Object raising bleeds binding:
A new correlate of high-absolutive syntax in Mayan

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1   Introduction

A major line of inquiry in Mayan linguistics surrounds the Ergative Extraction Constraint (EEC):

(1)   The Ergative Extraction Constraint: (Larsen and Norman 1979, Aissen 2017, a.o.)
A subset of Mayan languages restricts the extraction of transitive subjects (A).

(2)   Chuj → EEC
*Mach ix-ach-y-il-a'?
who   pfv-b2s-a3-see-iv
'Who saw you?'

(3)   Ch'ol → no EEC
Maxki tyi y-il-ä-yety?
who   pfv a3-see-tv-b2
'Who saw you?'

In languages that exhibit the EEC, an Agent Focus (AF) construction is used instead:

(4)   Chuj   → no Set A (ergative) on the verb + AF suffix on verb stem
Mach ix-ach-il-**an**-i?
who pfv-b2s-see-af-iv
'Who saw you?'

Two main families of approaches to the EEC (Aissen 2017):

(5)   Object raising approach (Campana 1992, Ordóñez 1995, Coon et al. 2014, Coon et al. 2021)
O(bject) systematically raises over A, blocking A from extracting.

$$[_{CP} \underline{} \ldots [_{vP} \text{ OBJECT } [\text{ SUBJECT } [_{VP} \text{ V } <\text{OBJECT}>]]]]$$
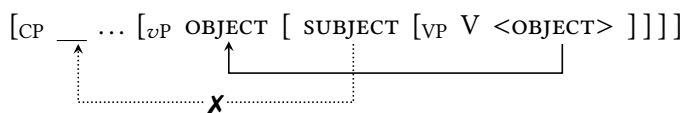
(6)   Other approaches that <u>don't posit object raising</u>:
   a.   Agent Focus resolves ambiguities (Craig 1976, Stiebels 2006)
   b.   Agent Focus circumvents high-ranking constraints on local movement (Erlewine 2016)
   c.   The Agent Focus is needed because the extraction of the agent would block obligatory agreement between T^0 and the object (Assmann et al. 2015)

Our goal today

Describe a new correlate of object raising, having to do with how **covalued nominals** are distributed across Mayan languages.

→   In doing so, we provide support for the object raising approach to the EEC.

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2   Background

2.1   Chuj and Ch'ol

Our empirical focus will be Chuj and Ch'ol, two Mayan languages.

(7)   Chuj

   a.   Belongs to the Q'anjob'alan sub-branch of Mayan languages   (Law 2014)
   b.   Spoken by 70,000 speakers   (Piedrasanta 2009; Buenrostro 2013)
   c.   Predominantly spoken in Huehuetenango, Guatemala and Chiapas, Mexico

(8)   Ch'ol

   a.   Belongs to the Cholan-Tseltalan sub-branch of Mayan languages   (Law 2014)
   b.   Spoken by 252,000 speakers   (Vázquez Álvarez 2011, Little 2020)
   c.   Predominantly spoken in Southern Mexico

- Original elicitation with speakers of San Mateo Ixtatán Chuj and Tila Ch'ol, using a hypothesis-driven fieldwork methodology (Matthewson 2004, a.o.).
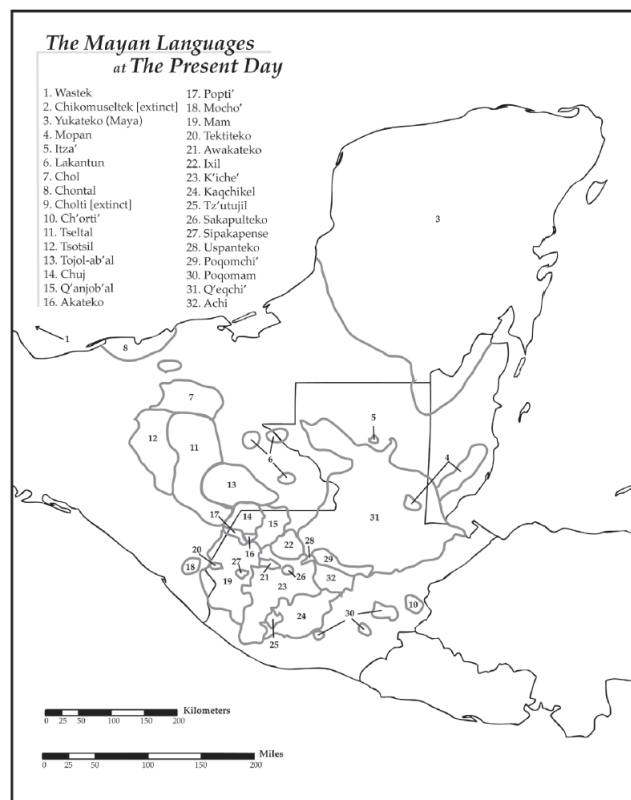

Figure 1: Current-day Mayan-speaking area (Law 2014, p. 25)

2.2 The 'high-absolutive' approach to the EEC

Building on Campana 1992 and other work on languages with extraction constraints (see Deal 2017 for an overview), Coon, Mateo Pedro, and Preminger (2014) propose that the presence or not of the EEC is related to a deep syntactic parameter in Mayan regarding the syntactic position of the object.

- '**High absolutive**' languages: transitive object (O) consistently raises above transitive subject (A).

 (9) Raising of O blocks extraction of A in high-abs languages
       $[_{CP}$ __ … $[_{vP}$ OBJECT $[$ AGENT $[_{VP}$ V ~~OBJECT~~ $]]]]$
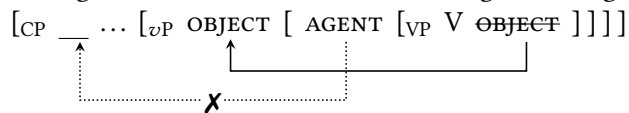
- This creates an INTERVENTION problem for A extraction (formalized differently in different works).

  – Coon et al. (2014, 2021): With AGENT FOCUS, O does not raise, and A can extract.

- '**Low absolutive**' languages, O does **not** raise above A, and so there is no EEC.

  (10) A can extract in low-abs languages
        $[_{CP}$ __ … $[_{vP}$ $[$ AGENT $[_{VP}$ V OBJECT $]]]]$
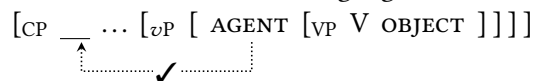
Already known correlates: Coon et al. (2014) identify correlates of object raising:

1. The relative position of absolutive (Set B) morphemes (see also Tada 1993):

   (11) a. Verb stem in high-absolutive languages
             TAM - **Set B** - Set A - verb - suffixes
         b. Verb stem in low-absolutive languages
             TAM - Set A - verb - suffixes - **Set B**

2. The *availability* of Set B morphemes in nonfinite clauses (see Coon et al. 2014 for details).

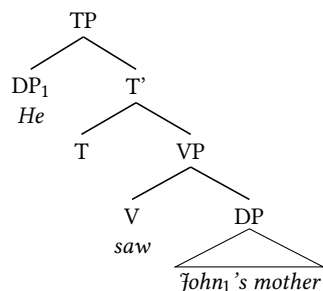**Next:** We identify a new correlate related to patterns of nominal binding and covaluation.

3 A new prediction of object raising

Assuming the existence of a universal set of Binding Conditions (Reinhart 1983, Chomsky 1986, Grodzinsky and Reinhart 1993), OBJECT RAISING might have implications for the distribution of covalued nominals.

(12)   **Condition C**
       A non-pronominal DP (aka R-expression) must be free (not c-commanded by a co-indexed DP).
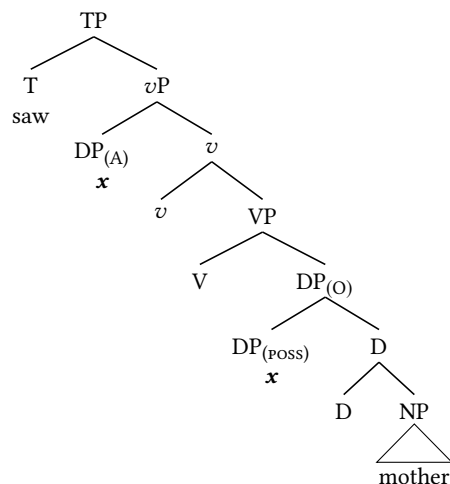
(13)   a.   *He$_1$ saw John$_1$'s mother.
       b.

```
                TP
              /    \
          DP_1      T'
           He      /   \
                  T      VP
                        /   \
                       V     DP
                      saw   /    \
                        John_1's mother
```

- The subject in (13b) c-commands the possessor of the object, leading to a violation of Condition C.

- We adopt the 'standard definition' of c-command (Reinhart 1976).

In **low-abs** (non-EEC) languages, without object raising, we will expect the same kind of syntax as English:

(14)   a.   'Mary$_x$ saw her$_x$ mother.'
       b.   saw [$_O$ x's mother] [$_A$ x]
       c.

```
                TP
              /    \
            T        vP
           saw     /    \
             DP_(A)       v
                x       /   \
                       v     VP
                            /    \
                           V      DP_(O)
                                 /      \
                          DP_(POSS)      D
                              x         /  \
                                       D    NP
                                          mother
```

(note: we ignore word order for the purposes of illustration; see Clemens and Coon 2018 and Little 2020 for existing proposals).
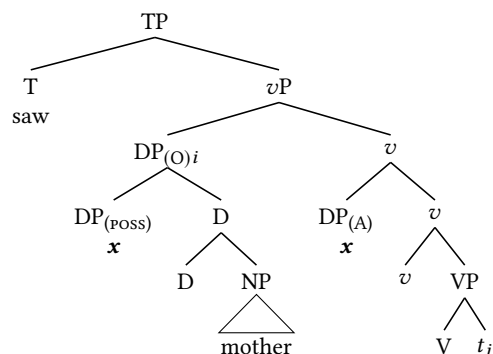
But in **high-abs** (ECC) languages, object raising should have an important consequence:

(15)   Consequence of OBJETO RAISING
       Raising of O over A will undo structural relations between covalued nominals, bleeding otherwise expected Condition C violations.

(16) EEC language → A does not c-command POSSESSOR of O

    a. 'Mary$_x$ saw her$_x$ mother.'

    b. saw [$_O$ $\boldsymbol{x}$'s mother] [$_A$ $\boldsymbol{x}$]

    c.

```
                        TP
                    ┌────┴────────┐
                    T            vP
                   saw      ┌─────┴──────┐
                        DP(O)i           v
                      ┌───┴───┐      ┌───┴───┐
                  DP(POSS)    D    DP(A)     v
                     x     ┌──┴──┐   x    ┌──┴──┐
                          D    NP        v    VP
                              ╱  ╲           ╱  ╲
                            mother          V   t_i
```

    - Nb. we assume that object raising is an instance of 'A-movement' (Coon et al. 2021), and that Condition C does not reconstruct for A-movement (Chomsky 1995, Lasnik 1999, Fox 1999).

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Crucial point: We should expect Condition C effects from A into O in low-abs (non-EEC) Mayan languages like Ch'ol, but not in high-abs (EEC) Mayan languages like Chuj.

4   A new correlate of OBJET RAISING

Taking Ch'ol (no EEC) and Chuj (EEC) as examples, we show that the distribution of covalued nominals is affected by object raising.

(17)   **The main generalization (Royer 2021)**

    a. In Ch'ol, whenever the A is covalued with a nominal inside the O, R-expressions must be realized in A (Condition C is active).

    b. In Chuj, whenever the A is covalued with a nominal inside the O, R-expressions must be realized <u>in whichever expression comes linearly first</u> (Condition C is irrelevant).

4.1   Object A'-extraction

The difference between Ch'ol and Chuj is highlighted in cases of object A-**bar** extraction, <u>which we assume obligatorily reconstruct for Condition C</u> (Chomsky 1995, Lasnik 1999, Fox 1999):

(18)   Ch'ol (like English) → Condition C active

    a. [$_O$ I-wakax [$_{POSS}$ *pro*]]$_i$ tyi i-choñ-o t_i [$_A$ **aj-Ana**].
        A3-cow   PRON   PFV A3-sell-TV   CLF-Ana
        'It's her$_1$ cow that Ana$_1$ sold.'

    b. *[$_O$ I-wakax [$_{POSS}$ **aj-Ana**]]$_i$ tyi i-choñ-o t_i [$_A$ ***pro***].
        A3-cow   CLF-Ana   PFV A3-sell-TV   PRON
        Cannot mean: 'It's her$_1$ cow that Ana$_1$ sold.'
        Could mean: 'It's Ana$_2$'s cow that she$_1$ sold.'

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(19)   Chuj → Condition C is <u>not</u> active

    a.   *[$_O$ Ha s-mam   [$_{POSS}$ ***pro***]]$_i$ ix-y-il t_i [$_A$ **waj Xun**   ].
        FOC A3-father   PFV-A3-see   CLF Xun
        Intended: 'It's his$_1$ father that Xun$_1$ saw.'

    b.   [$_O$ Ha s-mam   [$_{POSS}$ **waj Xun**]]$_i$ ix-y-il-a' t_i [$_A$ ***pro***].
        FOC A3-father   CLF Xun   PFV-A3-see-TV   PRON
        'It's his$_1$ father that Xun$_1$ saw.' / Lit: 'It's Xun$_1$'s father that he$_1$ saw.'

4.2   *In situ* arguments

The previous examples involved 'extended reflexives' (Aissen 1997): the A is coreferetial with the possessor of O—without object A'-extraction, Ch'ol and Chuj are identical on the surface.

(20)   Ch'ol extended reflexive
    Tyi i-choñ-o   i-wakax aj-Ana.
    PFV A3-sell-TV A3-cow CLF-Ana
    'Ana$_1$ sold her$_1$ cow.'

(21)   Chuj extended reflexive
    Ix-s-chonh s-wakax ix   Ana.
    PFV-A3-sell A3-cow CLF Ana
    'Ana$_1$ sold her$_1$'s cow.'

But there is evidence that the right parse for Ch'ol is (22a), but (22b) in Chuj:

(22)   a.   sold [$_O$ cow [$_{POSS}$ *pro*$_1$]] [$_A$ Ana$_1$]   (lit: Ana$_1$ sold her$_1$ cow)
    b.   sold [$_O$ cow [$_{POSS}$ Ana$_1$]] [$_A$ *pro*$_1$]   (lit: She$_1$ sold Ana$_1$'s cow)

To see this evidence, first note that adverbs exhibit flexible placement options in both languages:

(23)   Ch'ol/Chuj adverb placement options (for some adverbs at least):

    a.   Tyi i-chok-o   [$_O$ tyuñ] {**abi**}   [$_A$ jiñi alob] {**abi**}.
        PFV A3-throw-TV   stone   yesterday   DET boy   yesterday
        'The boy threw the stone yesterday.'   (Ch'ol)
    b.   S-b'o'   [$_O$ tek   ] {**junelxo**} [$_A$ waj Xun] {**junelxo**}.
        A3-make   meal   again   CLF Xun   again
        'Xun made the meal again.'   (Chuj)

But this changes when we consider minimal counterparts of the sentences in (23) as extended reflexives:

(24)   Ch'ol and Chuj adverb placement options now diverge:

    a.   Tyi i-chok-o   [$_O$ $\boxed{i}$-tyuñ] {**abi**}   [jiñi alob] {**abi**}.
        PFV A3-throw-TV   A3-stone   yesterday   DET boy   yesterday
        'The boy$_1$ threw his$_1$ stone yesterday.'   (Ch'ol)
    b.   S-b'o'   [$_O$ $\boxed{s}$-tek   ] {***junelxo**} [waj Xun] {**junelxo**}.
        A3-make   A3-meal   again   CLF Xun   again
        'Xun$_1$ made his$_1$ meal again.'   (Chuj)

This makes sense if Ch'ol exhibits (25a), but Chuj the Condition-C violating parse in (25b):

(25)   a.   threw [$_O$ stone [$_{POSS}$ *pro*$_1$]] [$_A$ the boy$_1$]   Ch'ol: (24a)
    b.   made [$_O$ meal [$_{POSS}$ Xun$_1$]] [$_A$ *pro*$_1$]   Chuj: (24b)

Summary: We proposed a new correlate of OBJECT RAISING: it bleeds expected violations of Condition C by undoing structural relations from the A into the O.

Prediction for the Mayan language family: The proposal makes an important typological prediction:

(26)   a.   EEC (high-abs) languages should behave like Chuj regarding Condition C effects.
       b.   non-EEC (low-abs) languages should behave like Ch'ol.

Preliminary evidence suggests that this prediction is borne out.

High-absolutive (EEC) languages (see also Craig 1977 on Popti'):

(27)   [$_{OBJ}$ A   no' s-wakax [$_{POSS}$ **naq Xhunik**]] max s-txon-o' [$_{SUBJ}$ ***pro***   ].
            FOC CLF A3-cow   CLF Xhunik   PFV A3-sell-IV   PRON
       'Xhunik$_1$ sold HIS$_1$ COW.'   (Q'anjob'al)

(28)   [$_{OBJ}$ A   t-chej   [$_{POSS}$ **Xwan**]] o   tz'-ok   t-b'yo-'n [$_{SUBJ}$ ***pro***] .
            DET A3s-horse   Xwan   PFV B3s-DIR A3s-hit-DS   PRON
       'Xwan$_1$ hit HIS$_1$ HORSE.'   (San Juan Atitán Mam)

(29)   [$_{OBJ}$ Ja   ri   ru-wakx [$_{POSS}$ **ri   xta Ana**]] x-u-k'ayi-j   [$_{SUBJ}$ ***pro***] .
            FOC DET A3s-cow   DET CLF Ana   PFV-A3-sell-DTV   PRON
       'Ana$_1$ sold HER$_1$ COW.'   (Kaqchikel)

Low-absolutive (non-EEC) languages:

(30)   [$_{OBJ}$ Ja' ja   s-wakax [$_{POSS}$ ***pro***   ]] x-chon-a   [$_{SUBJ}$ **ja   Jwan-i'**   ].
            FOC DET A3-cow   PRON   A3-sell-TV   DET Jwan-DET
       'Jwan$_1$ sold HIS$_{1/*2}$ COW.'   (Tojol-ab'al)

(31)   [$_{OBJ}$ Ja' x-wakax [$_{POSS}$ ***pro***]] la   x-chon [$_{SUBJ}$ **te   j-Wan-e**   ].
            FOC A3-cow   PRON   PFV A3-sell   DET CL-Wan-DET
       'Wan$_1$ sold HIS$_{1/*2}$ COW.'   (Tseltal)

Historical Mayanists converge in saying Chuj is more closely related to Ch'ol, Tojol-ab'al and Tseltal than it is to Mam or Kaqchikel (Law 2014).

▶ The covaluation facts are not a historical accident regarding sub-groupings of Mayan languages.

Crucially: The above data provide strong empirical support for the connection between the EEC and OBJECT RAISING (Coon et al. 2014, Coon et al. 2021).
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A note on linear precedence: En (17), not only did we propose that Condition C is not operative in the relevant Chuj sentences, we also proposed that <u>linear precedence</u> plays a role.

(32)   Two constraints on nominal covaluation, see Royer 2021 for more evidence.
       a.   If a nominal is bound, it is subject to structurally-sensitive binding conditions (linear precedence is irrelevant).
       b.   If a free pronoun is covalued with an R-expression, the R-expression must precede the free pronoun (linear precedence is relevant).

   - While (32a) is likely universal (Reuland 2010, 2011), (32b) is probably subject to variation.

   - The fact that linear precedence matters is not an idiosyncrasy of Chuj: Craig (1977), Trechsel (1995) y Aissen (2000) describe similar facts in Popti'.

And there's independent evidence for the linear precedence constraint in (32b), <u>in both Chuj and Ch'ol</u>:

(33)   Covaluation between free nominals in Chuj → linear precedence matters.

a.   Tz-s-chamk'ol-ej [OBJ s-tz'i' **ix Ana**] [SUBJ ix ix   ix-lolon   y-et'ok ***pro***].
     IPFV-A3-like-DTV   A3-dog CLF Ana   CLF woman PFV-speak A3-with PRON
     'The woman that spoke with Ana₁ likes her₁ dog.'

b.   *Tzschamk'olej [OBJ stz'i' ***pro***] [SUBJ ix ix ix-lolon y-et' **ix Ana**].
     Intended: 'The woman that spoke with her₁ likes Ana₁'s dog.'

(34)   Covaluation between free nominals in Ch'ol → linear precedence matters

a.   Tyi i-pejk-ä   [OBJ **aj-Rosa**] [SUBJ jiñi x-'ixik   [ta'=bä i-k'el-e   ***pro***]].
     PFV A3-speak-DTV   CLF-Rosa   DET CLF-woman PFV=REL A3S-see-TV PRON
     'The woman who saw Rosa₁ spoke with her₁.'

b.   *Tyi ipejkä [OBJ ***pro***] [SUBJ jiñi x'ixik [RC ta'bä ik'ele **ajRosa**]].
     Intended: 'The woman who saw her₁ spoke with Rosa₁.'

Therefore: We have a unified set of constraints on nominal covaluation in Ch'ol and Chuj—those in (32).

- The only difference is that OBJECT RAISING feeds the application of rule (32b), explaining the central role linear precedence seems to play in Chuj.

- **Prediction**: When there is c-command between covalued nominals in Chuj, the Binding Conditions should apply and linear precedence should be irrelevant (Royer (2021, §5): this is borne out).

5   Conclusions

The data from binding and nominal covaluation in Mayan support **object raising** approaches to the EEC.

- New correlate: OBJECT RAISING bleeds otherwise expected violations of Condition C.

- Doubts on accounts without object raising (e.g. Stiebels 2006, Assmann et al. 2015, Erlewine 2016): How could these explain the split in the treatment of covalued nominals across Mayan?

Future work: More data, both Mayan-internally and cross-linguistically, on the potential relation between extraction asymmetries, systematic object raising, and petterns of binnding and nominal covaluation.

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