enough to enter into Agree with Infl^0 should block the subject from extracting out of the *v*P phase—if we want an account that can capture pan-Mayan properties of AF, this won't work.

Plan: ☑ Desiderata • ☑ The extraction problem • ☐ Deriving EEC • ☐ AF

[5] One environment not discussed above is the behavior of ergative subject extraction from transitive clauses that take a CP-complement; such clauses do employ AF. 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.

4 Deriving the EEC

- Here we offer a formal analysis for the locality problem motivated above, which relies on relativized probing:

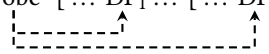
(45) RELATIVIZED PROBING IN MAYAN Ā-MOVEMENT
Ā-probes are relativized to the feature [D].

- This proposal draws on work in Austronesian:
  - Aldridge (to appear) proposes that Austronesian movement to Spec,CP is driven by [φ];
  - Erlewine (2018) argues that in Toba Batak, C^0 and T^0 can be bundled into a single head and probe together.
- ➽ Both proposals then connect extraction asymmetries to nominal licensing: if subjects extract, the object cannot get case from C/T.
- But the Mayan facts above show that this cannot be the problem: objects can enter into Agree with Infl^0, *even when the subject extracts.*

4.1 Relativized probing and the EEC

- Drawing on insights from Béjar and Rezac's (2009) *Cyclic Agree*, Coon and Keine (2018) develop a model of *hierarchy effects*, or configurations whose grammaticality depends on the relative ranking of the two DPs with respect to some hierarchy (e.g. 1>2>3 for person).
- **Core intuition:** hierarchy effects arise from *too much Agree.*

(46) *Feature Gluttony* (Coon and Keine 2018:4)
[Probe^0 [… DP$_1$ … [… DP$_2$ …]]]



  - An articulated probe will Agree with a DP that matches *at least some* of its features (DP$_1$);
  - If there are remaining unvalued features, it will keep searching, entering into additional Agree if it finds a DP that matches the remaining features (DP$_2$).
- ➽ Multiple agreement from a single probe only arises when the lower DP is featurally more highly specified than the higher DP with respect to the probe.

- Multiple Agree relations are not themselves ungrammatical. Instead, it is the way the grammar processes such structures that can lead to ungrammaticality—here, it will create an irresolvable conflict for movement.
- Coon and Keine develop their proposal specifically for φ-features—here we extend it to larger feature sets.

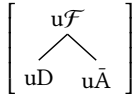
(47) Relativized probing in Mayan Ā-movement
Ā-probes are relativized to the feature [D].

- Following work in Baier 2018, we propose that the feature [D] and the [Ā] are part of *the same* feature geometry:

(48) *Feature geometry $\mathcal{F}$*

- The probe on C⁰ mirrors this structure in Mayan:

(49) *Ā-probe on C⁰*



- C⁰ is searching for both [D] and [Ā] simultaneously:

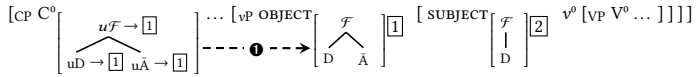
(50) Feature Gluttony configuration in Ā-probing
[$C^0_{[uD,\ u\bar{A}]}$ [… DP.Object$_{[D]}$ … [… DP.Subject$_{[D,\ \bar{A}]}$ …]]]

- Ā-probes relativized to a feature like [D] elsewhere in the literature:
  - van Urk (2015) argues that in Dinka, C⁰ probes for [φ] and [Ā] simultaneously;
  - Aldridge (to appear) proposes that Austronesian movement to Spec,CP is driven by [φ];
  - Erlewine (2018) argues that in the Austronesian language Toba Batak, C⁰ and T⁰ can be bundled into a single head and probe together.
- This work connects more generally to work which argues for a less clear-cut division between C⁰ and T⁰ than commonly assumed (Martinović 2015).

How this works:

- **Ā-objects do not cause gluttony**:

(51) *C⁰ agrees with the object*

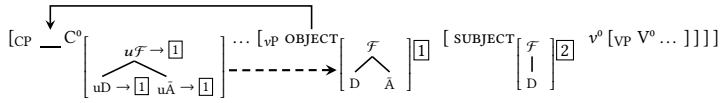


  - The probe on C⁰ first enters into Agree with the object DP.
  - The complete [$\mathcal{F}$] feature geometry is copied to the probe (1), deleting the matching segments [u$\mathcal{F}$], [uD], and [uĀ].

➪ Because C⁰ has no remaining segments, it stops probing, and does not enter into a second Agree relation with the subject.

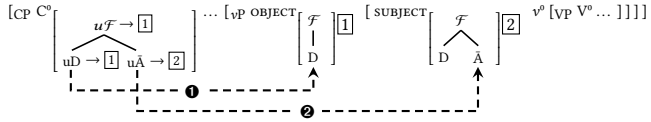
- Across Mayan, C⁰ triggers Ā-movement to Spec,CP of a constituent that it agrees with:

(52) *Ā-movement of the object*



- **Ā-subjects do cause gluttony:**

(53) *Ā-feature on subject ⟶ gluttony*



  - The probe on C⁰ first searches and enters in an Agree relation with the object DP (step ❶). The object's [$\mathcal{F}$] geometry is copied to the probe (1), deleting [u$\mathcal{F}$] and [uD] on the probe.

➽ Because the object lacks [uĀ], that segment remains on the probe, and another round of search is initiated (step ❷).

  - The probe finds matching a matching [Ā] feature on the subject, and the feature geometry of the subject is copied over (2).

- The ungrammaticality of ergative extraction in (53) results from conflicting requirements on movement. Following Coon and Keine's derivation of PCC effects, we invoke two independently-motivated constraints on movement:

  1. *Best Match* requires movement of the DP that matches the **most features** of the probe (see e.g. 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*).
  2. *Attract Closest* requires movement of the **closest** agreed-with DP (*Minimal Link Condition* or *Closest*; Chomsky 1995; Kitahara 1997; Müller 1998; Fitzpatrick 2002; Rackowski and Richards 2005)

- Here, the probe on C^0 will have two sets of features, one from the object and the other from the subject:

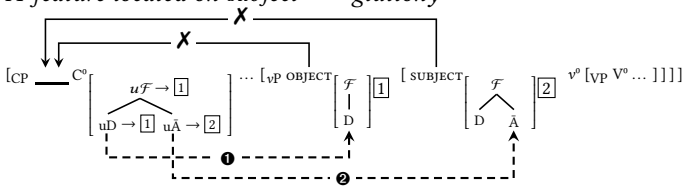
(54) *Features on C^0 after (53)*

$$C^0 = \left\{ \left[\begin{array}{c} \mathcal{F} \\ | \\ \text{D} \end{array} \right]\boxed{1}, \left[\begin{array}{c} \mathcal{F} \\ \text{D} \quad \bar{\text{A}} \end{array} \right]\boxed{2} \right\}$$

  - ➪ The subject qualifies as the Best Match for C^0.
  - ➪ The object DP is closer to Spec,CP.

- We take these two constraints are *unranked* and *inviolable*, giving rise an irresolvable conflict:

(55) *Ā-feature located on subject ⟶ gluttony*



- In Mayan languages, Ā-movement is obligatory (no *wh*-in-situ), and only a single element may occupy Spec,CP.

Plan: ☑ Desiderata • ☑ The extraction problem • ☑ Deriving EEC • ☐ AF

5 The solution(s)

- Movement of the object above the transitive subject (HIGH-ABS), together with the relativization of the Ā-probe to search for [D] and [Ā], conspire to trap the subject in its position, yielding the EEC.

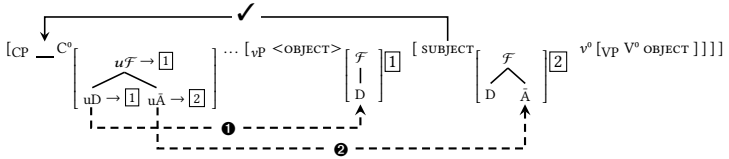
- We predict environments in which a DP object does not intervene to permit extraction:

(56) EEC LIFTED IN HIGH-ABS LANGUAGES
  a. object is a bare NP
  b. object is a reflexive or extended reflexive

- Under a gluttony account, **NP objects** are not targeted by the probe, which is relativized to [D] (no gluttony!)

- **Reflexive objects** reconstruct for binding:

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



- Two possibilities for (extended) reflexives (57):

  (i) Only the lower (interpreted) copy of the object is relevant for the calculation of *Attract Closest* (traces are non-interveners: Chomsky 1993; Bobaljik 1995, 2002; Hornstein 1995).
    - ➪ The subject is both *Closest* and the *Best Match*; no movement conflict arises.

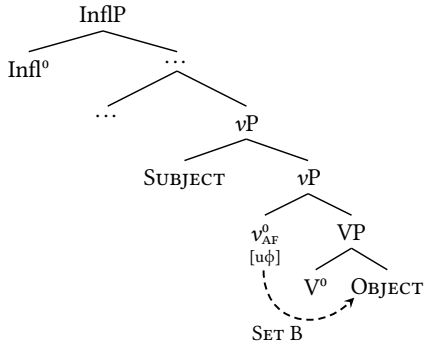
  (ii) Both copies of the object are relevant for the calculation of *Attract Closest*, which means that two conflicting sets of c-command relations between the subject and object must be evaluated.
    - ➪ Neither the subject *nor* the object are favoured by *Attract Closest*;
    - ➪ The subject is the *Best Match*; no movement conflict arises.

- **In the last part of this talk:** Agent Focus constructions circumvent the EEC by permitting the object to *remain below* the Ā-subject.

5.1 Q'anjob'alan

- We adopt the general analysis of Q'anjob'alan AF proposed in Coon, Mateo Pedro, and Preminger 2014: AF is a v^0 head which:
  - introduces the transitive subject but *does not* enter into Agree with the subject (no Set A);
  - does *not* induce raising of the object (i.e. no EPP);
  - enters into Agree with the transitive object, resulting in the Set B clitic.

(58) *Q'anjob'alan AF*



- This results in the two important properties of Q'anjob'alan AF:
  1. Set B in Q'anjob'alan AF consistently indexes the *object*;
  2. AF morphology appears in *nonfinite embedded transitives*:

(59) Chi uj [hach y-il-**on**-i].
ASP be.able.to B2S A3S-see-AF-ITV
'She can see you.' (Q'anjob'al; Coon et al. 2014, 180)

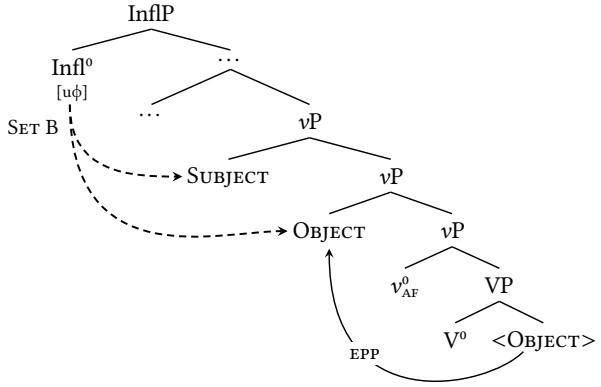
- Abstracting away from the nominal licensing account in Coon et al. 2014, v_{AF} is used in nonfinite embedded transitives in Q'anjob'al because it permits realization of Set B even in the absence of finite Infl^0.
  - Historical note: AF in many Mayan languages is cognate with *antipassive* (Smith-Stark 1978). This is mysterious under an account in which the AF head *licenses* the object.
  - Here, the crucial property of the v_{AF} is the lack of an EPP feature—compatible with work which takes antipassive objects to remain low (see Polinsky 2017 for an overview).

5.2 K'ichean Proper

- Our account of K'ichean AF adapts that of Levin 2018.
  - As in Q'anjob'alan, v_{AF} introduces the transitive subject but does not enter into Agree (no Set A);
  - The AF head in K'ichean *does* trigger movement of the object, but the resulting configuration is different, shown in (60).

- Movement triggered by v_{AF} causes the object to occupy a specifier equidistant with the subject to higher probes (see e.g. Hornstein 2009; Oxford to appear):

(60) *K'ichean Proper AF*



- This accounts for the special properties of K'ichean AF:
  1. The realization of Set B is hierarchically governed (§2.3.2)—this is expected if the subject and object occupy outer specifiers of v^0 and are both accessible to an articulated [φ]-probe on Infl^0.
  2. Nonfinite embedded transitives are ineffable in K'ichean (14); we do not expect the AF head to provide a rescue since—unlike in Q'anjob'alan—K'ichean v_{AF} does not trigger the realization of Set B.

When C^0 probes the structure in (60)…

- The probe on C^0 will encounter the subject and the object together. Attract Closest will favor neither.
- Since the subject satisfies all of the features on C^0 ([D], [Ā]), it alone qualifies as Best Match and the subject is successfully attracted to Spec,CP.

6 Summary and conclusion

- Two special factors in Mayan conspire to result in extraction restrictions:
  1. In HIGH-ABS languages, the transitive object moves *above* the subject, causing the object DP to be more local to C^0.
  2. The Ā-probe on C^0 is relativized to search simultaneously for [Ā] and [D] features.

Regarding object movement

- Ergative extraction asymmetries appear in a subset of morphologically ergative languages.
- Here, the Mayan EEC is connected directly to morphological ergativity: objects in HIGH-ABS languages enter into Agree with Infl^0; agreement with transitive subjects occurs in situ (i.e. inherent ergative agreement).
- Variation in the EEC can be tied to independent variation in the source of "absolutive" (Legate 2008), but with more nuance than reported in Coon et al. 2014:
  - In a language where finite T^0/Infl^0 is responsible for absolutive clitics/agreement, we expect (all else being equal) the object to raise and create an EEC.
  - In Mayan languages in which the source of absolutive is low, we don't find an EEC; though nothing rules out the possibility that objects nonetheless raise above the subject.
  - ➪ This is in line with Legate (2012), who proposes that absolutive has a *low* source in Dyirbal, which nonetheless shows effects of an EEC.

Regarding the mixed probe

- The idea that C^0 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.
  - However, unlike some of these works, Mayan provides evidence that licensing of the object should not be the problem in Ā-extraction contexts.
  - Instead, we propose that the problem results from a movement conflict created by a gluttonous probe (Coon and Keine 2018).
- The accounts developed in those works blur the line between A- and Ā-movement, and the roles associated with T^0 and C^0 in driving movement.
  - Note that Mayan languages conspicuously lack processes associated movement to T^0/Infl^0: there are no raising verbs, and no evidence that unaccusative or passive subjects A-move.
  - If A-movement is triggered by nominal features like [D] or [φ] (van Urk 2015), then the fact that C^0 is the locus of [D] probing in Mayan could be behind this absence.

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A Which arguments trigger AF?

- Variation has also been described in which arguments, or combinations of arguments, trigger AF.
- Three different patterns have been described in the **relevance of the person features** of the nominal arguments (Stiebels 2006; Aissen 2017b; Watanabe 2017):

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

- **Things are simpler than they appear**; apparent variation can be traced back to independent differences among these languages.
- The EEC holds *whenever* the object moves to a position above the subject in a Mayan transitive clause—regardless of the person features of either argument.

"At least one DP must be 3rd person" (K'ichean Proper)

- This pattern is described in languages which show the hierarchically-governed pattern of Set B realization:

(62) 1/2 ≫ 3 plural ≫ 3 singular

- 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 (Dayley 1978; Larsen 1988; Preminger 2014):

(63) *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)

- This is a morphological restriction, banning multiple Set B clitics—it does not have to do with syntactic exractability (§5)

"The agent must be 3rd person" (Q'anjob'alan)

- In Q'anjob'alan languages, AF is reported to only occur with 3rd person agents; 1st and 2nd person agents appear to extract directly from transitive forms:

(64) 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'.
1S PFV A1-hit CLF dog
'*I* hit the dog.' (Q'anjob'al; Coon et al. 2014, 223)

- In Q'anjob'alan languages, the 1st and 2nd person elements in the left periphery are not pronouns (Mateo Pedro 2001; Pascual 2007; Scharf 2016)—no true extraction has taken place.
- 1st and 2nd person "pronouns" in Q'anjob'al are ungrammatical in postverbal subject position (compare e.g. K'iche' in (24b) above)

(65) 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.'

The ungrammaticality of (65b) contrasts with 3rd person subjects, which appear in postverbal position in discourse-neutral contexts, as in (66).

(66) Max way **ix Malin**.
PFV sleep CLF Malin
'Maria slept.'

- Mateo Pedro (2001): 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)
- All A'-extracted DPs in Q'anjob'alan require AF; 1st and 2nd person elements like *ayin* in (64b) have not extracted from subject position.

"Both agent and patient must be 3rd person" (Tsotsil)

- 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, intransitive status suffixes appear, and a cognate form of the AF suffix appears on the stem.
- However, Tsotsil AF occurs only when *both arguments are 3rd person* (Haviland 1981; Aissen 1999, 2017a). Compare the 3>3 forms in (67a) and (67b), with the ungrammatical form in (67c).

(67) 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)

- While AF is limited to agent extraction in 3>3 contexts, not all 3>3 environments with extracted agents require AF; this results in potential ambiguity for combinations of 3rd persons:

(68) 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 (1999): the choice between a transitive or AF form depends on a variety of factors related to the *relative prominance* of subject and object DPs: animacy, definiteness, individuation, and discourse role.
  - "the AF form requires that the object be more prominent than the subject; the TV form requires roughly the opposite" (Aissen 1999, 459)

(69) K'usi i-s-ti'?
what PFV-A3-bite/eat
'What did he eat?' / *What bit him?'

- Aissen (1999) 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).
- We propose, 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 DP must c-command the obviative DP**.

(70) [SUBJ$_{PROX}$ [$_{VP}$ V OBJ$_{OBV}$]] *direct*

(71) [OBJ$_{PROX}$ [SUBJ$_{OBV}$ [$_{VP}$ V ~~OBJ$_{PROX}$~~]]] *inverse*

- If the proximate argument is generated as the patient, it must move to a position above the agent—mirroring the HIGH-ABS pattern (§2.2).
- Again, the EEC generalization holds: only in inverse contexts (which necessarily involve multiple 3rd persons), do Tsotsil objects raise above the subject, preventing subject extraction.

Abbreviations

We follow Leipzig glossing conventions with the addition of the following abbreviations: A – "Set A" (ergative/possessive); AF – Agent Focus; B – "Set B" (absolutive); COM – completive; DIM – diminutive; DIR – directional; DTV – derived transitive status suffix; ENC – enclitic; EXIST – existential; FOC – focus; INCL – incompletive; ITV – intransitive status suffix; OBJ – obviative; P – plural; PROX – proximate; RN – relational noun; S – singular; TV – transitive status suffix; WH – wh-word.

In some cases, we have modified glosses, translations, 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' notes. Translations from Spanish are our own.