

# Null Complement Anaphora cannot involve transitivity alternations: A novel argument from Mayan<sup>1</sup>

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## 1 Introduction

We propose a novel morphosyntactic argument that supports one analysis of the silent element in the construction known as Null Complement Anaphora (henceforth NCA). Specifically, we argue on the basis of data from Chuj (Mayan) that the missing verbal complement in NCA is simplex and syntactically active, providing new support for the classic analysis of NCA as a "deep anaphor" (Hankamer and Sag 1976; see Depiante 2001, 2019; Moulton 2013; Tyler 2022). The data are difficult (if not impossible) to capture under analyses that propose instead that NCA involves a transitivity alternation (Shopen 1972, 1973; Williams 1977; Grimshaw 1979; Napoli 1983, 1985; Saeboe 1996; Xiang et al. 2019).

In a nutshell, we contend that Chuj's rich morphological marking, which encodes transitivity in multiple ways, reveals the *universal* syntax of NCA. This underlying syntax is not detectable in languages that have previously served as the empirical basis for arguing about the representation of NCA. We end by discussing (a) why the crosslinguistic implications of the Chuj facts should be interpreted in the strongest fashion possible—i.e., as reflecting the universal syntax of NCA—and (b) why a different conclusion that would take the syntax of NCA to be parameterized is not desirable. In other words, we argue that a What-You-See-Is-What-You-Get (henceforth WYSIWYG) approach cannot be maintained for NCA in other languages either. Methodologically, then, we

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provide an illustration of how a well-controlled set of facts from an understudied language can open the door for a reappraisal on the representation of one flavor of silent syntax.

Section 2 provides brief background on NCA. Section 3 provides information about Chuj, focusing on (in)transitivity marking. Section 4 discusses NCA in Chuj. We argue that it consistently involves transitive verbs, and thus that there is a complement of the relevant verbs that must be a simplex *pro-form*. Section 5 concludes with a discussion of crosslinguistic implications.

## 2 NCA and the argument in a nutshell

The phenomenon of interest here involves instances where a verb's non-nominal complement is missing on the surface. Consider how a speaker can utter an overt non-nominal complement of the verb *agree*, as in (1)b-c below. Importantly, the context suffices to license the speaker's utterance of the minimally different (1)a, where nothing follows *agree* overtly.

- (1) **Context:** A speaker is defending a controversial analysis of NCA.
- a. Do you agree? (=NCA)
  - b. Do you agree **with what they're saying**? (PP complement)
  - c. Do you agree **that this is a reasonable analysis**? (CP complement)

Constructions akin to (1)a will be our concern here. Discussions of this configuration date back to Freidin 1970 according to Napoli (1985). Its most relevant treatment for our purposes appears in Hankamer and Sag 1976, which analyzes the silence as a *null complement anaphor*. This account gave birth to the phenomenon's name in current parlance.

The proposal that there is a silent element in examples like (1)a was influential, yet it is only one of three possible analytical options, which are summarized below:<sup>2</sup>

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<sup>2</sup>Napoli 1983 refers to analysis (2)a as DEL (for Deletion), (2)b as BASE (for Base Generated Analysis), and (2)c as NCA.

(2) *Analytical options for the status of the silent element in NCA*

- a. NCA involves the ellipsis of an XP (see Napoli 1985 and Aelbrecht 2010)
- b. NCA involves a null *pro*-form (Depiante 2001, 2019; Cinque 2004; Moulton 2013; Tyler 2022; see Hankamer and Sag 1976).
- c. NCA involves nothing at all, i.e., (in)transitivity alternations / WYSIWYG (Shopen 1972, 1973; Williams 1977; Grimshaw 1979; Napoli 1983, 1985; Saeboe 1996; Xiang et al. 2019).

Option (2)a has largely been disregarded since at least Hankamer and Sag 1976 and Napoli 1983, 1985, though see van Craenenbroeck and Merchant (2013) and Depiante’s (2019) discussions of Aelbrecht 2010 for suggestions regarding this approach. We will provide evidence (in section 4) that this alternative does not hold water in Chuj.

Given the generalized rejection of an ellipsis analysis of NCA, the literature has sought to adjudicate between the two remaining options: whether NCA verbs have a simplex *pro*-form complement (2)b, or whether cases that appear to lack a complement in fact involve an intransitive verb (2)c. The resulting debates, however, have been based on languages where the predicate itself would not overtly mark transitivity alternations in the NCA configuration. We will argue that, in contrast to these languages, Chuj provides the right ingredients for a novel morphosyntactic adjudication between options (2)b-c, ultimately favoring (2)b.

Our arguments center on the appearance of (a) ergative agreement and (b) a final suffix that signals the transitive status of the NCA configuration:

- (3) **Context provided to speaker:** A politician is spurring a bunch of lies. In this case, can you ask your friend:

¿Tom tz-Ø-[a]-mek’-[a’]?  
YNQ IPFV-ABS3-ERG2S-agree-TV  
‘Do you agree?’

Let us now delve deeper into Chuj to contextualize the above data within our debate of interest.

### 3 (In)transitivity in Chuj

Chuj belongs to the Q'anjob'alan sub-branch of Mayan languages (Kaufman 1974, Law 2014). It is spoken by 70,000-80,000 speakers (Piedrasanta 2009; Buenrostro 2013), primarily in Huehuetenango (Guatemala) and Chiapas (Mexico), but also in diasporic communities across North America. There are two main dialects: San Mateo Ixtatán and San Sebastián Coatán (Maxwell 1981; García Pablo and Domingo Pascual 2007). Here, we discuss original data from the former dialect, collected using context-based and hypothesis-driven fieldwork methodology (Matthewson 2004; Davis et al. 2014; Bochnak and Matthewson 2020).<sup>3</sup>

Mayan languages are notoriously explicit about marking (in)transitivity status, often multiple times on the same verb (England 2001, Grinevald and Peake 2012; Coon 2016, Aissen et al. 2017, Coon 2019). Grinevald and Peake (2012: 21) summarize this idiosyncrasy of Mayan as follows:

[...] transitivity is heavily marked in the morphology of the verbal complex of Mayan languages. As expected, the choice of person markers and the presence of voice markers are the essential elements for the determination of the level of transitivity of the construction. However, in this family of languages, transitivity may be signaled by the choice of particular tense/aspect/mood and voice markers sensitive to the nature of the verb itself (as either transitive or intransitive, whether by root or derivation). And as if to top it off, the final thematic suffix, when it appears, adds to this rather typically Mayan insistence on indicating the level of transitivity of the whole verb complex.

Chuj is no exception to this defining property of the Mayan family; all of the transitivity indicators listed above apply. Transitive and intransitive verbal templates, as well as examples, are provided below for illustration. (Notice that third person absolutive is null, indicated as  $\emptyset$  throughout.)<sup>4</sup>

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<sup>3</sup>For additional information about Chuj, including grammars, see Hopkins 1967, 2021, Maxwell 1981, García Pablo and Domingo Pascual 2007, Buenrostro 2013, and Royer et al. 2022.

<sup>4</sup>Note that the morpheme set that is used to signal ergative agreement is also used to cross-reference possessors (Zavala Maldonado 2017). We depart here from the Mayanist convention of labelling ergative agreement markers as Set A and absolutive ones as Set B. We make this choice in order to highlight in a transparent manner the nature of each set of markers, which will be crucial for our analytical points.

(4) *Transitive verb template*

- a. ASP–ABS–**ERG**–ROOT–{voice suffixes}–**TV/DTV**  
b. Ix- ach- w- il -a'.  
PFV- ABS2S- ERG1S- see -TV  
'I saw you.'  
c. Ix- Ø- ey- anh -t -ej heb' anima'.  
PFV- ABS3- ERG2P- remedy -CAUS -DTV PL person  
'Y'all cured the people.'

(5) *Intransitive verb template*

- a. ASP–**ABS**–ROOT–{voice suffixes}–**IV/IRR**  
b. Ix- onh- b'at -i.  
PFV- ABS1P- go -IV  
'We went.'  
c. Ol- ex- anh -t -aj -ok.  
PROSP- ABS2P- remedy -CAUS -PASS -IV.FUT  
'Y'all will be cured.'

Three properties of the Chuj verbal complex serve to signal transitivity status, sometimes redundantly. First, transitive verbs are distinguished from intransitives in showing ergative agreement. Second, derivational voice morphology signals changes in valency, allowing verbs to be used in transitive or intransitive frames. Third, so called “status suffixes” (also sometimes called “thematic suffixes”) directly track the (resulting) transitivity status of the verbal complex. There are four status suffixes, each observed in (4)-(5), which are sensitive to aspect and/or the underlying root of the verbal stem (see Coon 2019):

(6) STATUS SUFFIXES IN CHUJ

Verb type	Root/aspect	Status suffix	Gloss
Transitive	Transitive root, all aspects	<i>-a', -o', -u'</i>	TV
	Non-transitive root, all aspects	<i>-ej</i>	DTV
Intransitive	Any root, non-future	<i>-i</i>	IV
	Any root, future	<i>-ok</i>	IV.FUT

Three of the four status suffixes (TV, IV, IV.FUT) are deleted in certain phonological environments,

namely (i) when they are not at the right edge of an intonational phrase (roughly corresponding to the right edge of a CP) or (ii) if their absence would result in an illicit consonant cluster (Royer 2022). For instance, note the absence of the status suffix when overt arguments follow the verb:

- (7) Ix-Ø-y-il [O nok' tz'i' ] [S ix unin ].  
 PFV-ABS3-ERG3-see CLF dog CLF.F girl  
 'The girl saw the dog.'

In sum, like other Mayan languages, Chuj signals transitivity alternations in a multiplicity of ways. This marking will serve in what follows as our window into the syntax of NCA.

#### 4 NCA in Chuj

A Chuj NCA verb different from the one in (3), this time involving the root *tak'* (translated as 'to accept'; see Hopkins 2012), is provided in (8):

- (8) Ix-Ø-a-tak'-a' [ to tz-ach-b'at k'atzitz ].  
 PFV-ABS3-ERG2S-accept-TV COMP IPFV-ABS2S-go log  
 'You accepted to go cut wood.'

Crucially, this verb does not take nominal complements, regardless of person specification:

- (9) a. \*Ix-Ø-in-tak' nok' tz'i'.  
 PFV-ABS3-ERG1S-accept CLF dog  
*Int:* 'I accepted the dog.' (i.e., 'I agreed to have the dog in my life.')
- b. \*Ix-ach-in-tak'-a'.  
 PFV-ABS2S-ERG1S-accept-TV  
*Int:* 'I accepted you.'

NCA uses of the verb *tak'* are provided in (10) and (11). Importantly, notice that NCA does not require an overt linguistic antecedent: the context in (11) suffices to allow the absence of an overt complement. This was also shown in (3) above.

- (10) Hayik' ix-Ø-w-al t'ay-ach to tz'-ach-b'at k'atzitz,  
 when PFV-ABS3-ERG1S-say PREP-ABS2S COMP IPFV-ABS2S-go woodlog,  
 ix-Ø-[a]-tak'-[a'].  
 PFV-ABS3-ERG2S-accept-TV  
 'When I asked you to go cut wood, you accepted.'
- (11) Context: Axul's boss is always giving her new orders, and she's been complaining to Malin about this situation. One day, Malin sees that the boss is asking Axul to do additional things again. Malin asks Axul:  
 ¿Tom ix-Ø-[a]-tak'-[a']?  
 YNQ PFV-ABS3-ERG2S-accept-TV  
 'Did you accept?'

Notice crucially that the verb in (10) and (11) bears (a) ergative agreement and (b) the transitive status suffix. Moreover, and just as crucially, using this verb (and other NCA verbs) in the language without ergative agreement and with an intransitive status suffix is judged unacceptable. For example, using an intransitive version of the verb *tak'* renders (10) and (11) ill-formed:

- (12) [...] \*ix-ach-tak'-i  
 PFV-ABS2S-accept-IV  
*Int:* '[...] you accepted'

In sum, NCA in Chuj is consistently expressed with verbs that exhibit the key transitive markers discussed in section 3. We thus conclude that the silent element in NCA cannot be due to the wholesale absence of a complement. This entails in turn that the WYSIWYG approach (2)c, which analyzes NCA verbs as intransitive, cannot be right for Chuj (more on this in Section 5).

Having ruled out the approach in (2)c, let us now return to the two remaining analytical possibilities of the three highlighted in section 2: either NCA involves ellipsis of a complex constituent (2)a or it involves a null *pro-form* (2)b. As already widely assumed in work on NCA, we argue that (2)a is not a viable option, leaving (2)b as the only viable analytical possibility.

Recall that NCA is possible under pragmatic control, as in (11). This is one ingredient that led previous work to propose that the silent element in NCA should not be treated as an elided constituent (Hankamer and Sag 1976). This is because ellipsis generally requires "syntactic control"; i.e., the presence of an overt linguistic antecedent. In sluicing, for example, the silent element must

exhibit some level of syntactic/semantic identity with this antecedent (defined differently in different works Merchant 2019; see Ranero 2021 for sluicing in Mayan). This is true cross-linguistically and the same result goes through in Chuj as well.

A second reason to believe that NCA does not involve ellipsis comes from sub-extraction facts. Consider how this argument goes in languages like English: unlike in VP-ellipsis, for example, a *wh*-word cannot be extracted from the silent element in NCA (Merchant 2013):

(13) *No sub-extraction in NCA (English)*

- a. Which films did she refuse to see and which films did she agree to <see \_ > ? (=sub-extraction out of ellipsis site)
- b. \*Which films did she refuse to see and which films did she agree? (=no sub-extraction out of NCA)

This argument also goes through for NCA in Chuj. An example like (13-b) above is replicated for Chuj in (14). A *wh*-word cannot be sub-extracted from the silence in NCA:

- (14) a.  $\zeta$ Mach pelikula maj- $\emptyset$ -s-tak'-laj                      b'at waj Xun to  
which movie NEG.PFV-ABS3-ERG3-accept-NEG DIR.go CLF Xun COMP  
tz- $\emptyset$ -y-il                      winh...  
IPFV-ABS3-ERG3-see he  
'Which movie did Xun not accept to see...'
- b. ... \*y mach pelikula ix- $\emptyset$ -s-tak'                      winh?  
and which movie PFV-ABS3-ERG3-accept he  
*Int:* '...and which movie did he accept?'

We can contrast the above with clear cases of ellipsis in Chuj, where sub-extraction from the silent element is, as expected, possible. The construction we will use as a point of comparison is sluicing, which is traditionally analyzed as *wh*-movement followed by deletion/non-insertion of complex syntax (Ross 1969, Merchant 2001). First, consider some baseline examples. In (15)a, an *in-situ* phrase involving a relational noun (RN) and its complement exhibits RN+complement



ordering.<sup>5</sup> Note, however, that Chuj exhibits ‘pied-piping with inversion’ (PPI): in cases of extraction, the complement and relational noun are inverted from their canonical order (complement+RN); see Aissen 1996, Ewing 2022. This is illustrated in (15)b with a *wh*-question:

- (15) a. Ix-Ø-s-pol                    anh seboya winhaj Pab’lu [ **yet’ k’en kuchilub’** ].  
 PFV-ABS3-ERG3S-cut CLF onion CLF Pab’lu with CLF knife  
 ‘Pab’lu cut the onion with the knife.’
- b. ¿ [ **Tas yet’** ] ix-Ø-s-pol                    anh seboya winhaj Pab’lu?  
 what with PFV-ABS3-ERG3S-cut CLF onion CLF Pab’lu  
 ‘With what did Pab’lu cut the onion?’

Regardless of the cause of PPI, it is a fact about Chuj’s grammar that such an ordering alternation occurs only in cases of extraction. Now, consider the case of sluicing in (16). What we see is that PPI occurs here as well: the *wh*-item and relational noun ‘with’ are inverted.

- (16) Ix-Ø-s-pol                    anh seboya waj Xun, pero machekel [ **tas yet’ok** ]<sub>1</sub> < ... \_\_\_<sub>1</sub> ... >.  
 PFV-ABS3-ERG3-cut CLF onion CLF Xun, but unknown what with  
 ‘Xun cut onions, but I don’t know what with.’

Given that PPI only ever occurs in cases of extraction, this entails that extraction out of an elided complement is possible in Chuj (see Ranero 2021 for an in-depth analysis of sluicing in Kaqchikel and similar considerations). Thus, we are led to the conclusion—building on Hankamer and Sag (1976) and others—that the unavailability of extraction out of the silence in Chuj NCA (14) means that it does not involve ellipsis. Having discarded two of the three analytical possibilities from section 2, we are left with only one analytical option, namely (2)b: NCA must involve a silent *pro-form*.

Next, we discuss how broadly we should interpret the Chuj facts as bearing on the crosslinguistic status of NCA. We argue that the Chuj facts should be taken to reflect the universal syntax of NCA.

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<sup>5</sup>Reational nouns are used as adpositional elements in Mayan (see e.g., Coon 2016, Aissen et al. 2017)

## 5 Crosslinguistic implications

This paper has argued in favor of one analysis of NCA through the lens of novel data from Chuj: the silent element is a null *pro-form*. As we argued, alternative analyses are not viable. First, NCA does not show the properties expected of ellipsis (Hankamer and Sag 1976). Second, NCA verbs display the morphological markers that are expected if they are transitive: (i) ergative agreement and (ii) a transitive status suffix. Thus, NCA cannot be the result of transitivity alternations (contra what is proposed or assumed for other languages; Shopen 1972, 1973; Grimshaw 1979; Napoli 1983, 1985; Xiang, Grove, and Merchant 2019; see Culicover and Jackendoff 2012).

At this juncture, the following question deserves to be raised in order to contextualise our findings: how broadly should we interpret the Chuj results regarding the representation of NCA? Our answer will speak to the validity of doing cross-linguistic comparison to make claims about universal or variable representations. As is often the case in this matter, there are two possibilities:

- (17) a. **Stronger conclusion:** NCA *universally* involves simplex syntax.  
b. **Weaker conclusion:** NCA *in Chuj* involves simplex syntax.

If (17)a is correct, it implies that Chuj is the right language to reveal the syntax of NCA across all languages. On the other hand, if (17)b is right, it implies that the syntax of NCA can vary—i.e., that it is parameterized. We argue in these closing paragraphs that the Chuj data suggest that the stronger conclusion in (17)a is on the right track.

In order to argue for the stronger conclusion, let us consider what a possible parameterization of the syntax of NCA could look like, or in other words, let us assess the prospects of (17)b. Assume that NCA is parameterized as follows: transitivity alternations exist for NCA verbs in other languages, but they do not exist in Chuj. That is, the locus of the parameter lies in the featural compatibility of NCA verbs with structure encoding (in)transitivity.<sup>6</sup> Since we are dealing with linguistic variation, we must first determine what data learners are exposed to as they build

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<sup>6</sup>We do not consider other conceivable alternatives for reasons of space, nor do we assess again here the option that NCA could involve ellipsis.

their grammar. One crucial difference among populations is that Chuj learners receive explicit input that the complement of NCA verbs is filled (2)b as opposed to involving nothing at all (2)c.

- (18) ¿Tom tz-Ø-a-mek' -a'?  
 YNQ IPFV-ABS3-ERG2S-agree-TV  
 'Do you agree?'

In other words, NCA verbs show the hallmarks of run-of-the-mill transitive verbs in Chuj, and it is reasonable to assume that learners pick up on this similarity. In contrast, no such evidence is available to acquirers of languages such as English or Italian, since there is no visible alternation regarding agreement or status suffixes in their input.

Let us assume, then, that learners posit that NCA involves simplex syntax if faced with positive evidence for this, whereas learners of languages where no such evidence is available conclude instead that the absence of signal entails the absence of structure (i.e., WYSIWYG). Put differently, the default for learners is to posit that NCA involves nothing at all:

- (19) *Describing cross-linguistic variation in the syntax of NCA*
- a. NCA = simplex syntax (2)b (Chuj)
  - b. NCA = nothing at all (2)c (English; default)

To formalize (19), let us propose as a first alternative that the parameter is encoded as follows:

- (20) *Parameterizing the syntax of NCA: version 1*
- a. NCA verbs are incompatible with valency alternations (Chuj)
  - b. NCA verbs are compatible with valency alternations (English; default)

The above would mean that certain roots in Chuj—i.e., those that participate in NCA—are incompatible with syntactic structure specifying intransitivity. We could encode this cross-linguistic variation featurally, in line with the general conjecture that parameters are related to featural specifications of lexical items (Borer 1984). What is crucial in evaluating this version of the parameter is the question of what would constitute independent evidence for its existence. One piece of support

would be if we found that NCA verbs in Chuj resisted transitivity/valency alternations.

This is not the case. The NCA verb ‘accept’ *can* be antipassivized (21) and *can* also appear in the Agent Focus construction, where an intransitive status suffix appears and ergative agreement does not (22) (Aissen 2017):

(21) Ix-Ø-tak’-w-i ix Malin.  
PFV-ABS3-accept-AP-IV CLF Malin  
‘Malin responded.’

(22) ǝMach ix-Ø-tak’-an-i to ol-s-xik’ k’atzitz?  
who PFV-ABS3-accept-AF-IV COMP PROSP-ERG3-chop log  
‘Who accepted to cut wood?’

This suggests that a general approach that would consider the syntax of NCA to vary in the manner encoded in (20) is on the wrong track.

If we wanted to maintain the weak interpretation of the Chuj results, however, one could respond that the parameter in (20) is not the account that needs to be evaluated. Perhaps the parameter lies instead in the availability of the null *pro-form* in a language’s lexicon: languages that lack the *pro-form* would need to resort to transitivity alternations. Consider this second version of a parameter:

(23) *Parameterizing the syntax of NCA: version 2*

- a. There is a null *pro-form* available in NCA constructions (Chuj).
- b. There is no null *pro-form* available in NCA constructions (English; default).

A non-trivial challenge for this version of the parameter is that we would need to additionally stipulate that languages that have a *pro-form* *must* use it in NCA configurations, as opposed to using an intransitive verb form instead. In other words, the question that arises is: why is (11) an impossible utterance in Chuj? Crucially as well, we would expect to find languages where NCA verbs *do* show the hallmarks of intransitivity, something that has not yet been shown (to our knowledge). The burden of proof for proponents of WYSIWYG approaches to NCA thus lies in showing—through the right kind of language—that intransitive NCA verbs can and do exist. Put

differently, a reliable way to adjudicate the syntax of NCA involves studying languages that are morphosyntactically explicit about transitivity alternations, as is the case with Mayan languages like Chuj.

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