

Distinguishing adjectives from relative clauses in Chuj (With help from Ch'ol)*

Jessica Coon
McGill University

SUMMARY

In Chuj adjectival modifiers may appear either pre- or post-nominally. In this paper I argue that prenominal modifiers in Chuj are true attributive adjectives, while postnominal modifiers are in fact relative clauses formed from adjectival stative predicates. Because these adjectival predicates have no overt copula and bear no overt inflection, and because argument relative clauses in Chuj are not introduced by relative pronouns, there is no morphological evidence that postnominal adjectives are in fact relative clauses. I draw instead on a variety of tests from Ch'ol, a distantly-related Mayan language that *does* have special relativization morphology, to demonstrate the difference between Chuj adjectival stems appearing pre- and post-nominally.

RÉSUMÉ

En chuj les modificateurs adjectivaux peuvent apparaître dans une position soit pré ou postnominale. Dans cet article, je soutiens que les modificateurs prénominaux sont des adjectifs attributifs, alors que les modificateurs postnominiaux sont en fait des subordinées relatives formées de prédicats adjectivaux statifs. Étant donné que ces prédicats adjectivaux ne possèdent ni copule ni inflexion, et dû au fait que les arguments formés de subordinées relatives en chuj ne sont jamais introduits de pronoms relatifs, il n'existe aucune évidence morphologique permettant d'établir que les adjectifs postnominiaux sont en fait des subordinées relatives. Je me réfère ainsi à une variété de diagnostics du ch'ol, autre langue maya ayant un lien de parenté éloigné au chuj et qui possède de la morphologie spéciale servant à la relativisation, afin de démontrer la différence entre les troncs adjectivaux du chuj qui apparaissent dans des positions pré et postnominales.

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1 INTRODUCTION

In Chuj, a language belonging to the Q’anjob’alan subbranch of the Mayan family, modifiers like *chakchak* ‘red’, may either precede or follow the head noun internally to the DP, as shown by the examples in (1a) and (1b).¹

- (1) a. Ix-in-man [nok’ **chakchak** kaxlan].
 PFV-A1SG-buy CLF red chicken
 ‘I bought the red chicken.’
 b. Ix-in-man [nok’ kaxlan **chakchak**].
 PFV-A1SG-buy CLF chicken red
 ‘I bought the { red chicken / the chicken that is red }.’

As indicated above, it is not immediately clear whether the appropriate translation of the sentence in (1b) is one in which *chakchak* is an attributive adjective (‘red chicken’) or a postnominal relative clause (‘chicken that is red’). This is because adjectival predicates in Chuj appear with no overt copula, and—like other stative predicates in the language—they do not appear inflected with tense–aspect–mood (TAM) or other inflectional morphology, as shown in (2).

- (2) **Chakchak** [nok’ kaxlan].
 red CLF chicken
 ‘The chicken is red.’

In other work on Chuj, postnominal modifiers like the one in (1b) have been treated as adjectives (e.g. Maxwell 1976). In this paper I argue instead that all postnominal modifiers in Chuj are relative clauses. Specifically, *chakchak* in (1b) is a relative clause formed from a non-verbal predicate like the predicate *chakchak* in (2). I begin in section 2 with a look at differences between attributive adjectives and relative clauses in Ch’ol, a language from the Tseltalan branch of the Mayan family. Ch’ol is instructive due to the specific morphological marking found in relative clauses. In section 3 I turn to the proposal for Chuj, and then in section 4 I address and ultimately reject the possibility, raised in work in the Q’anjob’alan family, that adjective–noun sequences are always compounds.

2 ADJECTIVES AND RELATIVE CLAUSES IN CH’OL

Martínez Cruz (2007) presents a study of nominal modification in Ch’ol, identifying a class of items which he argues are true adjectives. Ch’ol adjectives, like other lexical items in Ch’ol, may form stative predicates, as in (3a). As noted above, these predicates, known in Mayanist literature as “non-verbal predicates” (NVPs), appear with no copula and obligatorily lack the TAM morphology found in eventive predicates. Adjectives in Ch’ol may also appear internally to DPs, as in (3b).

¹ Chuj is written in a Spanish-based practical orthography, and the Chuj in this paper comes from the San Mateo Ixtatán variant. Glosses and translations from other sources have been modified for consistency, and translations from Spanish are my own. Abbreviations in glosses follow Leipzig glossing conventions, except for the following Mayan- or Chuj-specific additions: A – “Set A” (ergative, possessive); B – “Set B” (absolutive); DTV – derived transitive verb; INTS – intensifier; IV – intransitive verb; PL.INDEF – indefinite plural; STAT – stative suffix; TV – transitive verb.

- (3) a. **Tyäkiñ** li wiñik.
 thin DET man
 ‘The man is thin.’
 b. Tyi k-il-ä [li **tyäkiñ** wiñik].
 PFV A1-see-DTV DET thin man
 ‘I saw the thin man.’ (adapted from Martínez Cruz 2007, 74)

It is thus the case that in Ch’ol (as well as in Chuj) when we encounter a word like *tyäkiñ* ‘thin’ it is not necessarily immediately clear whether it is functioning as a predicate (as in (3a)), or an attributive adjective (as in (3b)). This in turn creates problems for distinguishing between relative clauses formed from non-verbal stative predicates and true adjectival modification.

In Ch’ol, however, this problem does not arise; relative clauses (RCs) in Ch’ol are marked with a second-position clitic, =*bä*, a borrowing from neighboring Mixe-Zoquean languages (Martínez Cruz, 2007; Zavala Maldonado, 2007). When it comes to *verbal* (i.e. eventive, TAM-having) predicates, like the one in (4), =*bä* appears attached to the clause-initial TAM marker.

- (4) Tyi sajty-i li mastroj [_{RC} ta’=**bä** och-i i-koñtraj].
 PFV die-IV DET teacher PFV=REL enter-IV A3-enemy
 ‘The teacher whose enemy came died.’ (Martínez Cruz, 2007, 177)

In (4) it is immediately clear that the bracketed element is a relative clause because of the TAM and other inflectional morphology. But NVPs may also function as relative clauses in Ch’ol; in (5) there is no TAM or other inflectional morphology, but the clitic =*bä* is present.

- (5) Jiñ li ixim [_{RC} tyäkiñ=ix=**bä**] tyi xujl-i .
 FOC DET corn dry=already=REL PFV break-IV
 ‘The corn that is already dry broke.’ (Martínez Cruz, 2007, 177)

In the remainder of this section, we review other tests that distinguish RCs marked with =*bä* from true attributive adjectives in Ch’ol.

2.1 ORDER WITH RESPECT TO THE HEAD

Due to the =*bä* on Ch’ol RCs, we can observe that Ch’ol RCs may either precede or follow the head noun, as in (6) (prenominal RCs are unusual within Mayan but also found in Mixe-Zoquean). However, modifiers which lack the clitic =*bä* may only appear prenominally, as shown in (7).

- (6) Tyi k-mäñ-ä { chächäk=**bä** } bu’ul { chächäk=**bä** }.
 PFV A1-buy-TV red=REL bean red=REL
 ‘I bought beans that are red.’ (adapted from Vázquez Álvarez 2011, 128)
 (7) Tyi k-mäñ-ä { chächäk } bu’ul { *chächäk }.
 PFV A1-buy-TV red bean red
 ‘I bought red beans.’

2.2 CLASSES OF MODIFIERS

A variety of words which semantically express “property concepts” in Ch’ol may serve as NVPs. These include not just the class of elements that Martínez Cruz (2007) identifies as true adjectives, like *tyäkiñ* ‘thin’ in (3a) above, but words such as *wel* ‘flat’, a stative predicate derived from a positional root, in (8a), as well as *jubeñ* ‘cheap’ a stative derived from an intransitive root in (8b).

- (8) a. **Wel-el** li tye’.
flat-STAT DET wood
‘The wood is flat.’
b. **Jub-eñ** li wajtyañ.
descend-PRF DET *elote*
‘The *elote* is cheap.’

Any stative predicate in Ch’ol—including those formed from adjectives, as in (3a) above—may form a RC and then appear either pre- or post-nominally. However, the class of modifiers which may appear prenominally *without =bä* is much more restricted. Martínez Cruz (2007) proposes that the ability to directly modify a noun without the use of the relativizer *=bä* is specific to the class of true adjectives. Compare derived stative predicate *jubeñ* ‘cheap’ in the forms in (9). This word requires the relative marker in order to modify the head noun.

- (9) a. Tyi k-mäñ-ä li { jub-eñ=**bä** } wajtyañ { jub-eñ=**bä** }
PFV A1-buy-TV DET descend-PRF=REL *elote* descend-PRF=REL
‘I bought the *elote* that is cheap.’
b. Tyi k-mäñ-ä li { *jub-eñ } wajtyañ { *jub-eñ }
PFV A1-buy-TV DET descend-PRF *elote* descend-PERF

Semantically, the class of elements which pass this diagnostic test in Ch’ol—i.e. the ability to modify a head noun without *=bä*—belongs to the groups identified by Dixon (1982) and subsequent work as those words most commonly lexicalized as adjectives in languages of the world. The table in (10), adapted from Martínez Cruz 2007, sorts different property concepts into groups; groups at the top are cross-linguistically the most likely to lexicalize as adjectives. According to Martínez Cruz, Ch’ol lexicalizes words above the single-line as adjectives.

(10) SEMANTIC CLASSES OF ADJECTIVES

GROUP A	dimension age value color
GROUP B	physical characteristics human propensity speed
GROUP C	difficulty similarity ...

2.3 POSSESSION

In Ch'ol, “Set A” possessive morphology precedes both the adjective and noun in an ADJ–N sequence, as in (11). However, possessive morphology may *not* precede a prenominal modifier marked with =*bä*, as shown in (12a). Instead, possessive marking attaches to the head noun, as in (12b).

- (11) **k-chächäk bu'ul**
 A1-red bean
 ‘my red bean’ (Vázquez Álvarez, 2011, 129)
- (12) a. ***k-jub-eñ=bä** wajtyañ
 A1-descend-PRF=REL corn
 b. jub-eñ=bä **k-wajtyañ**
 descend-PRF=REL A1-corn
 ‘my corn that is cheap’ (Martínez Cruz, 2007, 84)

2.4 PLURAL MARKING

The suffix *-tyak* in Ch'ol has been called an “indefinite plural”. It may appear on NVPs, as in (13), as well as directly on a head noun, as in (14).²

- (13) Ch'ok-**tyak**=tyo la=k-bu'ul...
 soft-PL.INDEF=still PL=A1-bean
 ‘Our beans were still soft...’ (Martínez Cruz, 2007, 85)
- (14) Mi i-k'uk'ux-k'oty-el kixtyañuj-**tyak**.
 IPFV A3-really-arrive-IV person-PL.INDEF
 ‘Some of the people really arrived.’ (Vázquez Álvarez, 2011, 87)

When it comes to DPs with adjectival modifiers (i.e. modifiers without =*bä*), the suffix *-tyak* must appear on the head noun; it may not appear on the attributive adjective.

- (15) [_{FN} Li ch'ok(*-**tyak**) bu'ul-**tyak**] mi i-wiñ-k'ux wajali.
 DET soft-PL.INDEF bean-PL.INDEF IPFV A3-INTS-eat back.then
 ‘We ate a lot of soft beans back then.’

However, *-tyak* may appear on the modifier *if* the modifier also bares the relativizer =*bä*, as in (16). Given that predicates may appear with *-tyak*, as in (13) above, and that predicates may in turn form RCs provided they appear with =*bä*, this difference is expected.

- (16) [Li ch'ok-**tyak**=bä bu'ul] mi i-wiñ-k'ux wajali.
 DET soft-PL.INDEF=REL bean IPFV A3-INTS-eat back.then
 ‘We ate a lot of soft beans back then.’ (Martínez Cruz, 2007, 86)

² As described in Vázquez Álvarez 2011, §4.2.1, the plural marker *-tyak* has a variety of uses, including a partitive reading, or a “more or less” reading.

3 ADJECTIVES AND RELATIVE CLAUSES IN CHUJ

We now turn to Chuj. As with most other Mayan languages except Ch'ol, Chuj does not have special morphology for relative clauses, and all relative clauses must appear post-nominally. Placing the bracketed element in (17) prenominally results in ungrammaticality.

- (17) Ix-w-il winh unin [_{RC} ix-b'at-i].
 PFV-A1S-see CLF child PFV-go-IV
 'I saw the child that left.'

Recall from the initial examples in (1) above that certain modifiers, like *chakchak* 'red', may appear either pre- or post-nominally. Here I argue that all postnominal modifiers in Chuj are RCs, drawing on tests from Ch'ol in the previous section, as well as some new tests.

3.1 ORDERING AND CLASSES OF MODIFIERS

In Chuj, as in Ch'ol, the modifiers which may appear in prenominal position are more restricted than the modifiers which may appear postnominally. For example, while *chakchak* 'red' may appear either before or after the noun (see (1)), other modifiers may only follow the head noun. These include the stative stem *waynak* 'asleep', derived from the intransitive verb *way* 'sleep' as in (18), as well as stative stems derived from positional roots, like *k'ojan* 'seated' in (19).³ If prenominal position is reserved for true attributive adjectives as in Ch'ol, this pattern is expected.

- (18) Ix-w-il ix { ***way-nak** } nene { **way-nak** }.
 PFV-A1S-see CLF sleep-PRF baby sleep-PRF
 'I saw the baby that was asleep.'
- (19) Ix-cham nok' { ***k'oj-an em** } kaxlan { **k'oj-an em-i** }.
 PFV-A1S-buy CLF seated-STAT DIR chicken seated-STAT DIR-IV
 'I bought the chicken that was seated.'

Furthermore, while a full study of modifiers has not yet been done for Chuj, initial research suggests that the modifiers which may appear in preverbal (i.e. attributive adjective) position do belong to the classes of modifiers typologically expected to lexicalize as adjectives. These include words like *niwak* 'big', *ak* 'new', *wach* 'good', *saksak* 'white', *b'ak* 'thin'; compare the table in (10) above.

Also like in Ch'ol, the possessive marker in Chuj may precede prenominal adjectives, as in (20). Because Chuj never permits prenominal RCs, no direct comparison is possible, but we return to this fact in the discussion of compounds in section 4 below.

- (20) Ix-in-man ixim [hin-**k'iyik'** ixim].
 PFV-A1S-buy CLF A1S-black corn
 'I bought my black corn.'

³ NVPs like *k'ojan* derived from positional roots frequently require a directional (DIR), which appears with *-i* in phrase-final position; see Henderson et al. (this volume) for details.

3.2 PLURAL MARKING

Chuj has a morpheme cognate with Ch'ol's "indefinite plural", *-tak*. As with Ch'ol *-tyak*, Chuj *-tak* may appear on predicates, as in (21). When it comes to nominal modification, some prenominal modifiers may not appear with *-tak*, while some postnominal modifiers may. Again, this is expected if postnominal modifiers are adjectival predicates in a relative clause.⁴

- (21) B'ak-**tak** [heb' winh winak].
 thin-PL PL CLF man
 'The men are thin.'
- (22) a. *Ix-jaw heb' winh [b'ak-**tak** winak].
 PFV-arrive PL CLF thin-PL man
 b. Ix-jaw heb' winh [winak b'ak-**tak**].
 PFV-arrive PL CLF man thin-PL
 'The men who are thin arrived.'

3.3 INTERPRETATION

Paulina Elias (p.c.) discovered an interpretational difference between pre- and post-nominal modifiers in Chuj. As indicated below, prenominal adjectives in Chuj may be interpreted subjectively, while postnominal adjectives must receive an intersective interpretation.⁵

- (23) a. Ix-w-il k'en [hin-**ak'to** karro].
 PFV-A1S-see CLF A1S-new car
 'I saw my new car.' (it could be a used car, but it's new to me — *subjective reading*)
 b. Ix-w-il k'en [hin-karro **ak'to**].
 PFV-A1S-see CLF A1S-car new
 'I saw my car that is new.' (the car must be new — *intersective reading*)

The requirement that postnominal modifiers receive an intersective reading is compatible with the claim that these are simply relative clauses. Like other relative clauses—e.g. as in the English translation in (23b)—they must be interpreted intersectively.

3.4 INCORPORATION ANTIPASSIVE

Finally, Maxwell (1976) states that neither what she labels "postnominal adjectives" nor RCs may appear modifying the notional object in Chuj's "incorporation antipassive" construction. In an incorporation antipassive, shown in (24) and discussed in detail by Maxwell (1976) and Coon (to

⁴ In Chuj, the suffix *-tak* may also appear on some adjectives to indicate 'a little bit X', in which case it appears to be possible in either position. Further work is needed to understand the semantics and distribution of this suffix.

⁵ In these examples, *ak'to* appears to be morphologically complex, formed from the root *ak'* 'new' and *to* 'still'. Some modifiers seem to preferentially appear with either *to* (still) or *xo* (already); see also footnote 6 below. Here, for example, *to* is required in postnominal (i.e. predicate) position, but optional in prenominal (i.e. adjective) position. I leave this as a topic for future work.

appear), the verb is formally intransitive. An apparent object appears, but is highly restricted: it must be indefinite, nonspecific, may not appear with nominal classifiers, demonstratives, or a possessor; it may also not be a pronoun or a proper name. Nonetheless, in the San Mateo Ixtatán variant of Chuj discussed here, *prenominal* modifiers are possible, as in (25).

(24) Ix-ach-xik-w-i k'atzitz.
 PFV-B2S-chop-ANTIP-IV firewood
 'I chopped firewood.'

(25) Ix-in-pak-w-i [takinh awal].
 PFV-B1S-bend-ANTIP-IV dry cornstalk
 'I folded over dry cornstalks.' (Maxwell, 1976, 134)

In contrast, neither full relative clauses (i.e. formed from verbal TAM-having predicates), nor what Maxwell calls postnominal adjectives, may appear in this construction. If postnominal modifiers simply *are* relative clauses, as proposed here, this fact (which we return to in the next section) can receive a unified explanation.⁶

(26) *Ix-in-pak-w-i [awal takinh=xo].
 PFV-B1S-bend-ANTIP-IV cornstalk dry=already
 intended: 'I folded over dry cornstalks.' (Maxwell, 1976, 133)

4 ADJECTIVES OR COMPOUNDS?

Maxwell (1976) proposes that the difference between (25) and (26) is due to the fact that prenominal adjectives always form compounds with the head noun. More recently, Mateo-Toledo (2017) has advanced a similar proposal for ADJ–N sequences in closely-related Q'anjob'al. For both authors, this explains both (i) the fact that prenominal adjectives may appear in the incorporated antipassive (i.e. the sequence *takin h awal* in (25) is simply a noun, and thus incorporable), and (ii) that possessive marking may precede the ADJ–N sequence, as observed in (20) above.

Here I suggest instead that prenominal adjectives adjoin to the head noun in the syntax, and do not form lexical compounds. First, if all ADJ–N sequences were compounds, we might expect to find noncompositional meanings or restrictions on their combination. As seen above, including in incorporation antipassives like the one in (27), meanings are generally compositional.

(27) Ix-in-man-w-i niwak kaxlan.
 PFV-B1S-buy-ANTIP-IV big chicken
 'I bought big chickens.'

Similarly, ADJ–N sequences appear to be quite productive. As shown in (28), the adjective *sak-sak* 'white' may compositionally combine with a number of different head nouns, including in the

⁶ These examples are taken directly from Maxwell 1976. The clitic =*xo* 'already' is generally possible on postnominal modifiers (i.e. relative clauses, in this analysis) in constructions where postnominal modifiers are permitted; the form in (26) would remain ungrammatical if =*xo* were removed.

antipassive construction. I did not find a noun for which this combination was impossible.

- (28) Tz-in-chonh-w-i saksak { kaxlan, chej, xila, karro, xanhab', tut, hu'um ... }.
 IPFV-B 1S-sell-ANTIP-IV white chicken horse chair car shoe bean paper
 'I sell white { chicken(s), horse(s), chair(s), car(s), shoe(s), bean(s), paper }.'

In a similar vein, a head noun like *kaxlan* 'chicken' may be modified by a number of different semantically compatible prenominal adjectives, even in the antipassive construction as in (29).

- (29) Tz-in-chonh-w-i { saksak, chakchak, niwak, wach'al ... } kaxlan.
 IPFV-B 1S-sell-ANTIP-IV white, red, big, good chicken
 'I sell { white, red, big, good } chicken(s).'

While I suggest that not all ADJ–N sequences in the language are necessarily compounds, this is not to say that compounds do not exist in Chuj. Hopkins (1972) presents a study of compound place names in Chuj. These include compounds such as *Chanhil Ak'lik* ('fourth pasture') and *Jolom K'ixix* ('head cypress'). Many names for specific plant and animal species are also formed via compounding; see e.g. Hopkins 2012. These often *do* have noncompositional meanings and include plant species like *k'ix te* ('spiny wood'); *chab' tz'unun* ('honey hummingbird'); and *chikin choj* ('ear lion'), as well as animals such as *chej chan* ('deer snake'; a snake). Sequences of ADJ–N in Chuj do also appear in compounds, such as *yax lu'um* 'mountain (lit.: 'green land'), but I suggest that not all such sequences are compounds.

An alternative possibility is that prenominal adjectives in Chuj (e.g. in the forms in (28) and (29)) combine via the normal method of adjunction to the head noun. In a possessive construction, the possessor merges *above* the adjoined adjective, and the possessive prefix cliticizes to the left of the entire NP. With respect to the incorporation antipassive construction, in Coon (to appear), I argue that what is relevant in the construction is the semantic type of the incorporated element: it must be of type <e,t>. Again, this is compatible with the fact that adjectives could combine with a noun to form an incorporable type-<e,t> noun phrase, while still ruling out impossible elements like full classifier/demonstrative-having DPs, proper names, and pronouns.

Part of what makes ADJ–N sequences appear to be possible candidates for compounds may be the fact that the lexical class of adjectives is relatively small in Chuj, as in other Mayan languages (see e.g. England 2004 on Mam and Martínez Cruz 2007 on Ch'ol). From a typological perspective, however, these languages pattern as expected when it comes to which property concepts are lexicalized as adjectives, as discussed above.

5 SUMMARY AND FUTURE WORK

In this paper I proposed that postnominal modifiers in Chuj—including words that belong to the class of adjectives in the language—are in fact relative clauses formed from non-verbal predicates.

- (30) Ix-in-man nok' kaxlan [_{RC} chakchak].
 PFV-A 1S-buy CLF chicken red
 'I bought the chicken that is red.'

This proposal contrasts with previous work on the language, which describes forms like *chakchak* in (30) as postnominal adjectives. I showed that postnominal modifiers pattern in many ways with relative clauses in Ch’ol, discussed in section 2, which show clear relativization morphology and thus provide a useful point of comparison.

In contrast, I proposed that prenominal modifiers, as in (31), are true attributive adjectives.

- (31) Ix-in-man nok’ [_{ADJ} chakchak] kaxlan.
 PFV-A IS-buy CLF red chicken
 ‘I bought the red chicken.’

Again, this contrasts with some previous work on Q’anjob’alan languages which has analyzed ADJ–N sequences and instances of compounding. In section 4 I proposed that while ADJ–N combinations *may* form compounds in Chuj, not all such sequences need to be analyzed as such. Instead, I suggest that adjectives may adjoin to head nouns via syntactic adjunction, and that their appearance inside of possessive morphology and in incorporation antipassives may receive an alternative explanation.

A number of topics remain for future work. For one thing, it would be worthwhile to investigate whether there are prosodic differences between clear instances of compounding and the more compositional ADJ–N sequences described here. Second, Maxwell (1976) notes that some ADJ–N sequences are impossible in the incorporation antipassive construction. While I have not yet found such instances, a more systematic investigation is still needed.

REFERENCES

- Coon, J. (to appear). Building verbs in Chuj: Consequences for the nature of roots. *Journal of Linguistics*.
- Dixon, R. M. W. (1982). *Where have all the adjectives gone? And other essays in semantics and syntax*. Mouton de Gruyter.
- England, N. C. (2004). Adjectives in Mam. In Dixon, R. and Aikhenvald, A. Y., editors, *Adjective classes: A cross-linguistic typology*, pages 125–146. Oxford University Press, Oxford.
- Hopkins, N. A. (1972). Compound place names in Chuj and other Mayan languages. In Edmonson, M. S., editor, *Meaning in Mayan Languages: Ethnolinguistic Studies*, pages 165–182. Mouton de Gruyter, The Hague.
- Hopkins, N. A. (2012). *A Dictionary of the Chuj Mayan Language*. Jaguar Tours, Tallahassee, FL.
- Martínez Cruz, V. (2007). Los adjetivos y conceptos de propiedad en chol. Master’s thesis, CIESAS, México.
- Mateo-Toledo, B. E. (2017). Compuestos adjetivales y la ausencia de modificación adjetival en q’anjob’al. Paper presented at CILLA-VII, Austin, TX.
- Maxwell, J. M. (1976). Chuj intransitives: Or when can an intransitive verb take an object? *Journal of Mayan Linguistics*, 1:128–140.
- Vázquez Álvarez, J. J. (2011). *A Grammar of Chol, a Mayan Language*. PhD thesis, University of Texas Austin, Austin, TX.
- Zavala Maldonado, R. (2007). Las oraciones de relativo en lenguas cholanas, un calque zoqueano. Paper presented at *Conference on Indigenous Languages of Latin America-III*.