Binding and anti-cataphora in Mayan

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1 A binding puzzle from Mayan

A long-standing question in linguistic theory:

(1) What regulates the distribution of covalued nominal expressions?
→ Where "covaluation" ≈ sameness of semantic value (Heim 2007; Sharvit 2011)

Many, many attempts at answering this question [see e.g.: Lees and Klima 1963; Ross 1967; Langacker 1969; Jackendoff 1972; Reinhart 1976, 1983; Chomsky 1981, 1986; Lebeaux 1984; Reuland and Koster 1991; Pollard and Sag 1992; Grodzinsky and Reinhart 1993; Reinhart and Reuland 1993; Hornstein 2001, 2007; Reuland 2001, 2011; Kayne 2002; Zwart 2002; Safir 2004, 2008, 2014; Büring 2005; Schlenker 2005; Hicks 2009; Kratzer 2009; Rooryck and vanden Wyngaerd 2011, Drummond et al. 2011; Despić 2013, 2015; Bruening 2014, Bruening to appear; Ahn 2015; Charnavel and Sportiche 2016...]

However: Since Chomsky 1981 and Reinhart 1983, the empirical generalizations have remained remarkably constant — most authors still aim to derive (2):

(2) *The binding conditions*

Condition A	–	An anaphor must be locally bound	(e.g. *themself*)
Condition B	–	A pronoun must be locally free	(e.g. *them*)
Condition C	–	An R-expression must be free	(e.g. *Kim*, *the person*)

Most authors also still assume that 'binding' is sensitive to c-command:

(3) Classic definition of binding
NP_A binds NP_B iff (i) NP_A c-commands NP_B and (ii) NP_A and NP_B are covalued.

The binding conditions in (2) hold across a great many languages, suggesting that they reflect a universal property of language.

- Despite some variation, *stability* in binding patterns across languages (Reuland 2010, 2011).
- Evidence from acquisition and aphasic patients (see e.g. Grodzinsky et al. 1993).

Today's puzzle
A subset of Mayan languages appear to seriously challenge the claim that the Binding Conditions are universal (Craig 1977, Hoekstra 1989, Aissen 2000).

- Assuming subjects c-command objects, VOS sentences like (4) and (5) should be parsed as (6):

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

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

(6) Condition C abiding parse
sold [$_{OBJ}$ cow [$_{POSS}$ *pro*$_1$]] [$_{SUBJ}$ Ana$_1$] = Ch'ol (4)

- **Yet**: we'll see extensive evidence that Chuj exhibits Condition-C violating parses like (7).

(7) Condition C violating parse (Lit: *She*$_1$ *sold Ana*$_1$*'s cow*)
sold [$_{OBJ}$ cow [$_{POSS}$ Ana$_1$]] [$_{SUBJ}$ *pro*$_1$] = Chuj (5)

- Instead, Chuj requires realizing the R-expression in the linearly first position.

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Main questions
1. What is the source of variation between Ch'ol and Chuj?
2. Why does Chuj get to ignore the Binding Conditions (at least apparently)?

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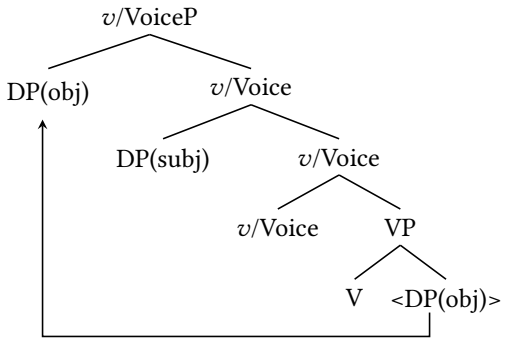
Roadmap:

§2/§3 – Data: Chuj but not Ch'ol often violates the binding conditions (favouring precedence).

§4 – The binding violations are an *illusion*, because consistent object raising in Chuj (Coon et al. 2014) bleeds otherwise expected c-command relations:

(8) *High-absolutive syntax (Chuj)*



§5 – Free pronouns are subject to an **anti-cataphora** constraint, applying to Chuj and Ch'ol.

§6 – Evidence that the Binding Conditions are actually active in Chuj.

Outcome: (i) binding theory remains intact & (ii) more evidence for consistent object raising in a subset of Mayan languages (Coon et al. 2014).

2 Background on Chuj and Ch'ol

(9) Chuj

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

(10) Ch'ol

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

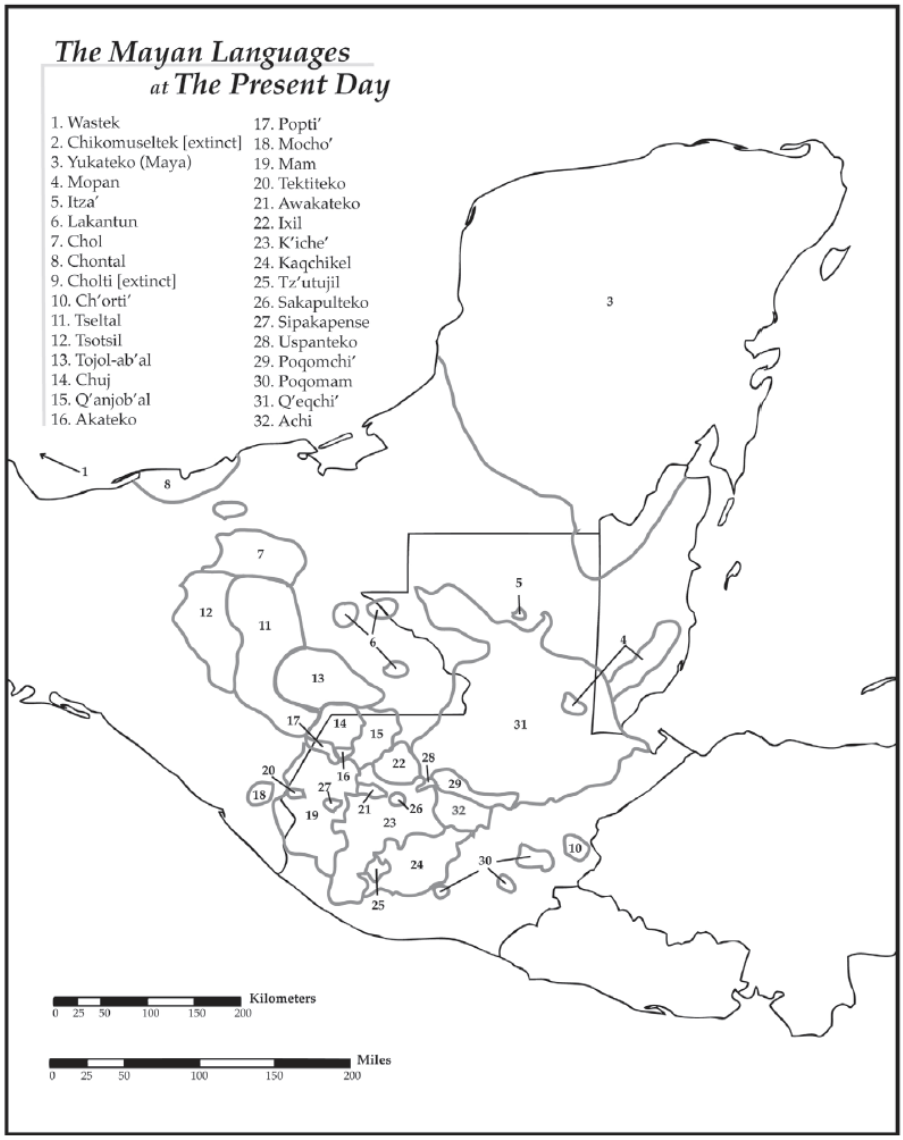


Figure 1: Current-day Mayan-speaking area (Law 2014, p. 25)

The verb and clause
Head-marking, ergative-absolutive, verb-initial word order in discourse-neutral contexts.

(11) a. Ix-**s**-chi' [$_{OBJ}$ nok' mis] [$_{SUBJ}$ nok' tz'i'].
PFV-A3-bite CLF cat CLF dog
'The dog bit the cat.' (Chuj)

b. Tyi **i**-k'ux-u [$_{OBJ}$ mis] [$_{SUBJ}$ jiñi ts'i'].
PFV A3-bite-TV cat DET dog
'The dog bit the/a cat.' (Ch'ol: Coon 2010a, 43)

- Set A morphemes cross-reference ergative subjects and possessors.

(12) A-VERB [OBJECT] [SUBECT]

(13) [A-POSSESSEE [POSSESSOR]]

- Set B morphemes cross-reference absolutive subjects/objects (no overt Set B morpheme).

(14) Ix-**in**-**a**-chel-a'.
PFV-B1S-A2S-hug-TV
'You hugged me.' (Chuj)

(15) Tyi **a**-mek'-e-**yoñ**.
PFV A2-hug-TV-B1
'You hugged me.' (Ch'ol)

Pronominal expressions in Mayan
Most Mayan languages are robustly *pro*-drop, including Ch'ol:

(16) Tyi i-män-ä [$_{OBJ}$ *pro*] [$_{SUBJ}$ *pro*].
PFV A3-buy-TV PRON PRON
'She bought it.' (Ch'ol)

But Chuj is different: it has third person pronouns that are not clearly pro-drop.

(17) Chuj "classifier pronouns" (covary w.r.t. to male, female, animal, plant, etc.)

a. Ix-s-man [$_{OBJ}$ jun **te'** onh] [$_{SUBJ}$ **winh** winak].
PFV-A3-buy INDF CLF avocado CLF man
'The boy bought an avocado.' (determiner use)

b. Haxo ix-s-lo' [$_{OBJ}$ ***(te')**] [$_{SUBJ}$ ***(winh)**].
and.then PFV-A3-eat CLF.PRON CLF.PRON
'And then he ate it.' (pronoun use)

Null *pro* (focus of this paper)
There are special circumstances where a classifier pronoun cannot be used [Nb. *pro* is restricted to certain 'clausal' or 'prosodic domains' (see Aissen 2000, Royer 2022 for details). This is not crucial for today.]:

(18) Chuj: joint reference = use of *pro* enforced.
Ix-lolon [$_{SUBJ}$ waj Xun] [$_{PP}$ y-et' ix s-nun ***pro*/#winh**].
PFV-speak CLF Xun A3-with CLF A3-mother PRON
'Xun$_1$ spoke with his$_1$ mother.' / with CLF: disjoint reading forced.

3 Binding violations in Chuj, but not in Ch'ol

Main point:
Linear precedence = crucial for covalued nominals in Chuj, but not in Ch'ol:

(19) Superficial generalization in Chuj
If covalued expressions appear in the same clause, the linearly first must be an R-expression, and the rest are realized as *pro*.

(20) Superficial generalization in Ch'ol
Ch'ol abides by the Binding Conditions and linear precedence is irrelevant.

Area of evidence 1: Possessors and 'extended reflexive' constructions

"Extended reflexives": the subject is covalued with the possessor of the object (Aissen 1997).

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

(22) Chuj
Ix-s-chonh s-wakax ix Ana.
PFV-A3-sell A3-cow CLF Ana
Lit: 'She$_1$ sold Ana$_1$'s cow.'

Since Ch'ol and Chuj are VOS languages with postnominal possessors, two conceivable parses:

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

There's robust evidence that Ch'ol exhibits (23a), but Chuj (23b) (violating Condition C).

I - Evidence from adverbs
Both Chuj and Ch'ol allow flexible placement of adverbs.

(24) Ch'ol flexible adverb placement
Tyi i-chok-o [$_{OBJ}$ tyuñ] {**abi**} [$_{SUBJ}$ jiñi alob] {**abi**}.
PFV A3-throw-TV stone yesterday DET boy yesterday
'The boy threw the stone yesterday.'

(25) Chuj flexible adverb placement
S-b'o' [$_{OBJ}$ tek] {**junelxo**} [$_{SUBJ}$ waj Xun] {**junelxo**}.
A3-make meal again CLF Xun again
'Xun made the meal again.'

⇒ With extended reflexives, the two languages diverge:

(26) Ch'ol adverb placement still flexible in extended reflexive
Tyi i-chok-o [$_{OBJ}$ i-tyuñ] {**abi**} [jiñi alob] {**abi**}.
PFV A3-throw-TV A3-stone yesterday DET boy yesterday
'The boy$_1$ threw his$_1$ stone yesterday.'

(27) Chuj adverb placement no longer flexible in extended reflexive
S-b'o' [$_{OBJ}$ s-tek] {*__junelxo__} [waj Xun] {__junelxo__}.
A3-make A3-meal again CLF Xun again
'Xun$_1$ made his$_1$ meal again.'

Right parse for Ch'ol = (28a) and right parse for Chuj = (28b):

(28) a. Ch'ol: (26)
threw [$_{OBJ}$ stone [$_{POSS}$ *pro*$_1$]] **adv** [$_{SUBJ}$ the boy$_1$] **adv**

b. Chuj: (27)
made [$_{OBJ}$ meal [$_{POSS}$ Xun$_1$]] **adv** [$_{SUBJ}$ *pro*$_1$] **adv**

Result: Apparent Condition C violation in Chuj → (28b) = *He*$_1$ *made Xun*$_1$*'s meal again*

II - Evidence from object A'-extraction
Focused constituents must appear preverbally in Mayan (see Aissen 2017 and Coon et al. 2014 on focus in Mayan), resulting in [O-Poss]-V-S order when the object of an extended reflexive is focused.

⇒ With extracted extended reflexive objects, the two languages again diverge:

Ch'ol → Condition C active, linear precedence irrelevant:

(29) [$_{OBJ}$ I-wakax [$_{POSS}$ ***pro***]]$_i$ tyi i-choñ-o t_i [$_{SUBJ}$ **aj-Ana**].
A3-cow PRON PFV A3-sell-TV CLF-Ana
'It's HER$_{1/*2}$ cow that Ana$_1$ sold.' (Ch'ol)

Chuj → Condition C violation, linear precedence relevant:

(30) [$_{OBJ}$ Ha s-mam [$_{POSS}$ **waj Xun**]]$_i$ ix-y-il-a' t_i [$_{SUBJ}$ ***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.'

(31) *[$_{OBJ}$ Ha s-mam [$_{POSS}$ ***pro***]]$_i$ ix-y-il t_i [$_{SUBJ}$ **waj Xun**].
FOC A3-father PFV-A3-see CLF Xun

Result: Assuming that A'-movement reconstructs for Condition C (Barss 1986, Chomsky 1995, Fox 1999, Stockwell et al. 2021), apparent Condition C violation in Chuj, but not Ch'ol.

III - Coordination

⇒ With coordinated extended reflexive objects, the two languages diverge again:

(32) Ch'ol (only way to convey the intended meaning)
Tyi i-ts'äñ-ä [$_{\&P}$ i-ts'i' [$_{POSS}$ ***pro***] yik'oty i-mis [$_{POSS}$ ***pro***]] [$_{SUBJ}$ **aj-Ana**].
PFV A3-wash-TV A3-dog PRON and A3-cat PRON CLF-Ana
'Ana$_1$ washed her$_1$ dog and her$_1$ cat.'

(33) Chuj (only way to convey the intended meaning)
Ix-s-b'ik [$_{\&P}$ nok' s-tz'i' [$_{POSS}$ **waj Xun**] yet' nok' s-mis [$_{POSS}$ ***pro***]] [$_{SUBJ}$ ***pro***].
PFV-A3-wash CLF A3-dog CLF Xun and CLF A3-cat
'Xun$_1$ washed his$_1$ dog and his$_1$ cat.'
Lit: 'He$_1$ washed Xun$_1$'s dog and his$_1$ cat.'

Again: Condition C wins in Ch'ol — linear precedence wins in Chuj.

Area of evidence 2: Relative clauses and word order (not testable in Ch'ol)

VOS/VSO alternations possible in Chuj when the object has a relative clause:

(34) Chuj (no covaluation)
a. Ol-y-awtej [$_{OBJ}$ ch'anh libro [$_{RC}$ s-man **winh** ewi]] [$_{SUBJ}$ **ix Ana**].
PROSP-A3-read CLF book A3-buy CLF.PRON yesterday CLF Ana
Lit: 'Ana will read the book that he bought yesterday.' (VOS)
b. Ol-y-awtej [$_{SUBJ}$ **ix Ana**] [$_{OBJ}$ ch'anh libro [$_{RC}$ s-man **winh** ewi]] (VSO)

Result: two options for nominal covaluation between subject and nominals inside object:

(35) Chuj
a. Ol-y-awtej [$_{OBJ}$ ch'anh libro [$_{RC}$ s-man **ix Ana** ewi]] [$_{SUBJ}$ ***pro***].
PROSP-A3-read CLF book A3-buy CLF Ana yesterday PRON
Lit: 'She$_1$ will read the book that Ana$_1$ bought yesterday.' (VOS)
b. Olyawtej [$_{SUBJ}$ **ix Ana**] [$_{OBJ}$ ch'anh libro [$_{RC}$ sman [$_{SUBJ}$ ***pro***] ewi]] . (VSO)
Lit: 'Ana$_1$ will read the book that she$_1$ bought yesterday.'
c. *Olyawtej [$_{OBJ}$ ch'anh libro [$_{RC}$ sman ***pro*** ewi]] [$_{SUBJ}$ **ix Ana**]. (VOS)

Two results

1. Apparent Condition C violation in (35a) → lit: *She$_1$ read the book that Ana$_1$ bought.*

2. Linear precedence matters! — see contrast between (35a) and (35b).

Nb.: there's more evidence from word order not provided here (see Royer 2022, §2.2.5).

Summary
Evidence that only Ch'ol is Condition C abiding; in Chuj, only linear precedence matters.

Table 1: Evidence of Condition C in Ch'ol vs. Chuj

	Data diagnostic	Ch'ol Condition C-abiding?	Chuj Condition C-abiding?
1.	Adverbs in extended reflexives	yes	no
2.	Object A'-extraction	yes	no
3.	Coordinated objects	yes	no
4.	VOS/VSO alternations	n/a	no

From a cross-linguistic perspective, this is unexpected:

- Good reason to think the Binding Conditions are universal (e.g. Reuland 2010, 2011)
- Even more unexpected considering that Ch'ol *does* generally abide by the binding conditions.

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Crossroads → Either...

1. the Binding Conditions are not universal ☹; or
2. they *are* universal, but there's something special about the syntax of Mayan languages like Chuj that lead to the inapplicability of the Binding Conditions.

Previous work on Popti' took the first route (Craig 1977, Hoekstra 1989, Aissen 2000).

Rest of this talk: take route 2, showing the following along the way:

(36) §4 The binding violations are an illusion: Chuj exhibits a different syntax (Coon et al. 2014), one which bleeds c-command relations from the subject into the object.
§5 Linear precedence regulates free nominals in both Chuj and Ch'ol.
§6 There is evidence for the Binding Conditions, even in Chuj.

End result: A unified set of constraints on covalued nominals, in Chuj and Ch'ol alike, compatible with the claim that the Binding Conditions are universal.

(37) Generalization about covalued expressions in Chuj and Ch'ol
a. If a nominal is bound under c-command, it is subject to structurally-determined binding conditions like (2) (linear precedence is irrelevant).
b. If two or more free nominals are covalued in the same clause, only the linearly first can be an R-expression (linear precedence is relevant).

4 High-absolutive syntax and syntactic binding

Main proposal
Mayan languages for which the binding conditions seem not to apply (like Chuj) exhibit a different syntax than those where they do seem to apply (like Ch'ol).

- Objects raise above the subject in Mayan languages like Chuj (Coon et al. 2014).
- This bleeds c-command relations between objects and subjects, explaining the lack of Condition C violations in the relevant Chuj sentences.
- This can be shown in other Mayan languages exhibiting object raising.

4.1 The Ergative Extraction Constraint (see also Willie's talk tomorrow)

A better known difference between Chuj and Ch'ol:
⇒ Chuj is subject to the "Ergative Extraction Constraint" (EEC), whereas Ch'ol is not.

(38) The Ergative Extraction Constraint
A subset of Mayan languages restricts the extraction of transitive subjects.

(39) Chuj → EEC

a. Ix-ach-y-il ix ix.
PFV-B2S-A3-see CLF woman
'The woman saw you.'

b. *Mach$_j$ ix-ach-y-il-a' t_j?
who PFV-B2S-A3-see-TV
'Who saw you?'

(40) Ch'ol → no EEC

a. Tyi y-il-ä-yety x-'ixik.
PFV A3-see-DTV-B2 CLF-woman
'The woman saw you.'

b. Maxki tyi y-il-ä-yety?
who PFV A3-see-DTV-B2
'Who saw you?'

The high-abs/low-abs parameter and the EEC
Coon et al. (2014) and Coon et al. (2021) propose that the presence or not of the EEC maps to a deep syntactic difference among two types of Mayan languages, 'low-abs' and 'high-abs' languages:

(41) Low-abs languages (Ch'ol): objects remain in their canonical position
[$_{v\text{P}}$ SUBJECT [$_{\text{VP}}$ V OBJECT]]]

(42) High-abs languages (Chuj): objects undergo A-movement above the subject
[$_{v\text{P}}$ OBJECT [SUBJECT [$_{\text{VP}}$ V <OBJECT>]]]

The EEC arises as a locality issue (see also Rizzi 1990, Campana 1992, Aldridge 2004):

(43) Raising of object in high-abs languages blocks subject extraction
[$_{\text{CP}}$ __ … [$_{v\text{P}}$ OBJECT [SUBJECT [$_{\text{VP}}$ V <OBJECT>]]]]

A correlate of the high/low-abs parameter
The position of absolutive (Set B) morphemes in the verb (Tada 1993):

(44) 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**

- Attributed to the fact that in non-extraction environments (Coon et al. 2014; Coon et al. 2021):
  - Set B has a high source in high-abs languages (T^0).
  - Set B has a low source in low-abs languages (v^0).
- Obj raising is assumed to be necessary in order for T^0 to enter into Agree with the object.

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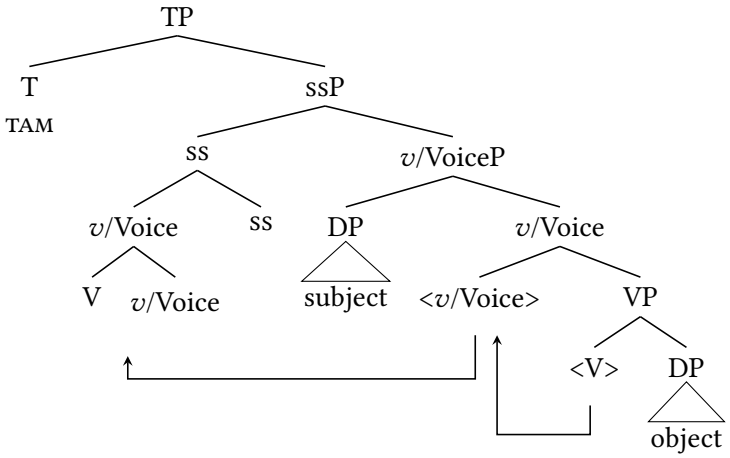
- **A word (order) of caution**
  Following Clemens and Coon (2018), I assume the clausal syntax in (45) for both Chuj and Ch'ol [though see England 1991, Aissen 1992, Coon 2010b, Clemens and Coon 2018, and Little 2020 for varying accounts of VOS/VSO order in Mayan]

(45) Verb-initial word order via head movement (Clemens and Coon 2018)



High/low abs languages don't necessarily correlate with VOS/VSO word order, which I assume is partly derived post-syntactically in some Mayan languages, including Ch'ol (see Clemens and Coon 2018 for extensive argumentation).

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4.2 Proposal: High absolutive syntax bleeds Condition C violations

Assuming A-movement does not reconstruction for Condition C (Chomsky 1995, Lasnik 1999):

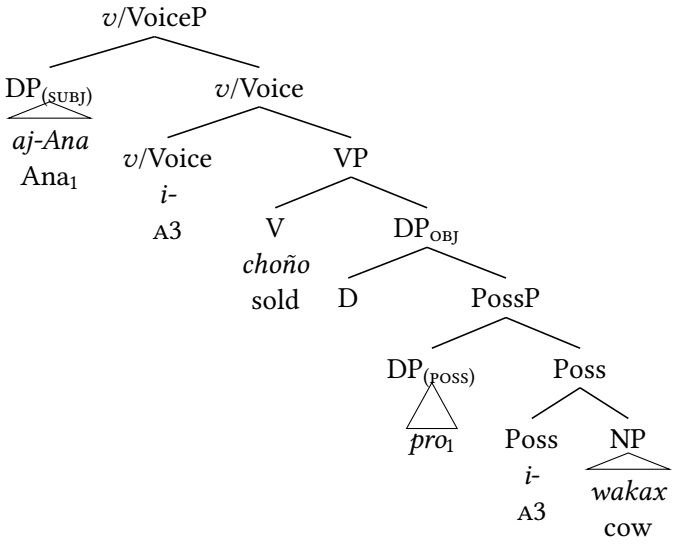
(46) Consequence of high-abs syntax
Raising of the object over the subject will bleed structural relations between covalued nominal expressions, and therefore bleed violations of Condition C.

Low-abs language
The subject will asymmetrically c-command the object (binding conditions apply):

(47) *Ch'ol extended reflexive construction and corresponding structure*

a. Tyi i-choñ-o [$_{\text{OBJ}}$ i-wakax [$_{\text{POSS}}$ *pro*]] [$_{\text{SUBJ}}$ aj-Ana].
PFV A3-sell-TV A3-cow *pro* CLF-Ana
'Ana$_1$ sold her$_{1/*2}$ cow.'

b.

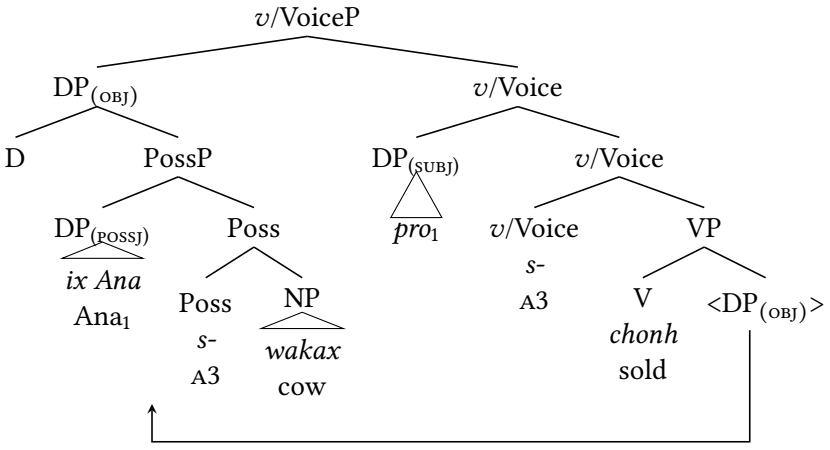


High-abs language
After object raising, the subject doesn't c-command the possessor—both are free.

(48) Chuj extended reflexive construction and corresponding structure

a. Ix-s-chonh [$_{\text{OBJ}}$ s-wakax [$_{\text{POSS}}$ ix Ana]] [$_{\text{SUBJ}}$ *pro*].
PFV-A3-sell A3-cow CLF Ana *pro*
Lit: 'She$_1$ sold Ana$_1$'s cow.'

b.



Conclusion: High-abs syntax, independently required to explain a parameter within the Mayan language family (Coon et al. 2014), can also explain the lack of Condition C violations in Chuj.

4.3 Typological prediction: Nominal covaluation across Mayan

(49) a. EEC (high-abs) languages should behave like Chuj w.r.t. Condition C effects.
b. non-EEC (low-abs) languages should behave like Ch'ol.

This should be easily testable in cases of object A'-extraction:

(50) a. high-abs languages (possessor should be overt and subject null):
$[_{\text{OBJ}} \ldots [_{\text{POSS}}$ R-expression$_1$ $]]$ verb $[_{\text{SUBJ}}$ *pro*$_1$ $]$
b. low-abs languages (possessor should be null and subject overt):
$[_{\text{OBJ}} \ldots [_{\text{POSS}}$ *pro*$_1$ $]]$ verb $[_{\text{SUBJ}}$ R-expression$_1$ $]$

☺ Preliminary evidence suggests the prediction is borne out ☺ (see also Coon et al. 2021)

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

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

(52) $[_{\text{OBJ}}$ A t-chej $[_{\text{POSS}}$ **Xwan** $]]$ o tz'-ok t-b'yo-'n $[_{\text{SUBJ}}$ ***pro*** $]$.
DET A3S-horse Xwan PFV B3S-DIR A3S-hit-DS PRON
'Xwan$_1$ hit HIS$_1$ HORSE.' (Mam)

(53) $[_{\text{OBJ}}$ Ja ri ru-wakx $[_{\text{POSS}}$ **ri xta Ana** $]]$ x-u-k'ayi-j $[_{\text{SUBJ}}$ ***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:

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

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

Nb: Not a historical accident: 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).

Summary: The Condition C violations observed for Chuj in §3 were illusory.

- High-abs syntax bleeds c-command relations from the subject into the object.
- This leads to the inapplicability of the binding conditions since both expressions are free.

Positive result: We can continue saying the Binding Conditions are universal.

5 Anti-cataphora in Chuj and Ch'ol

So high-abs syntax obviates expected Condition C effects, since the relevant nominals are free.

But: Isn't it still mysterious that **linear precedence** matters?

Conventional wisdom (since Reinhart 1983)
Cataphora permitted precisely when covalued nominals are free.

(56) a. Those who know **Zelda**$_1$ adore **her**$_1$.
b. Those who know **her**$_1$ adore **Zelda**$_1$. (Reinhart 1983: (2))

(57) a. **Her**$_1$ mother likes **Bernice**$_1$'s friends.
b. **Bernices**$_1$'s mother likes **her**$_1$ friends. (Bruening 2014: (6a-b))

- But Chuj bans (58) (which I've argued involves two free nominals):

(58) Cataphora (backwards pronominalization) impossible in Chuj extended reflexive
*verb [$_{\text{OBJ}}$ … [$_{\text{POSS}}$ *pro*$_1$]] [$_{\text{SUBJ}}$ R-expression$_1$]

- Does this cast doubt on the decision to treat *pro* as free?

No! There's plenty of evidence for a pan-Mayan **anti-cataphora** constraint on free pronouns:

(59) Anti-cataphora with free pronouns in Chuj and Ch'ol
If two or more free nominals are covalued in the same clause, only the linearly first can be an R-expression (linear precedence is relevant).

In **Chuj** (60) there's definitely no binding (both expressions are embedded inside other DPs):

(60) Chuj free pronoun → linear precedence matters
a. Tzschamk'olej [$_{\text{OBJ}}$ s-tz'i' [**ix Ana**]] [$_{\text{SUBJ}}$ ix ix [ixlolon yet'ok ***pro***]].
likes A3-dog CLF Ana CLF woman spoke with PRON
'The woman that spoke with her$_1$ likes Ana$_1$'s dog.'
b. *Tzschamk'olej [$_{\text{OBJ}}$ stz'i' [***pro***]] [$_{\text{SUBJ}}$ ix ix [ixlolon yet' **ix Ana**]].
Intended: 'The woman that spoke with her$_1$ likes Ana$_1$'s dog.'

In **Ch'ol**, the anti-cataphora constraint also applies (remember Ch'ol is low-abs):

(61) Ch'ol free pronoun → linear precedence matters
a. Tyi i-pejk-ä [$_{\text{OBJ}}$ **aj-Rosa**] [$_{\text{SUBJ}}$ jiñi x-'ixik [ta'bä ik'ele ***pro***]].
spoke CLF-Rosa DET CLF-woman that saw PRON
'The woman who saw Rosa$_1$ spoke with her$_1$.
b. *Tyi ipejkä [$_{\text{OBJ}}$ ***pro***] [$_{\text{SUBJ}}$ jiñi x'ixik [$_{\text{RC}}$ ta'bä ik'ele **ajRosa**]].
Intended: 'The woman who saw her$_1$ spoke with Rosa$_1$.

More evidence: The same Ch'ol sentence, but with an extracted subject.

(62) a. [$_{SUBJ}$ Jiñi x-'ixik [ta'bä ik'ele **aj-Rosa**]] tyi ipejkä [$_{OBJ}$ ***pro***]
DET CLF-woman that saw CLF-Rosa spoke PRON
'THE WOMAN WHO SAW HER$_1$ spoke with Rosa$_1$.'

b. *[$_{SUBJ}$ Jiñi x'ixik [$_{RC}$ ta'bä ik'ele ***pro***]] tyi ipejkä [$_{OBJ}$ **ajRosa**]
Intended: 'THE WOMAN WHO SAW HER$_1$ spoke with Rosa$_1$.'

Crucial point
The Chuj linear precedence effects of §3 are just a by-product of a more general constraint against free cataphoric pronouns, which also applies in low-abs Mayan languages.

- The difference between Chuj and Ch'ol is that high-abs syntax in Chuj bleeds binding from the subject into the object, which in turn feeds anti-cataphora.

Result: We almost have a unified set of constraints on nominal covaluation in Mayan:

(63) a. If a nominal is bound, it is subject to structurally-sensitive Binding Conditions (linear precedence is irrelevant).
b. If two or more free nominals are covalued in the same clause, only the linearly first can be an R-expression (linear precedence is relevant).

We've seen evidence for both constraints in Ch'ol.

Next up: show (63a) also holds in Chuj.

. . . . . .

- **Anti-cataphora as a source of crosslinguistic variation**

  In some languages (Mayan), linear precedence regulates the distribution of free nominals that are covalued; in others (English), it does not.

  ⇒ Chuj and Ch'ol are not alone in imposing linear precedence constraints on free nominals (Mandarin: Tai 1973, Huang 1982; Japanese: Huang 1982; Malayalam: Mohanan 1981, 1983; Chamorro: Chung 1989; Russian: Kazanina and Phillips 2001, Reuland and Avrutin 2004, Kazanina 2005; Greek: Christodoulou 2008).

  (64) Mandarin Chinese, Huang 1982: 388
  a. [[da-le **Zhangsan**$_1$ de] neige ren], dui **ta**$_1$ hen bu keqi.
  hit-ASP Zhangsan DE that man to him very not polite
  'The man that hit Zhangsan$_1$ was very impolite to him$_1$.'
  b. *[[da-le **ta**$_1$ de] neige ren], dui **Zhangsan**$_1$ hen bu keqi.
  'The man that hit him$_1$ was very impolite to Zhangsan$_1$.'

  And to a certain extent, maybe languages like French and English also do show restrictions.

  (65) a. Penelope cursed **Peter**$_1$ and slandered **him**$_1$.
  b. *Penelope cursed **him**$_1$ and slandered **Peter**$_1$. (Langacker 1969: 162)

  (66) ??**Sa**$_1$ mère aime **Marie**$_1$.

6 Binding under c-command, even in Chuj

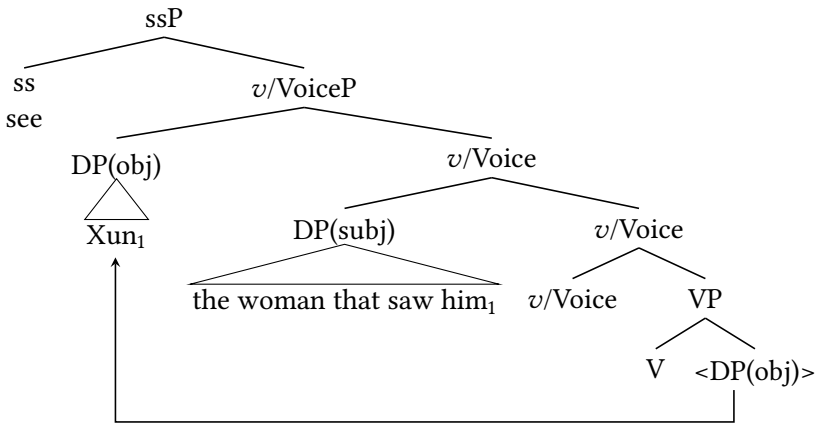
Final goal: Find evidence that the Binding Conditions do actually hold in Chuj.

First try: Objects binding into subjects
High-abs syntax bleeds binding from Subj to Obj, but feeds binding from Obj into Subj:

(67) **Prediction**
R-expressions should be forced to appear in the object of sentences like the following:

a. [The woman that saw Xun_1] scolded [him_1].

b.



The prediction is borne out ☺:

(68) a. Ixstumej [$_{\text{OBJ}}$ **waj Xun**] [$_{\text{SUBJ}}$ ix ix ixilani ***pro***].
scolded CLF Xun CLF woman saw *pro*
'The woman that saw Xun scolded him.

b. *Ixstumej [$_{\text{OBJ}}$ ***pro***] [$_{\text{SUBJ}}$ ix ix ix-il-an **waj Xun**].

But: we have a confound from linear precedence.

⇒ Unclear whether the R-expression is in the Obj because of Condition C or Anti-Cataphora.

Second try: Reflexive sentences
Reflexive sentences in Chuj show that the Binding Conditions are active, without running into a confound from linear precedence.

⇒ There's evidence that they exhibit the following parse:

(69) [saw [$_{\text{OBJ}}$ self [$_{\text{POSS}}$ *pro*]] [$_{\text{SUBJ}}$ R-expression]]

6.1 Background: The internal syntax of anaphors

Reflexive anaphors across Mayan look like possessed nouns (see Ayres 1980, Hou 2013):

(70) Chuj

Ix-y-il s-**b'a** ix Ana.
PFV-A3-see A3-self CLF Ana
'Ana saw herself.'

(71) Ch'ol

Tyi y-il-ä i-**bä** aj-Ana.
PFV A3-see-TV A3-self CLF-Ana
'Ana saw herself.'

(72) Inflected reflexive in Chuj

a. hin-b'a 'myself'
b. ha-b'a 'yourself'
c. s-b'a 'himself/herself/themselves'

(73) Inflected reflexive in Ch'ol

a. k-bä 'myself/ourselves'
b. a-bä 'yourself/yourselves'
c. i-bä 'himself/herself/themselves'

(74) Possessed noun in Chuj

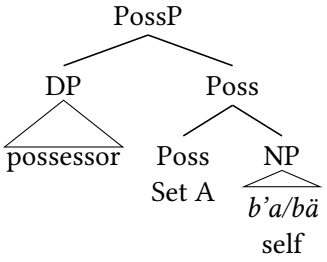
a. hin-tz'i' 'my dog'
b. ha-tz'i' 'your dog'
c. s-tz'i' 'his/her/their dog'

(75) Possessed noun in Ch'ol

a. k-ts'i' 'my/our dog'
b. a-ts'i' 'your/y'all's dog'
c. i-ts'i' 'his/her/their dog'

Building on Coon 2017, I propose reflexive anaphors exhibit the internal syntax in (76) [see also Royer 2022, §5.2.1 for additional evidence]

(76)



6.2 Detecting the Binding Conditions

Unsurprisingly, reflexives and extended reflexive sentences look very alike:

(77) Reflexive

Ix-y-il s-**b'a** waj Xun.
PFV-A3-see A3-self CLF Xun
'Xun_1 saw himself_1.'

(78) Extended reflexive

Ix-y-il s-**tz'i'** waj Xun.
PFV-A3-see A3-dog CLF Xun
'Xun_1 saw his_1 dog.'

But: There's evidence that the R-expression instantiates different syntactic positions (77) vs. (78).

Adverbs again
Recall the Chuj adverb contrasts between regular transitives (79) and extended reflexives (80a):

(79) Chuj transitive
Ixyil [$_{\text{OBJ}}$ nok' tz'i'] {**junelxo**} [$_{\text{SUBJ}}$ waj Xun] {**junelxo**}.
saw CLF dog again CLF Xun again
'Xun saw the dog again.'

(80) Chuj extended reflexive
a. Ixyil nok' [s]-tz'i' {*__junelxo__} waj Xun {__junelxo__}.
saw CLF A3-dog again CLF Xun again
'Xun$_1$ saw his$_1$ dog again.'
b. made [$_{\text{OBJ}}$ meal [$_{\text{POSS}}$ Xun$_1$]] **again** [$_{\text{SUBJ}}$ *pro*$_1$] **again**

Reflexive sentences do not behave like extended reflexives:

(81) Chuj reflexive
Ixyil [s]-b'a {__junelxo__} waj Xun {__junelxo__}.
saw A3-self again CLF Xun again
'Xun$_1$ saw himself$_1$ again.' compare with (79)

These data suggest that the R-expression in reflexives is in subject position:

(82) a. saw [$_{\text{OBJ}}$ self [$_{\text{POSS}}$ *pro*$_1$]] {again} [$_{\text{SUBJ}}$ Xun$_1$] {again} = (81) / cf. (80b)

Conclusion: Conditions A and C are active, and linear precedence is therefore irrelevant!

- How can we explain the sudden applicability of the binding conditions?

(83) Reflexive syntax in Chuj (see Coon et al. 2014, 2021)
Transitive sentences with reflexive objects do not exhibit high-absolutive syntax.

⇒ There is strong empirical support for this proposal.

I - Subject extraction
Exceptionally possible with reflexive objects (Ordóñez 1995, Coon et al. 2014):

(84) Mach ix-y-il s-__b'a__?
who PFV-A3-see A3-self
'Who saw themself?' (compare with (39) above)

⇒ The lack of EEC in (84) makes sense if the object does not raise:

(85) No high-abs with reflexive objects = no intervention effect
[$_{\text{CP}}$ __ … [$_{v\text{P}}$ SUBJECT [$_{\text{VP}}$ V REFLEXIVE OBJECT]]]
✓

II - No A'-extraction with reflexives
Reflexive objects can't themselves be A'-extracted.

(86) *Ha s-**b'a** ix-y-il waj Xun.
FOC A3-self PFV-A3-see CLF Xun
Intended: 'Xun saw HIMSELF.'

- Coon et al. 2014, 2021: DPs must first move to edge of the *v*/VoiceP to A'-extract.

⇒ If reflexives can't raise to that position, we can explain why they also cannot A'-extract.

III - No coordination
Reflexives can't be coordinated with regular objects:

(87) *Ix-y-il [&P s-**b'a** yet' ix Malin] winh k'ayb'um.
PFV-A3-see A3-self and A3 Malin CLF teacher
Intended: 'The teacher saw himself and Malin.'

⇒ If one conjunct requires a low-abs syntax (the reflexive), and the other requires a high-abs syntax (the other DP), then we might expect ineffability.

IV - No agreement
In high-abs languages that show overt Set B agreement, no agreement with reflexive objects.

(88) *Kaqchikel → no Set B agreement with reflexives*
a. Rije x-**(*e)**-ki-tz'ët k-i'.
PRON.3P PFV-B3P-A3P-see A3P-REFL
'They saw themselves.' (Burukina 2019: (2))
b. Yïn x-**e**-in-tz'ët rje'.
I PFV-B3P-A1S-see they
'I saw them.' (Imanishi 2019: (6))

- Coon et al. 2021: raising of the object leads to an Agree relation with T/Infl, the locus of Set B morphemes.

⇒ If reflexive objects never raise in the first place, failure of agreement is expected.

Summary:
Reflexive sentences provide evidence that the Binding Conditions are active in Chuj.

⇒ Despite preliminary reasons to think that Chuj provided evidence against the universality of the Binding Conditions, we find that Chuj provides evidence in their favour.

7 Conclusion and discussion

A subset of Mayan languages like Chuj exhibit surprising patterns of nominal covaluation:

- Seem to show persistent violations of Condition C.
- In general, only linear precedence seems to matter.

Re apparent violations of Condition C
This is conditioned by an idiosyncrasy in the syntax of high-abs languages: objects raise above subjects (Coon et al. 2014), with pervasive effects on grammar:

1. Already known: Transitive subjects can't extract (Coon et al. 2014, Coon et al. 2021).
2. New: Object raising bleeds binding from Subj into Obj, obviating Condition C effects.

Benefits: (i) we have identified a new correlate of high-abs syntax, and (ii) we don't need to deny the universality of the Binding Conditions.

Re linear precedence effects
Part of a wider restriction on covaluation between free nominal expressions.

The outcome
A unified set of constraints on the distribution of covalued nominals in Chuj and Ch'ol.

(89) a. If a nominal is bound, it is subject to structurally-sensitive binding conditions (linear precedence is irrelevant).
b. If two or more free nominals are covalued in the same clause, only the linearly first can be an R-expression (linear precedence is relevant).

While (89a) is likely universal, (89b) likely varies among languages.

Main questions at the beginning

1. What is the source of variation between Ch'ol and Chuj?

   ⇒ The independently needed low-abs / high-abs parameter.

2. Why does Chuj get to ignore the Binding Conditions (at least apparently)?

   ⇒ It does not. In fact, reflexives show that the binding conditions are active, even in Chuj.

References: see Royer 2022, available on my website.

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Bonus: Anti-cataphora as a general ban on ellipsis

Tough question: Where in the grammar does the anti-cataphora generalization apply?

- Craig (1977), Trechsel (1995), and Aissen (2000), on the Mayan language Popti', all argue that anti-cataphora = ban on backwards deletion or ellipsis.
- Assuming ellipsis applies at PF (Ross 1967, Merchant 2019, Ranero 2021):

(90) PF principle against cataphora with free nominals:
If two or more free expressions bear the same index within the same clause, only the linearly first can be realized as an R-expression, and the rest must undergo deletion.

So a Chuj extended reflexive involves the external merger of two identical, coreferential DPs, with subsequent ellipsis of the one that comes linearly second.

(91) a. Ix-s-chonh s-wakax ix Ana.
PFV-A3-sell A3-cow CLF Ana
Lit: 'She$_7$ sold Ana$_7$'s cow.'
b. Numeration: { Ana, Ana, cow, sell, T^0 ... }
c. [sold [$_{OBJ}$ cow [$_{POSS}$ Ana$_7$]]$_i$ [$_{SUBJ}$ <Ana>$_7$] t_i]

Evidence: Backwards ellipsis is banned in Chuj.

(92) *Sluicing in Chuj*
a. Ay junmach **ix-jaw-i**, pero ma-chekel mach ~~**ix-jaw-i**~~.
EXT someone PFV-arrive-IV, but NEG-know who PFV-arrive-IV
'Someone arrived, but I don't know who ~~arrived~~.
b. *Machekel mach ~~**ixjawi**~~, pero ay junmach **ixjawi**.
Intended: 'I don't know who ~~arrived~~, but someone arrived.'

Implications for the status of indices in grammar

Aissen (2000): Anti-cataphora has implications for the status of indices in grammar, because PF rules like (89) require that PF *have access to information about indices.*

- This violates Chomsky's (1995, 2001) Inclusiveness Condition, implicit in many recent theories of binding (e.g. Reuland 2001, 2011):

(93) *Inclusiveness* (Chomsky 2001, 2-3) (cited from Collins and Groat 2018).
[Inclusiveness] bars introduction of new elements (features) in the course of computation: **indices**, traces, syntactic categories or bar levels, and so on.

- The challenge: for PF to 'see' indices in a Y model of grammar, the indices must be in syntax.
- The Mayan anti-cataphora facts thus provide support for recent work arguing indices are syntactically-represented [e.g., Heim 1993; Rezac 2004; Hicks 2009; Kratzer 2009; Grosz 2015; Collins and Stabler 2016; Deal 2017; Collins and Groat 2018; Arregi and Hanink 2018; Clem 2019; Hanink 2021; Jenks 2020]

References

Ahn, Byron Thomas. 2015. Giving reflexivity a voie: Twin reflexives in English. Ph.D. dissertation, UCLA, Los Angeles, CA.

Aissen, Judith. 1992. Topic and focus in Mayan. *Language* 68:43–80.

Aissen, Judith. 1997. On the syntax of obviation. *Language* 73:705–769.

Aissen, Judith. 2000. Prosodic conditions on anaphora and clitics in Jakaltek. In *The Syntax of Verb Initial Languages*, eds. Andrew Carnie and Eithne Guilfoyle. OUP.

Aissen, Judith. 2017. Correlates of ergativity in Mayan. In *Oxford Handbook of Ergativity*, eds. Jessica Coon, Diane Massam, and Lisa Travis. New York: OUP.

Aldridge, Edith. 2004. Ergativity and word order in Austronesian languages. Doctoral dissertation, Cornell University, Ithaca, NY.

Arregi, Karlos, and Emily A. Hanink. 2018. Switch reference in Washo as multiple subject agreement. In *NELS 48: Proceedings of the Forty-Eighth Annual Meeting of the North East Linguistic Society*, eds. Sherry Hicklebridge and Max Nelson, volume 1, 39–48. GLSA.

Ayres, Glenn. 1980. A note on the Mayan reflexive. *Journal of Mayan Linguistics* 1–2:53–59.

Barss, Andrew. 1986. Chains and Anaphoric Dependence: On Reconstruction and its Implications. Doctoral dissertation, MIT, Cambridge, MA.

Bruening, Benjamin. 2014. Defects of defective intervention. *Linguistic Inquiry* 45:707–719.

Bruening, Benjamin. to appear. Generalizing the presuppositional approach to the Binding Conditions. *Syntax* .

Buenrostro, Cristina. 2013. La voz en Chuj de San Mateo Ixtatán. Ph.D. dissertation, El Colegio de México, Mexico City.

Büring, Daniel. 2005. *Binding Theory*. Cambridge: Cambridge University Press.

Burukina, Irina. 2019. Reflexive functional head, verbal and nominal predicates. In *Proceedings of the 36th West Coast Conference of Formal Linguistics*, eds. Richard Stockwell, Maura O'Leary, Zhonhshi Xu, and Z. L. Zhou, 91–98. Cascadilla Proceedings Project.

Campana, Mark. 1992. A movement theory of ergativity. Ph.D. dissertation, McGill University, Montreal.

Charnavel, Isabelle, and Dominique Sportiche. 2016. Anaphor binding: What French inanimate anaphors show. *Linguistic Inquiry* 47:35–87.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, Noam. 1986. *Barriers*. Cambridge, MA: MIT Press.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. Michael Kenstowicz, 1–52. Cambridge, MA: MIT Press.

Christodoulou, Christiana. 2008. Anaphoric relations with Greek pronouns revisited. In *Proceedings of the 2007 annual conference of the Canadian Linguistic Association*.

Chung, Sandra. 1989. On the notion of "nul anaphor" in Chamorro. In *The Null Subject Parameter*, 143–184. Springer.

Clem, Emily. 2019. Agreement, case, and switch-reference in Amahuaca. Ph.D. dissertation, University of California, Berkeley.

Clemens, Lauren Eby, and Jessica Coon. 2018. Deriving verb initial order in Mayan. *Language* 94:237–280.

Collins, Chris, and Erich Groat. 2018. Copies and repetitions. Ms. NYU.

Collins, Chris, and Edward Stabler. 2016. A formalization of minimalist syntax. *Syntax* 19:43–78.

Coon, Jessica. 2010a. Complementation in Chol (Mayan): A Theory of Split Ergativity. Doctoral dissertation, MIT, Cambridge, MA.

Coon, Jessica. 2010b. VOS as Predicate Fronting in Chol. *Lingua* 120:354–378.

Coon, Jessica. 2017. Little-v agreement and templatic morphology in Ch'ol. *Syntax* 20:101–137.

Coon, Jessica, Nico Baier, and Theodore Levin. 2021. Mayan Agent Focus and the ergative extraction constraint: Facts and fictions revisited. *Language* 97:269–332.

Coon, Jessica, Pedro Mateo Pedro, and Omer Preminger. 2014. The role of case in A-bar extraction asymmetries: Evidence from Mayan. *Linguistic Variation* 14:179–242.

Craig, Colette Grinevald. 1977. *The Structure of Jacaltec*. Austin, TX: University of Texas Press.

Deal, Amy Rose. 2017. Towards an etiology of outer indices. In *A schrift to fest Kyle Johnson*, eds. Nicholas LaCara, Keir Moulton, and Anne-Michelle Tessier, volume 1. Linguistics Open Access Publications.

Despić, Miloje. 2013. Binding and the structure of NP in Serbo-Croatian. *Linguistic Inquiry* 44:239–270.

Despić, Miloje. 2015. Phases, reflexives, and definiteness. *Syntax* 18:201–234.

Drummond, Alex, Dave Kush, and Norbert Hornstein. 2011. Minimalist construal: Two approaches to A and B. In *The Oxford Handbook of Linguistic Minimalism*, ed. Cedric Boeckx. Oxford University Press.

England, Nora. 1991. Changes in basic word order in Mayan languages. *International Journal of American Linguistics* 57:446–86.

Fox, Danny. 1999. Reconstruction, binding theory and the interpretation of chains. *Linguistic Inquiry* 30:157–196.

Grodzinsky, Yosef, and Tanya Reinhart. 1993. The innateness of binding and coreference. *Linguistic Inquiry* 24:69–101.

Grodzinsky, Yosef, Kenneth Wexler, Yu Chin Chien, Susan Markovitz, and Julie Solomon. 1993. The breakdown of binding relations. *Brain and Language* 45:396–422.

Grosz, Patrick. 2015. Movement and agreement in right-node raising constructions. *Syntax* 18:1–38.

Hanink, Emily. 2021. DP structure and internally headed relatives in Washo. *Natural Language & Linguistic Theory* 39:505–554.

Heim, Irene. 1993. Anaphora and semantic interpretation: A reinterpretation of Reinhart's approach. In *The interpretive tract*, eds. Uli Sauerland and Orin Percus. MIT Working Papers in Linguistics.

Heim, Irene. 2007. Forks on the road to Rule I. In *NELS 38: Proceedings of the 38th Annual Meeting of the North East Linguistics Society*, eds. M. Abdurrahman, A. Schardl, and M. Walkow.

Hicks, Glyn. 2009. *The derivation of anaphoric relations*. Linguistik Aktuell.

Hoekstra, Eric. 1989. A parameter for anaphor binding: The case of Jacaltec. In *Configurationality: The Typology of Asymmetries*, eds. L. Marácz and P. Muysken. Foris.

Hornstein, Norbert. 2001. *Move! A minimalist theory of construal*. Oxford: Blackwell Publishers.

Hornstein, Norbert. 2007. Pronouns in a minimalist setting. In *The Copy Theory of Movement*, 351–385. John Benjamins.

Hou, Liwen. 2013. Agent focus in Chuj reflexive constructions. BA Honours Thesis, McGill University, Montréal, QC.

Huang, Cheng-Teh James. 1982. Logical relations in Chinese and the theory of grammar. Doctoral dissertation, MIT, Cambridge, MA.

Imanishi, Yusuke. 2019. Parametrizing split ergativity in Mayan. *Natural Language & Linguistic Theory* 38:151–200.

Jackendoff, Ray. 1972. *Semantic interpretation in generative grammar*. Cambidge, MA: MIT Press.

Jenks, Peter. 2020. Are indices syntactically represented? Paper presented at *McGill University Colloquium Series*.

Kayne, Richard. 2002. Pronouns and their antecedents. In *Derivation and Explanation*, eds. Samuel David Epstein and T. Daniel Seeley. Oxford: Blackwell Publishers.

Kazanina, Nina. 2005. The acquisition and processing of backwards anaphora. Ph.D. dissertation, University of Maryland.

Kazanina, Nina, and Colin Phillips. 2001. Coreference in child Russian: Distinguishin syntactic and discourse constraints. In *Proceedings of the 25th annual Boston University Conference on Language Develop-*

ment, 413–424.
Kratzer, Angelika. 2009. Making a pronoun: Fake indexicals as windows into the properties of pronouns. *Linguistic Inquiry* 40:187–237.
Langacker, Ronald. 1969. On pronominalization and the chain of command. In *Modern studies in English*, eds. David A. Reibel and Sanford A. Schane, 160–186. Englewood Cliffs.
Lasnik, Howard. 1999. Chains of arguments. *Current Studies in Linguistics Series* 32:189–216.
Law, Danny. 2014. *Language contact, inherited similarity and social difference: The story of linguistic interaction in the Maya lowlands.* Amsterdam: John Benjamins.
Lebeaux, David. 1984. Locality and anaphoric binding. *The Linguistic Review* 4:343–363.
Lees, Robert B., and Edward S. Klima. 1963. Rules for English pronominalization. *Languages* 1:17–28.
Little, Carol-Rose. 2020. Mutual dependencies of nominal and clausal syntax in Ch'ol. Ph.D. dissertation, Cornell University.
Merchant, Jason. 2019. Ellipsis: A survey of analytical approaches. In *The Oxford Handbook of Ellipsis*, eds. Jeroen van Craenenbroeck and Tanja Temmerman. Oxford University Press.
Mohanan, K. P. 1983. Functional and anaphoric control. *Linguistic Inquiry* 14:641–674.
Mohanan, Karuvannur Puthanveettil. 1981. Grammatical relations and anaphora in Malayalam. Master's thesis, Massachusetts Institute of Technology, Cambridge, MA.
Ordóñez, Francisco. 1995. The antipassive in Jacaltec: A last resort strategy. *CatWPL* 4:329–343.
Piedrasanta, Ruth. 2009. *Los Chuj, Unidad y rupturas en su espacio.* Guatemala City, Guatemala: Amrar Editores.
Pollard, Carl, and Ivan A. Sag. 1992. Anaphors in English and the scope of binding theory. *Linguistic Inquiry* 23:261–303.
Ranero, Rodrigo. 2021. Identity conditions on ellipsis. Ph.D. dissertation, University of Maryland.
Reinhart, Tanya. 1976. The syntactic domain of anaphora. Ph.D. dissertation, MIT, Cambidge, MA.
Reinhart, Tanya. 1983. *Anaphora and semantic interpretation.* London: Croom Helm.
Reinhart, Tanya, and Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24:657–720.
Reuland, Eric. 2001. Primitives of binding. *Linguistic Inquiry* 32:439–492.
Reuland, Eric. 2010. The universality of binding principles. In *Structure Preserved: Studies in syntax for Jan Koster*, eds. Jan-Wouter Zwart and Mark de Vries, 277–287. John Benjamins Publishing Company.
Reuland, Eric. 2011. *Anaphora and Language Design (Linguistic Inquiry Monographs).* MIT Press.
Reuland, Eric, and Sergey Avrutin. 2004. Interpretive dependencies: the case of backward anaphora. *Linguistic Analysis* 34.
Reuland, Eric, and Jan Koster. 1991. *Long distance anaphora.* Cambridge University Press.
Rezac, Milan. 2004. Elements of Cyclic Syntax: Agree and Merge. Doctoral dissertation, University of Toronto. URL http://ling.auf.net/lingBuzz/000050.
Rizzi, Luigi. 1990. *Relativized minimality.* Cambridge, MA: MIT Press.
Rooryck, Johan, and Guido vanden Wyngaerd. 2011. *Dissolving Binding Theory.* Oxford University Press.
Ross, John R. 1967. Constraints on variables in syntax. Doctoral dissertation, MIT, Cambridge, MA.
Royer, Justin. 2021. Binding and coreference in Mayan and the pervasiveness of high-absolutive syntax. Ms. McGill.
Royer, Justin. 2022. Binding and anti-cataphora in Mayan. Ms. McGill.
Safir, Ken. 2004. *The syntax of anaphora.* Oxford: Oxford University Press.
Safir, Ken. 2008. Coconstrual and narrow syntax. *Syntax* 11:330–355.
Safir, Ken. 2014. One true anaphor. *Linguistic Inquiry* 45:91–124.
Schlenker, Philippe. 2005. The Lazy Frenchman's Approach to the Subjunctive (Speculations on Reference to Worlds and Semantic Defaults in the Analysis of Mood). In *Romance Languages and Linguistic Theory 2003: Selected Papers from Going Romance 2003*, eds. Twan Geerts, Ivo van Ginneken, and Haike Jacobs,

269–309. Amsterdam: John Benjamins.
Sharvit, Yael. 2011. Covaluation and unexpected BT effects. *Journal of Semantics* 28:55–106.
Stockwell, Richard, Aya Meltzer-Asscher, and Dominique Sportiche. 2021. There is reconstruction for Condition C in English questions. In *NELS 51: Proceedings of the Fifty-First Annual Meeting of the North East Linguistic Society*, eds. Alessa Farinella and Angelica Hill, volume 2, 205–214.
Tada, Hiroaki. 1993. A/A-bar partition in derivation. Ph.D. dissertation, MIT, Cambridge, MA.
Tai, James H. Y. 1973. Chinese as a SOV language. In *Proceedings from the Annual Meeting of the Chicago Linguistic Society*, volume 1, 659–671. Chicago Linguistic Society.
Trechsel, Frank R. 1995. Binding and coreference in Jakaltek. In *Grammatical Relations: Theoretical approaches and empirical questions*, eds. Clifford S. Burgess, Katarzyna Dziwirek, and Donna Gerdts, 449–471. Chicago University Press.
Vázquez Álvarez, Juan J. 2011. A grammar of Chol, a Mayan language. Ph.D. dissertation, University of Texas Austin, Austin, TX.
Zwart, Jan-Wouter. 2002. Issues related to a Derivational Theory of Binding. In *Derivation and explanation in the Minimalist Program*, eds. Samuel David Epstein and T. Daniel Seeley, 269–304. Oxford: Blackwell Publishers.