# A syntax-prosody mismatch as "right extraposition": Evidence from Mayan*

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## 1 Introduction

Overarching question: How reliable is prosody as syntactic evidence?

Looking at two Mayan languages, I show that a syntax–prosody mapping algorithm that does away with mismatches can guide us to otherwise unnoticed syntactic facts about these languages.

**Puzzle.** Some Mayan languages exhibit allomorphy at the edge of certain phrases: **prosodic allomorphy** (see e.g. Aissen 1992, Henderson 2012).

In Chuj, status suffixes (SS) *-i* (marks intransitives) and *-V'* (transitives) appear at the end of sentences, but not when before an adverb or subject.[1]

(1) a. Ix-in-wa'-[ i / *Ø ].
PFV-B1S-eat-SS
'I ate.'

b. Ix-in-wa'-[ *i / Ø ] k'ojank'olal.
PFV-B1S-eat-SS slowly
'I ate slowly.'

c. Ix-wa'-[ *i / Ø ] ix Malin.
PFV-eat-SS CLF Malin
'Malin ate.' (*-i* = "long allomorph" | *-Ø* = "short allomorph")

* *Yuj wal yos* Matal Torres, Agenor Torres País, Tigo Torres País, Yun Torres, Elsa Torres Velasco, Xun Torres Velasquez, Ana Velasco and Heb'in Velasco. Thanks to Jessica Coon, Michael Wagner and Aron Hirsch for help and guidance. Thanks also to Lauren Clemens, Robert Henderson, Carol-Rose Little, Martina Martinović, Rodrigo Ranero, and participants of CILLA IX. A special thanks to Telma and Silvia Can Pixabaj for help with K'iche'.

[1] Abbreviations and glosses: A: ergative/possession; B: absolutive; CLF: noun classifier; INDF: indefinite; SS: status suffix; PFV: perfective; TOP: topic.

We could hypothesize that long allomorphs appear only at the end of sentences, **however**:

(2) Ix-w-il-[ a' / *Ø ] [CP to ix-ach-xit' ek'-i ].
PFV-A1S-see-SS COMP PFV-B2S-go DIR.pass-SS
'I saw that you went.' (complement clause)

> RESEARCH QUESTION
> What conditions the presence or absence of long allomorphs?

**Henderson (2012)** on K'iche' offers an "edge-based" account (modelled in OT, after Selkirk 1984, Selkirk 1986):

(3) *Syntax-prosody mapping algorithm in Henderson 2012*
a. Long allomorphs appear at the end of intonational phrases ($\iota$-phrase).
b. $\iota$-phrases align with the left and right edges of CPs

With (3), we predict the presence of a long allomorph at the end of sentences (*-ik* is the K'iche' equivalent of *-i*):

(4) K'ICHE'
a. [CP Xin-kos-[ ik / *Ø ] ].
INFL-tire-SS
'I'm tired.' (Henderson 2012, (5a))
b. ( xin-kos-**ik** )$_{\iota\text{-phrase}}$

The algorithm also derives the presence of long allomorphs before complement clauses.

- It's here that it's crucial to make reference to the left edge of the CP (the left edge of the embedded CP will trigger an $\iota$-phrase boundary).

(5) K'ICHE'
a. [CP Xinw-il-**o** || [CP chi xe'-el-**ik** ]].
INFL-see-SS COMP INFL-go-SS
'I saw that they went.' (Henderson 2012, (60))
b. ( Xinw-il-**o** )$_{\iota\text{-phrase}}$ ( chi xe'-el-**ik** )$_{\iota\text{-phrase}}$

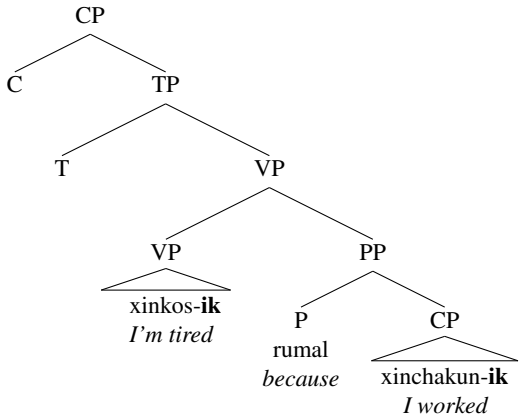
**Mismatch.** But Henderson argues that there sometimes are mismatches of the type illustrated below ("‖" indicates ι-boundaries):

(6) a. $[_{CP}$ X Y $[_{CP}$ Z $]]$ (syntax)
b. $(\text{ X Y })_{\iota\text{-phrase}} \,\|\, (\text{ Z })_{\iota\text{-phrase}}$ (predicted prosody)
c. $(\text{ X })_{\iota\text{-phrase}} \,\|\, (\text{ Y Z })_{\iota\text{-phrase}}$ (actual prosody)

Henderson argues this type of mismatch arises with "reason adjuncts" (aka *because*-clauses), which he assumes adjoin to VP:

(7) K'ICHE'
Xin-kos-ik / *Ø $[_{PP}$ *r-umal* $[_{CP}$ xin-chakun-ik $]]$.
INFL-tire-SS 3SG-because INFL-work-SS
'I'm tired because I worked.' (Henderson 2012, 41a)

(8)




(Henderson 2012, 43)

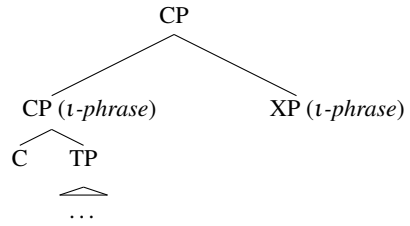
(9) a. $(\ldots\text{-Ø } \textit{rumal}\ldots)_{\iota\text{-}\iota} \,\|\, (\ \ldots\ )_{\iota\text{-phrase}}$ (predicted prosody)
b. $(\ldots\text{-ik})_{\iota\text{-phrase}} \,\|\, (\ \textit{rumal}\ldots)_{\iota\text{-phrase}}$ (actual prosody)

Henderson proposes to derive this mismatch via constraint ranking (see §3), leading to a complex relationship between ι-phrases and CP edges.

**Goal.** Show empirical support that the clauses that create the apparent mismatches attach much higher than previously assumed, allowing for an analysis that does away with mismatches.

- I show that clausal adjuncts and CP complements are particularly high.
- And I propose a different mapping algorithm, which derives ι-phrase boundaries by only making reference to the right edges of CPs (and not the left edges).

(10) *High right adjunction*




(11) a. $(\ldots\text{-ik})_{\iota\text{-phrase}} \,\|\, (\ \textit{rumal}\ldots)_{\iota\text{-phrase}}$ (predicted prosody)
b. $(\ldots\text{-ik})_{\iota\text{-phrase}} \,\|\, (\ \textit{rumal}\ldots)_{\iota\text{-phrase}}$ (actual prosody)

- Conclusion: We can take apparent instances of mismatches as evidence that we might need to revisit our syntactic analysis (as argued in work like Steedman 1991; Wagner 2010; and Hirsch & Wagner 2015).

**Rest of talk:** §2 More data —§3 Analysis —§4 conclusion

## 2 More data: Chuj and prosodic allomorphy

**Chuj.** Chuj is a Mayan language spoken in Guatemala and Mexico by ≈70,000 speakers (Piedrasanta 2009; Buenrostro 2013; for grammars, see Hopkins 1967; Maxwell 1981; and García Pablo & Domingo Pascual 2007.).

**Data.** The data comes from original elicitation in Guatemala, Mexico, and Canada and in transcriptions available on the *Archive of Indigenous Languages of Latin America* (Mateo Pedro & Coon 2017).

**Long allomorphs.** Though status suffixes alternate with a null suffix, many long allomorphs alternate with overt allomorphs.[2]

Table 1: Prosodic allomorphy in Chuj

| Category | Phrase-final | Not final | Function |
|---|---|---|---|
| | *Long* | *Short* | |
| Status suffixes | *-V'* | *-Ø* | transitive SS |
| (SS) | *-i* | *-Ø* | intransitive SS |
| Relational nouns | *-et'ok* | *-et'* | 'with' |
| | *-u'uj* | *-uj* | 'for' |
| | *-iko* | *-ik* | 'for' (reflexive) |
| Noun classifiers | *ni'o'* | *ni* | male individuals |
| (also used as | *utni* | *uch* | female individuals |
| pronouns) | *k'e'en* | *k'en* | stone entities |
| | *lu'um* | *lum* | land entities |
| | (other classifiers appear with final glottalization when in phrase-final position, but not when not) | | |
| WH-word | *tasi* | *tas* | 'what' |
| Dubitative marker | *(h)ama* | *(h)am* | expresses doubt |

(12) Ix-w-il ni'o' / *ni.
PFV-A1S-see PRON.M
'I saw him (the child).'

(13) Ix-s-chel ni / *ni'o' [DP winh winak ].
PFV-A3-hug PRON.M CLF man
'The man hugged him.'

(14) Ix-y-al ni'o' / *ni [CP to ix-in-b'at-i ].
PFV-A3-say PRON.M COMP PFV-B1S-go-SS
'He said that I went.'

- Henderson (2012) observes that the long allomorphs correlate with a general tendency toward high phrase-final boundary tones.
- Rising intonation at the end of sentences is documented for many Mayan languages (see Berinstein 1991; Bennett 2016; DiCanio & Bennett to appear).

[2]Note that similar paradigms are found in other Mayan languages, like Tsotsil, Popti', and Tz'utujil (Day 1973; Craig 1977, 1986; Aissen 1992), and that though the distribution always appears to be parallel, the allomorphs are not necessarily the same.

Figure 1: Final rising intonation in Chuj (12)

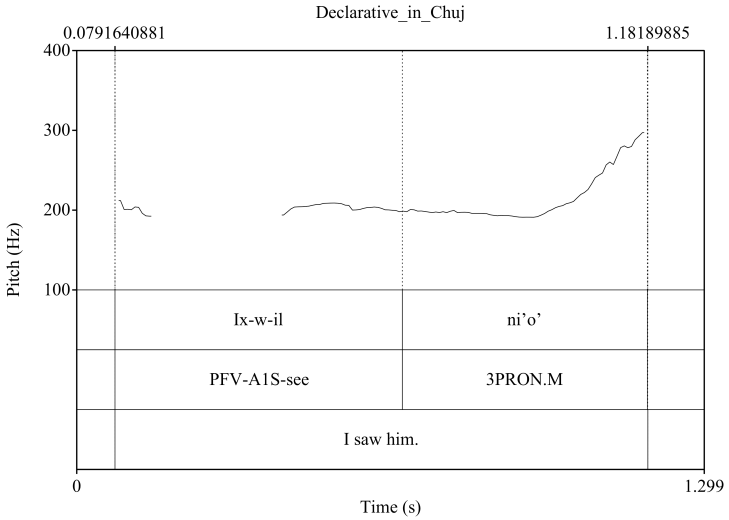
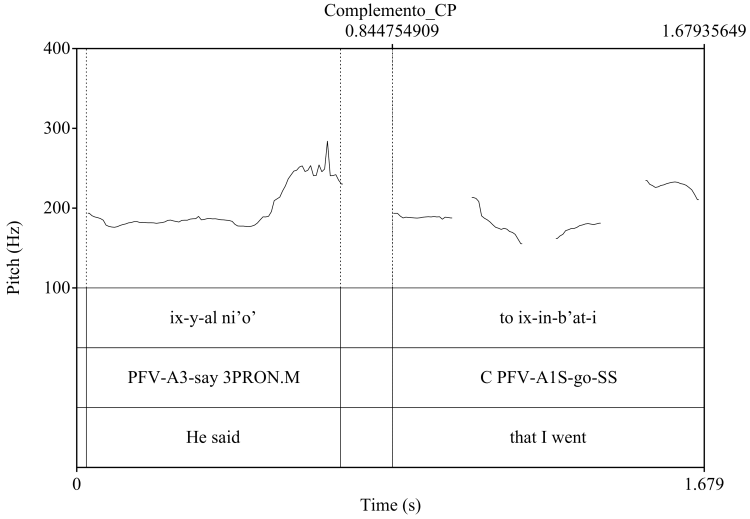



Figure 2: Final rising intonation before CP complement (14)




Long allomorphs also arise at the end of topicalized constituents:

(15) Ha ni'o'$_k$ / *ni [CP ix-s-man jun onh ni$_k$ ewi ].
TOP PRON.M PFV-A3-buy INDF avocado CLF yesterday
≈ 'As for him, he bought an avocado yesterday.'

## 3 Analysis

My proposal (based in part on Henderson 2012 and Aissen 1992) includes the following components:

(16) *Proposal*

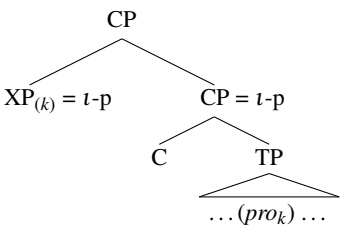
a. Long allomorphs appear at the end of $\iota$-phrases.
(following Henderson 2012, see appendix A for evidence)

b. An $\iota$-phrase boundary is found at the right edge of CPs.

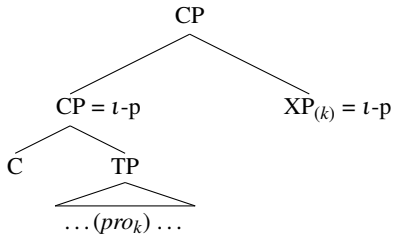
c. Phrases that adjoin to a phrase ending with a prosodic boundary $x$ also end with a prosodic boundary $x$ (see trees).[3]
(based on Wagner 2005)

d. Complement clauses and clausal adjuncts obligatorily adjoin above the matrix CP.

*Left adjunction*:




*Right adjunction*:




- Many projections can adjoin above matrix CP, including topicalized constituents. The condition in (16c) captures the fact that all such projections will end with an $\iota$-phrase boundary, as shown in (15) above.
- This fits with Aissen's (1992) account of topics across Mayan; she also argues that topics form their own $\iota$-phrase.

**Next:** I show that the proposed syntax–prosody mapping algorithm (which does away with mismatches) guides us to a better understanding of syntactic facts about Chuj and K'iche'.

[3] I'm currently evaluating the possibility that $\iota$-phrases correspond to cycles (Chomsky 2001; Wagner 2005, 2010; and also Mendes & Ranero 2019 K'iche' CPs are phases, while vPs are not. In that sense, the matrix CP would spell out a (matrix TP) cycle, and any phrase that adjoins to the matrix CP would have to be interpreted in its own cycle.

### 3.1 Complement clauses

Here, we see syntactic evidence that that CP complements occupy a structurally high position.

**Evidence 1: word order** Consider the following examples:

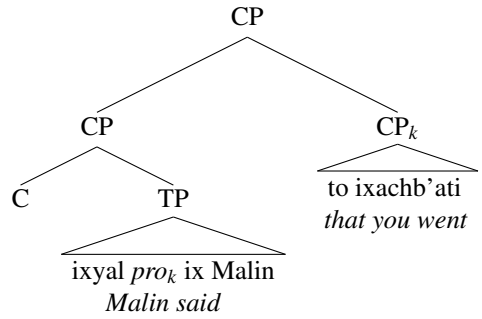
(17) *DP complement (VOS)*
Ix-y-il {*ix Malin} waj Xun {ix Malin}
PFV-A3-see CLF Xun CLF Malin
'Malin saw Xun.'

(18) *CP complement (VSO)*
Ix-y-al {ix Malin} [CP to ix-ach-b'at-i] {*ix Malin} .
PFV-A3-say CLF Malin COMP PFV-B2S-go-SS
'Malin said that you went.'

- The difference in word order between DP and CP complements is well documented across Mayan (Craig 1977; Aissen 1992, 2017 for Tsotsil and Popti' and Can Pixabaj 2015 for K'iche').
- Aissen (1992, 2000) proposes obligatory extraposition of CPs to the right, but to a lower position (VP).
- I propose they adjoin higher (and are coindexed with a null pronoun).

The proposal predicts VSO order: if complement CPs occupy a position outside the matrix CP, they should appear after the subject.

(19)



The same pattern is found in K'iche', also normally VOS (Henderson 2012; Can Pixabaj 2015):[4]

(20) K'ICHE'
X-k-eta'maj le winaq [chi x-u'l le ajtijaab'].
PFV-A3P-know DET people COMP PFV-come DET teacher
'The people knew that the teachers arrive.' (Can Pixabaj 2015)

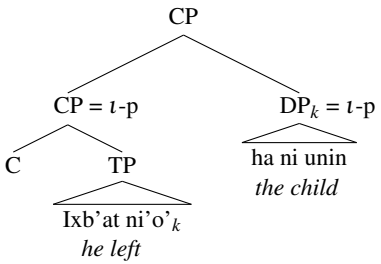
**Evidence 2: Parallel with topics.** In Chuj, DP topics are marked with the marker *ha* and a resumptive pronoun. They can arise left or right:[5]

(21) *Left topic*
[$_{\text{TOP}}$ **Ha ni unin** ]$_k$ ix-b'at *ni'o'$_k$ / *ni*.
TOP CLF child PFV-go PRON.M
'The child, he left.'

(22) *Right topic*
Ix-b'at *ni'o'$_k$ / *ni* [$_{\text{TOP}}$ **ha ni unin** ]$_k$.
PFV-go PRON.M TOP CLF child
'He left, the child.'

- Notice the long allomorph (*ni'o'*) immediately before the right topic.

Based on Aissen 1992 and following Bielig (2015), I assume that these topics are "external"; they adjoin above the matrix CP:

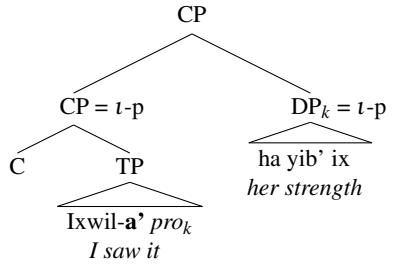
(23)



[4]Henderson (2012) makes the same observation for complement clauses in K'iche', and discusses the possibility of resorting to a right extraposition analysis. However, he abandons this analysis, see appendix B.

[5]Right topics have been documented in other Mayan languages, see e.g. Can Pixabaj 2004 (K'iche'), Curiel 2007 (Tojolab'al) and Polian 2013 (Tseltal).

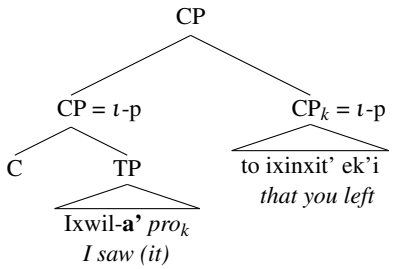
Some nouns are not pronominalizable (Buenrostro et al. 1989; Royer 2019). In this case, a status suffix appears before the right topic:

(24) Ix-w-il-a' / *Ø [$_{\text{TOP}}$ ha y-ib' ix ].
PFV-A1S-see-SS TOP A3-strength PRON.F
'I saw it, her strength.'

(25)



And a parallel with complement clauses reveals itself:

(2) Ix-w-il-a' / *Ø [$_{\text{CP}}$ to ix-ach-xit' ek'-i ].
PFV-A1S-see-SS COMP PFV-B2S-go DIR.pass-SS
'I saw (it) that you left.'

(26)



**Evidence 3: Position of adjuncts** Adjuncts can't appear after complement clauses:

(27) *Adverbs and complement clauses*
W-ab' {ewi} [$_{\text{CP}}$ to tz-ex-b'at-i ] {*ewi}.
A1S-hear yesterday COMP IPV-B2P-go-SS yesterday
'I heard (yesterday) that y'all are going (yesterday).'

### 3.2 Clausal adjuncts

We now return to the central problem: the mismatch between syntax and prosody proposed in Henderson 2012. In Chuj, as in K'iche', we find long allomorphs appearing before "reason adjuncts":

(7) K'ICHE'
Xin-kos-[ik / *Ø] [PP r-umal [CP xin-chakun-ik ]].
INFL-tire-SS 3SG-because INFL-work-SS
'I'm tired because I worked.'

(28) CHUJ
Ix-in-way-[i / *Ø] [ y-oj-to tekumb'elal w-aj-i ].
PFV-B1S-sleep-SS A3-for-COMP tired A1S-be-SS
'I slept because I was tired.'

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Some clarifications:

- *r-umal* and *y-oj* (without *to*) are "relational nouns".
- in (7) and (28) they combine with CPs, hence why "clausal adjuncts".
  - *r-umal* can aslo combine with a nominal complement:

    (29) Xi-kos-[(*ik)] [PP r-umal [NP nu-chaak ]].
    INFL-tired-SS 2SG-because my-work
    'I'm tied because of my work.' Henderson 2012, (40a)

- Relational nouns in Mayan languages function more or less like prepositions (Larsen 1988; Coon 2016; Aissen et al. 2017).
- For this reason, Henderson (2012) analyzes *r-umal* in (7) like the a head of a prepositional phrase.

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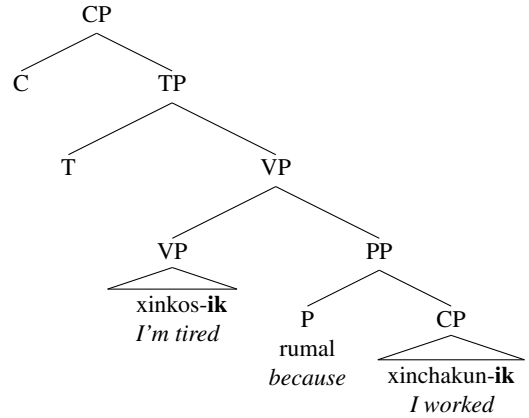
Recall that Henderson assumes the syntax in (30). The clausal adjunct adjoins at the VP level.

(30)




(31) a. ( . . . -Ø *rumal* )$_{\iota\text{-phrase}}$ ‖ ( . . . )$_{\iota\text{-phrase}}$ (predicted prosody)
b. ( . . . -ik )$_{\iota\text{-phrase}}$ ‖ ( *rumal* . . . )$_{\iota\text{-phrase}}$ (actual prosody)

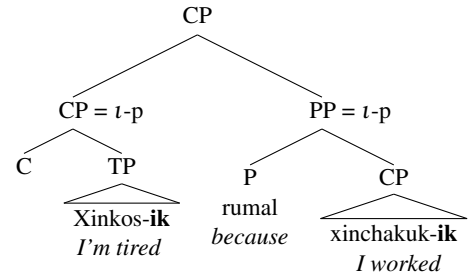
Overgeneration issue → an $\iota$-phrase boundary at left edge of PP.
Undergeneration issue → no $\iota$-phrase boundary at left edge of CP.

So Henderson proposes a constraint that overrides the one-to-one correspondence between syntax and prosody:

(32) COMPLEMENT-$\phi$ (based on *sense unit condition*, Selkirk 1984)
A functional head is parsed into the same phonological phrase as its syntactic complement. (Henderson 2012, 68)

**Alternative.** In my proposal, there's **no** mismatch between syntax and prosody. The adjunct just adjoins really high:

(33)




(the proposal predicts an $\iota$-phrase boundary only at the right edge of CPs)

Now, I show that this alternative is empirically motivated.

**Evidence 1: Position of clausal adjuncts** Clausal adjuncts need to appear after topicalized consitituents:

(34) a. Ix-b'at winh [$_{\text{TOP}}$ ha winh winak ] [$_{\text{ADJ.CP}}$ yojto
PFV-go 3PRON.M TOP CLF man because
ix-och s-wejel winh ].
PFV-go.out A3-hunger CLF
≈ 'The man, he left because he was hungry.'

b. *Ixb'at winh [$_{\text{ADJ.CP}}$ yojto ixoch swejel winh ] [$_{\text{TOP}}$ ha winh winak ].

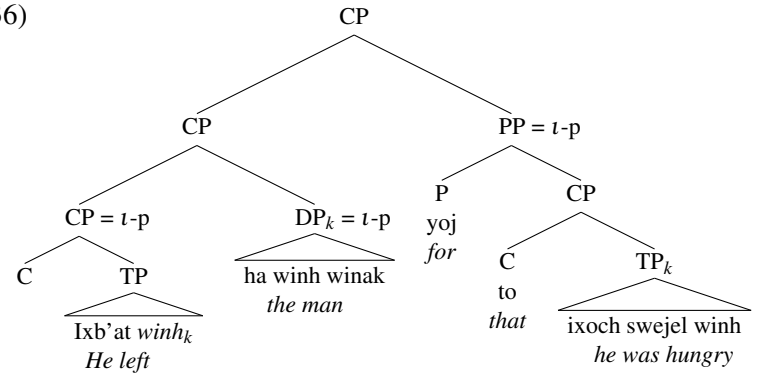
The same thing happens with complement clauses: clausal adjuncts must appear after complement clauses:[6]

(35) a. Ix-y-al waj Xun [$_{\text{COMP.CP}}$ to ix-b'at ix Malin ]
PFV-A3S-say CLF Xun COMP PFV-go CLF Malin
[$_{\text{ADJ.CP}}$ yojto ix-y-al waj Petul t'a winh ].
because PFV-A3S-say CLF Petul PREP CLF
'Xun said that Malin went because Petul told him.'

b. *Ixyal waj Xun [$_{\text{ADJ.CP}}$ yojto ixyal waj Petul t'a winh ] [$_{\text{COMP.CP}}$ to ixb'at ix Malin ].

These data suggest a **very high** position for clausal adjuncts, above topicalized constituents:

(36)




[6]The same thing is found at the left periphery. Clausal adjuncts must appear before topicalized constituents and CP complements produced in the left periphery.

**K'iche'?** These data must be verified, but there's independent evidence that clausal adjuncts (including reason adjuncts) are also high.[7]

The extraction of various types of adjuncts in K'iche' (and other K'iche'an languages) triggers the obligatory presence of the fronting clitic *-wi* (see e.g. Velleman 2014; Can Pixabaj 2015; Mendes & Ranero 2019):

(37) Jas r-uuk' x-Ø-ki-tij **wi** le ki-rikiil?
WH A3S-SR PFV-B3S-A3P-eat WI DET A3P-food
'With what did you eat your food?' (Can Pixabaj 2015)

- But Mendes & Ranero (2019) show that *-wi* **never** occurs with clausal adjuncts.
- This makes sense if clausal adjuncts are always structurally high: they don't trigger *-wi* because they never extract.[8]

**Evidence 2: Comparison with other adjuncts.** If clausal adjuncts attach at VP, we'd predict that they could appear before other VP adjuncts. However, this is not possible:

(38) Context: *You live and go to school in Yuxquen.*

a. Ix-in-man jun ch'anh libro [$_{\text{PP}}$ t'a Nentón ]
PFV-A1S-buy INDF CLF book PREP Nentón
[$_{\text{ADJ.CP}}$ yojto ol-a-k'an ch'anh ] .
because PROSP-A2S-ask CLF
'I bought a book in Nentón because you'll need it.'

b. #Ixinman jun ch'anh libro [$_{\text{ADJ.CP}}$ yojto ol-a-k'an ch'anh ] [$_{\text{PP}}$ t'a Nentón ]

[7]Without further stipulation, the structure proposed in (36) makes the prediction that negation should not be able to take scope over the *because*-clause (see e.g. Lasnik 1972; Torrego 2018). But in Chuj, negation in the matrix clause can take scope over because clauses. I leave this issue for future work.

[8]I thank Rodrigo Ranero for pointing this out to me.

## 4 Two additional arguments and conclusion

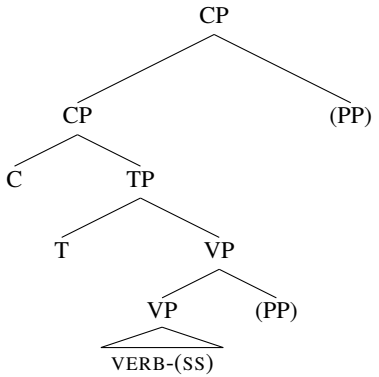
**Optionality.** Chuj long allomorphs are optional before PP adjuncts.

(39) Ix-in-b'at-(i) [$_{PP}$ t'a ha-pat ].
PFV-B1S-go-SS PREP A2-house
'I went to your house.'

It's not clear how Henderson 2012 could account for this. But an analysis that resorts to syntactic configurations explains these data with ease:

(40) a. In Chuj, PPs can adjoin either to VP or above CP.

b.




c. ( . . . -Ø PP )$_{\text{fraise-}\iota}$ (possible prosody)

d. ( . . . -SS )$_{\iota\text{-phrase}}$ ‖ ( PP )$_{\iota\text{-phrase}}$ (possible prosody)

A similar optionality is observed with maximal free relatives:

(41) Ix-in-yam-(a') [ tas ix-a-man-a' ].
PFV-A1S-grab-SS WH PFV-A2S-buy-SS
'I grabbed what you bought.'[9]

- Caponigro 2003 (y Kotek & Erlewine 2016 on Chuj specifically) analyze maximal free relatives as CPs with a covert DP layer.
- In sync with (optional) right topics in Chuj, the optionality for maximal free relatives to extrapose is not surprising.

[9]Existential free relatives cannot appear with a long allomorph before them. This means that they obligatorily stay low in the structure.

**Relative clauses.** Henderson also aligns $\iota$-phrases with the **left** edges of CPs. This predicts an $\iota$-boundary after the head of a relative clause:

(42) a. [ . . . *head* [$_{CP}$ *relative clause* ]]

b. Predicted prosodic phrasing in Henderson 2012
( . . . *head* )$_{\iota\text{-phrase}}$ ‖ ( *relative clause* )$_{\iota\text{-phrase}}$

The algorithm proposed here only predicts an $\iota$-boundary at the end of CPs, so a head and its relative clause should be parsed together:

(43) Predicted prosodic phrasing given (16)
( . . . *head + relative clause* )$_{\iota\text{-phrase}}$

Chuj provides evidence in favour of the algorithm proposed here—long allomorphs are not possible before relative clauses:

(44) Ix-w-il [$_{DP}$ ni / *ni'o' ] [$_{CP}$ tz'-al-an q'anjob'al ]].
PFV-A1S-see PRON.M IPFV-speak-AF Q'anjob'al
'I saw the one who speaks Q'anjob'al.' (lit: I saw he who...).

## Conclusion

- I followed Henderson (2012), in positing that long allomorphs are conditioned by the right edge of $\iota$-phrases.
- However, I proposed a different syntax–prosody mapping algorithm which eliminated the need to resort to mismatches.
- This guided us to interesting predictions about the syntax, which we saw were borne out.
- This is expected if certain types of mismatches are in fact impossible, and we take apparent instances of mismatches as evidence that the syntactic analysis must be revisited (as suggested in work by Steedman 1991, Wagner 2010, and Hirsch & Wagner 2015).

The proposal reveals an interesting property of complement clauses and reason adjuncts in two Mayan languages (and potentially in other Mayan languages): *that they occupy a very high position in the syntax.*

**Future.** I am exploring the possibility that complement clauses must be structurally high for semantic reasons, based on work by Moulton (2009, 2015) and Coon (2019).

- Coon (2019) argues that verbal roots in Chuj must combine with an internal argument of semantic type *e*. But CPs are usually analyzed as propositions—of type $\langle s,t \rangle$ (see Hintikka 1969, though also see Kratzer 2006 and Moulton 2015 for a view of CPs as predicates of propositional content).
- The structure I propose offers an argument of the right type to semantically compose: a pronoun of type *e*. This could be a motivation for why the complement clauses must extrapose or be base generated high.

# References


Aissen, J. (1992), 'Topic and focus in Mayan', *Language* **68**(1), 43–80.

Aissen, J. (2000), Prosodic conditions on anaphora and clitics in Jakaltek, *in* A. Carnie & E. Guilfoyle, eds, 'The Syntax of Verb Initial Languages', Oxford University Press, pp. 185–200.

Aissen, J. (2017), Complement clauses, *in* J. Aissen, N. C. England & R. Z. Maldonado, eds, 'The Mayan Languages', Routledge, pp. 259–292.

Aissen, J., England, N. C. & Zavala, R. (2017), Introduction, *in* J. Aissen, N. C. England & R. Zavala, eds, 'The Mayan Languages', Routledge, pp. 1–12.

Bennett, R. (2016), 'Mayan phonology', *Language and Linguistic Compass* **10**(10), 469–514.

Berinstein, A. E. (1991), The role of intonation in K'ekchi Mayan discourse., *in* C. McLemore, ed., 'Texas Linguistic Forum', University of Texas Austin, pp. 1–19.

Bielig, L. (2015), Resumptive classifiers in Chuj high topic constructions. BA Thesis, McGill University.

Buenrostro, C. (2013), La voz en Chuj de San Mateo Ixtatán, PhD thesis, El Colegio de México, Mexico City.

Buenrostro, C., Díaz, J. C. & Zavala, R. (1989), Sistema de clasificación nominal del Chuj, *in* 'Memorias del Segundo Coloquio Internacional de Mayistas', Vol. II, UNAM, Mexico City.

Can Pixabaj, T. (2004), 'La topicalización en K'ichee': una perspectiva discursiva', Licenciatura thesis, Universidad Rafael Landívar, Guatemala.

Can Pixabaj, T. A. (2015), Complement and purpose clauses in K'iche', PhD thesis, University of Texas Austin.

Can Pixabaj, T. A. (to appear), Headless relative clauses in K'iche', *in* I. Caponigro, H. Torrence & R. Zavala, eds, 'Headless relative clauses in Mesoamerica languages', Oxford University Press.

Caponigro, I. (2003), Free not to ask: on the semantics of free relatives and wh-words cross-linguistically, PhD thesis, University of California at Los Angeles.

Chomsky, N. (2001), Derivation by phase, *in* M. Kenstowicz, ed., 'Ken Hale: A life in language', MIT Press, Cambridge, MA, pp. 1–52.

Coon, J. (2016), 'Mayan morphosyntax', *Language and Linguistics Compass* **10**(10), 515–550.

Coon, J. (2019), 'Building verbs in Chuj: Consequences for the nature of roots', *Journal of Linguistics* **55**(1), 35–81.

Craig, C. G. (1977), *The Structure of Jacaltec*, University of Texas Press, Austin, TX.

Craig, C. G. (1986), 'Jacaltec noun classifiers', *Lingua* **70**, 241–284.

Curiel, A. (2007), Estructura de la información, enclíticos y configuración sintáctica en tojol 'ab'al, Master's thesis, CIESAS, México.

Day, C. (1973), *The Jacaltec Langauge*, Vol. 12 of *Language Science Monographs*, Indiana University.

DiCanio, C. & Bennett, R. (to appear), Prosody in Mesoamerican languages, *in* C. Gussenhoven & A. Chen, eds, 'The Oxford prosody handbook', Oxford University Press.

García Pablo, G. & Domingo Pascual, P. M. (2007), *Stzolalil Sloloni-Spaxtini heb' Chuj: Gramática Descriptiva Chuj*, Academia de Lenguas Mayas de Guatemala.

Henderson, R. (2012), 'Morphological alternations at the intonational phrase edge: The case of K'ichee", *Natural Language and Linguistic Theory* **30**(3), 741–787.

Hintikka, J. (1969), Semantics for porpositional attitudes, *in* J. Hintikka, ed., 'Models for modalities', Springer, Dordrecht, pp. 87–111.

Hirsch, A. & Wagner, M. (2015), Rightward movement affects prosodic phrasing, *in* D. Ozyildiz & T. Bui, eds, 'Proceedings of the 45th meeting of the North-East Linguistics Society'.

Hopkins, N. (1967), The Chuj Language, PhD thesis, University of Chicago, Chicago, IL.

Kotek, H. & Erlewine, M. Y. (2016), Unifying definite and indefinite free relatives: evidence from mayan, *in* 'Proceedings of NELS 46', pp. 241–254.

Kratzer, A. (2006), 'Decomposing attitude verbs', Handout from talk given at The Hebrew University of Jerusalem.

Larsen, T. W. (1988), Manifestations of ergativity in Quiché grammar, PhD thesis, University of California Berkeley, Berkeley, CA.

Lasnik, H. (1972), Analyses of negation in English, PhD thesis, Massachusetts Institute of Technology.

Mateo Pedro, P. (2011), The acquisition of unaccusativity in Q'anjob'al Maya. Ms. Harvard University.

Mateo Pedro, P. & Coon, J. (2017), 'Chuj oral tradition collection of Pedro Mateo Pedro and Jessica Coon', Archive of Indigenous Languages of Latin America: University of Texas Austin.

Maxwell, J. (1981), How to talk to people who talk *chekel* 'different': The Chuj (Mayan) solution, PhD thesis, University of Chicago, Chicago, IL.

Mendes, G. & Ranero, R. (2019), 'Chain reduction via Substitution: Evidence from Mayan', Ms. University of Maryland.

Moulton, K. (2009), Natural selection and the syntax of clausal comlementation, PhD thesis, University of Massachusetts at Amherst.

Moulton, K. (2015), 'CPs: Copies and compositionality', *Linguistic Inquiry* **46**(2), 305–342.

Piedrasanta, R. (2009), *Los Chuj, Unidad y rupturas en su espacio*, Amrar Editores, Guatemala City, Guatemala.

Polian, G. (2013), *Gramática del tseltal de Oxchuc*, Publicaciones de la Casa Chata, Centro de Investigaciones y Estudios Superiores en Antropología Social, México.

Royer, J. (2019), Noun classifiers and the composition of DP in Chuj (Mayan). Ms. McGill University.

Selkirk, E. (1984), *Phonology and syntax: The relation between sound and structure*, Cambridge University Press.

Selkirk, E. O. (1986), On Derived Domains in Sentence Phonology, *in* 'Phonology Yearbook', Vol. 3, pp. 371–405.

Steedman, M. (1991), 'Structure and intonation', *Language* **67**(2), 260–296.

Torrego, E. (2018), Phasehood and Romance adverbial *because*-clauses, *in* A. Gallego & R. Martin, eds, 'Language, Syntax, and the Natural Sciences', Cambridge University Press, pp. 99–113.

Velleman, L. (2014), Focus and Movement in a variety of K'ichee', PhD thesis, University of Texas at Austin.

Wagner, M. (2005), Prosody and Recursion, Doctoral dissertation, MIT, Cambridge, MA.

Wagner, M. (2010), 'Prosody and recursion in coordinate structures and beyond', *Natural Langauge and Linguistic Theory* **28**, 183–237.

## A Why not a syntactic account?

Since long allomorphs generally appear at the edge of CPs (and TopPs), one might ask if we could derive the long allomorph data with syntax alone. But there are several reasons to prefer a phonological account.

**Last "pronounced" element in CP.** Null morphemes sometimes follow a long allomorph in CP. Recall example (24):

(24) Ix-w-il-a' / *Ø [$_{TOP}$ ha y-ib' ix ].
PFV-A1S-see-SS TOP A3-strength her
'I saw it, her strength.'

Based on other topics in Chuj, a null *pro* arguably follows the verb:

(45) [[$_{CP}$ Ixwil-a' *pro* ] [$_{TOP}$ ha yib' ix ]]

So unless a syntactic account makes reference to the last "pronounced" element in a CP, it fails to predict the presence of the status suffix in (24).

**Other environments.** Long allomorphs also arise in contexts where we expect a short one if the use of the short allomoprh would otherwise end in a consonant cluster (Coon 2019, see also Mateo Pedro 2011):

(46) a. Ix-onh-xik-w-***(i)** k'atzitz.
PFV-B1P-chop-AP-IV wood
'We wood-chopped.' (Coon 2019)

b. Tz-jax-j-***(i)** ixim ixim.
IPFV-grind-PASS-IV CLF corn
'The corn was ground.' (Coon 2019)

It's not clear what a syntactic account could say about cases like (46).

See also Henderson 2012 for arguments that long allomorphs appear to help realize the high intonation contour associated with sentence-final prosody.

## B Free relatives in K'iche'

Based on the distribution of complement clauses in K'iche', Henderson (2012) considers the possibility that CPs always right extrapose, and that this is what causes the presence of the status suffix.

However, he ends up rejecting this kind of account based on the following free relative data (assumed to be a CP):

(47) a. Xki-tij-**o** [ jas xu-loq'-**o** ] le ixoqi'.
INFL-eat-SS WH INFL-buy-SS the woman
'The woman ate what he bought.' Henderson 2012, (63a)

b. *Xki-tij-Ø le ixoqi' [ jas xu-loq'-**o** ].
INFL-eat-SS the woman WH INFL-buy-SS
'The woman ate what he bought.' Henderson 2012, (63b)

Here, (47a) is problematic for my generalization, since the status suffix appears before a constituent that seems to be base generated low.

But I haven't been able to corroborate these data.

- The K'iche' consultants I have talked to judge (47a) as ungrammatical.
- Moreover, Can Pixabaj (to appear), in a recent work on free relatives in K'iche', excludes this type of construction as a possible free relative.
- Future work should establish if the examples in (47) are truly a counter-argument for the analysis proposed here.