

HEADLESS RELATIVE CLAUSES IN CH'OL

Juan Jesús Vázquez Álvarez and Jessica Coon

CIMSUR and McGill University

juanvazquezalvarez@gmail.com, jessica.coon@mcgill.ca

Abstract

This paper surveys headless relative clauses in Ch'ol, a Mayan language spoken in the state of Chiapas in southern Mexico. Ch'ol is rare among Mayan languages in possessing a special morpheme found with relativized nouns, the second position clitic =*bä*. While this morpheme is required for relativized argument nouns, we show below that it is not present in free relatives, suggesting a different derivation for this class of construction. We describe maximal (definite) and existential (indefinite) free relatives, which make use of a fronted *wh*-expression and lack the morpheme =*bä*. Maximal and existential free relatives in Ch'ol appear identical to one another in structure, and we propose following Caponigro 2003, 2004 that the different interpretations of these clauses are a result of the environments in which they appear. Finally, Ch'ol has two different types of constructions in which a D^0 element is followed by a headless relative: one corresponding to the =*bä* structure, and one corresponding to the free relative structure. We propose that the former can be analyzed as a regular headed relative with an unpronounced head, as argued for Yucatec by Gutiérrez-Bravo (2012). The latter, on the other hand, corresponds to a free relative structure with a D^0 element added.

1. Introduction and basic features of Ch'ol

This paper focuses on headless relative clauses (HRCs) in Ch'ol. Ch'ol (also known as Chol or Lakty'añ) is a Mayan language from the Tseltalan branch of the Mayan family, spoken by about 200,000 people in the state of Chiapas in southern Mexico. Several interesting properties make Ch'ol a fruitful place to investigate HRCs. Unlike many Mayan languages, Ch'ol has a special morpheme =*bä* which is required in argument relativization, as in (1), but is obligatorily absent in free relatives (FRs) introduced by a *wh*-expression, as in (2).¹

¹ Abbreviations in examples follow Leipzig glossing conventions, with the following Ch'ol or Mayan-specific additions: A – Set A (ergative, possessive); AFF – affirmative; B – Set B (absolutive); DEP – dependent clause marker; DIR – directional; DISC – discourse particle; DUB – dubitative; DTV – derived transitive status suffix; EP – epenthesis; EXT – existential; FIN – phrase final particle; HON – honorific; HRC – headless relative clause; FIN – phrase final clitic; FR – free relative; INCH – inchoative; INT – interrogative; IV – intransitive status suffix; NML – nominal; PREP – preposition; Q – interrogative morpheme; REP – reportative; RN – relational noun; SP – Spanish borrowing; STAT – stative suffix; TV – transitive status suffix. Examples taken from other sources have in some cases been modified for consistency in glossing and transcription. Translations from Spanish are our own.

- (1) Tyi k-mäñ-ä-ø li ixim [choñkol=**bä** i-choñ-ø — aj-Maria].
 PFV A1-buy-TV-B3 DET corn PROG=REL A3-sell-B3 CLF-Maria
 ‘I bought the corn that Maria is selling.’
- (2) Tyi k-mäñ-ä-ø [**chu** choñkol i-choñ-ø — aj-Maria].
 PFV A1-buy-TV-B3 WHAT PROG A3-sell-B3 CLF-Maria
 ‘I bought what Maria is selling.’

Wh-expressions in Ch’ol also appear with special morphology in order to form matrix interrogative clauses: interrogative wh-words appear with *-ki*, which is absent on the non-interrogative wh-words, making it easy to distinguish wh-expressions in these contexts. Compare *chu* ‘what’ in (2) above with the form *chuki* in the interrogative clause in (3).

- (3) **Chuki** choñkol i-choñ-ø — li x’ixik ?
 WHAT.Q PROG A3-sell-B3 DET woman
 ‘What is the woman selling?’

We begin in section 2 with a discussion of interrogative constructions and wh-expressions in Ch’ol, followed by headed relative clauses in section 3. These two sections lay the background for section 4 on HRCs.

Within the context of HRCs (like (2)) we propose that maximal and existential FRs in Ch’ol are internally structurally identical to one another, differing only in the contexts in which they appear (Caponigro 2003, 2004; Kotek & Erlewine 2016; AnderBois & Chan Dzul; Polian & Aissen; and Royer, this volume). We also discuss the possible existence of free-choice free relatives (FC-FRs) in Ch’ol, noting that the second-position clitic =*jach* ‘only’ may appear attached to the clause-initial wh-word and contribute an indifference reading, but does not contribute an ignorance reading.

We next turn to two constructions which at first glance appear to be candidates for “light-headed relatives”, that is, relative clauses which lack an overt head but are introduced by a D⁰ element (determiner, demonstrative, or quantified expression), exemplified in (4) and (5).

- (4) Tyi k-mäñ-ä-ø **li** Ø_N [choñkol=**bä** i-choñ-ø — aj-Maria].
 PFV A1-buy-TV-B3 DET PROG=REL A3-sell-B3 CLF-Maria
 ‘I bought the one(s) that Maria is selling.’
- (5) Tyi k-mäñ-ä-ø **li** [chu choñkol i-choñ-ø — aj-Maria].
 PFV A1-buy-TV-B3 DET WHAT PROG A3-sell-B3 CLF-Maria
 ‘I bought what Maria is selling.’

We propose below that the construction in (4) is structurally and semantically equivalent to a regular headed relative clause, but with a phonetically unpronounced head (see Gutiérrez-Bravo 2012 on Yucatec). On the other hand, we propose that the construction in (5) is equivalent to free relatives like (2) above, but with a D⁰ element added. Again, the appearance of the

relativizer =*bä* in headed relatives but not free relatives provides a useful diagnostic for teasing these constructions apart.

The remainder of this section provides basic information about Ch’ol relevant to understanding the constructions presented in later sections. Readers are also referred to Vázquez Álvarez 2011 (henceforth VA 2011) and Coon 2017 (along with works cited there) for more information on Ch’ol grammar. Unless otherwise attributed, data in this paper are from the Tila variant of Ch’ol and come from the first author’s judgments, from a corpus of recorded narratives (marked “txt” below), as well as from field notes collected by both authors.

1.1. Verb phrases and basic clause structure

Basic word order in Ch’ol is VOS for transitive clauses and VS for intransitives, shown in (6) and (7) (Coon 2010, VA 2011). VSO is also possible in certain contexts, not discussed here but see VA 2011 and Clemens & Coon 2018.

(6) Tyi i-jap-ä-ø kajpej jiñ wiñik.
 PFV A3-drink-TV-B3 coffee DET man
 ‘The man drank coffee.’

(7) Tyi wäy-i-ø jiñ ñeñe’.
 PFV sleep-IV-B3 DET baby
 ‘The baby slept.’

As in other Mayan languages—and importantly for the discussion below—arguments appear in preverbal position when they are topicalized, focused, relativized, or questioned (VA 2011, Clemens & Coon 2018). An example of a focus construction is shown in (8) and the pair in (9) illustrate a *wh*-interrogative: the question in (9a) is followed by a response with a focused subject (9b). Notice in this example that the verb does not require a special morphology in order to focus a transitive subject, as in some other Mayan languages (see e.g. Francisco Pascual 2007 for Q’anjob’al and Aissen 2017 on Mayan Agent Focus more generally). Further examples of interrogatives and relativization will be provided in the sections below.

(8) **Jiñ aj-Wañ** tyi i-koty-ä-ø x’ixik.
 FOC CLF-Juan PFV A3-help-DTV-B3 woman
 ‘It was Juan who helped the woman.’ (VA 2011, 325)

(9) a. **Majchki** tyi i-chok-o-y-ety ma che’jiñ?
 WHO PFV A3-send-TV-EP-B2 DIR.go then
 ‘Who sent you then?’ (txt)

b. **K-mamaj** tyi i-poj-chok-o-y-oñ ma.
 A1-mama PFV A3-HON-send-TV-EP-B1 DIR.go
 ‘It was my mother who sent me.’ (txt)

As in other Mayan languages, predicates may be divided into two main types: verbal predicates and non-verbal predicates. The former include examples (6)–(9) above; they typically denote events and require TAM (tense, aspect, mood) marking and “status suffixes”. A template for an extended Ch’ol verbal predicate is shown in (10).

(10) TAM– Set A – [Root – Voice – Status suffix] – Set B

Most eventive predicates in Ch’ol are headed by one of the aspect markers in (11). Note that perfective and imperfective forms have CV and CVC allomorphs; the latter are required when the aspect marker hosts clitics. The larger progressive form *choñkol* (*woli* or *wol* in the Tumbalá variant) does not have an allomorph.

(11) Ch’ol aspect markers

	clitic form	full form
perfective	<i>tyi</i>	<i>ta’, tsa’</i>
imperfective	<i>mi</i>	<i>mu’, muk’</i>
progressive	<i>choñkol</i>	

The initial aspect marker is followed by the verb stem. The stem consists of the root, possibly voice morphology, and one of a series of status suffixes, shown in (12). As in other Mayan languages, status suffixes covary with transitivity, aspect, and clause type.

(12) Ch’ol status suffixes

	perfective	non-perfective / embedded
intransitive (IV)	<i>-i</i>	<i>-el</i>
root transitive (TV)	<i>-V</i>	<i>(-e’)</i>
derived transitive (DTV)	<i>-V</i>	<i>-Vñ</i>

In the perfective aspect, intransitives appear with *-i*, while transitives are divided into “root transitives” and “derived transitives” (see VA 2011, Coon 2017 for more discussion and examples). The former appear with a harmonic vowel, while the derived transitive status suffix is not harmonic. Imperfective and progressive aspects appear with the suffixes in the right-side column in (12); the same morphemes are found on verb stems in non-finite embedded forms. Coon (2010, 2013) argues that non-perfective aspects are nominalized embedded forms, and that these are nominal suffixes. This issue is not directly relevant to the discussion below and we gloss all of the stem suffixes in (12) as -IV, -TV, and -DTV for simplicity below.

As in other Mayan languages, nominal arguments are not marked for morphological case. Instead, core arguments are cross-referenced on the head (i.e. verb or possessed noun) via two series of morphemes: “Set A” (ergative/possessive) and “Set B” (absolutive). In Ch’ol, Set A morphemes are prefixal, while Set B appear stem-finally. In addition to differences in stem suffixes in (12), verbs in the perfective aspect pattern distinctly from the non-perfective and embedded verb forms in their alignment: an ergative alignment pattern is found in the perfective aspect, while a split or “extended ergative” pattern in which intransitive subjects appear with Set A marking is found in non-perfective and embedded forms (VA 2011, Coon 2010, 2013).

Set A and Set B person markers are shown in the table in (13). Note that the Set A markers have pre-consonantal and pre-vocalic allomorphs; 1st person Set A is realized as *j-* when preceding a velar consonant. As in other Mayan languages, 3rd person Set B has no overt marking and we parse out a null morpheme below for clarity. Note further that the morphemes in (13) are number-neutral. Additional plural markers are added to the stem to indicate plurality of one or both arguments. These are *-ob* for third person humans, *=la* for 1st person inclusive and 2nd person plural, and *=loñ* for 1st person exclusive.

(13) Ch'ol Set A and Set B morphemes

	Set A		Set B
	Pre-C	Pre-V	
1st person	<i>k- /j-</i>	<i>k-</i>	<i>-(y)oñ</i>
2nd person	<i>a-</i>	<i>aw-</i>	<i>-(y)ety</i>
3rd person	<i>i-</i>	<i>(i)y-</i>	\emptyset

Examples of transitive and intransitive perfective forms are shown in (14a) and (14b). Here the transitive subject is marked with a Set A prefix, while the transitive object and intransitive subject pattern alike in showing the null Set B marking expected for 3rd person absolutive arguments.

- (14) a. Tyi k-päk'-ä- \emptyset jam.
 PFV A1-plant-TV-B3 grass
 'I planted grass.' (txt)
- b. Pero jiñi wakax tax lajm-i- \emptyset .
 but DET cow PFV.already cease-IV-B3
 'But the cows already died.' (txt)

The imperfective forms in (15), in contrast, show a split: both transitive and intransitive subjects are marked with a prefix from the Set A series.

- (15) a. Mi k-päk'- \emptyset jam.
 IPFV A1-plant-B3 grass
 'I plant grass.' (txt)
- b. Muk'=äch k-uch'-el.
 IPFV=AFF A1-eat-IV
 'I indeed eat.' (txt)

In addition to the aspectual split, Ch'ol also has agentive and Split-S Alignment; see Gutiérrez Sánchez 2004, VA 2011, and Coon 2013 for more information.

Finally, non-verbal predicates like those in (16)–(17) generally denote states and do not appear with TAM marking or status suffixes. Any lexical item in the language can function as a non-verbal predicate; note that there is no overt copula.

- (16) Ñox-oñ=ix.
old-B1=already
'I am old already.'
- (17) Wiñik-ety
man-B2
'You are a man.'

1.2. Noun phrases

A simplified template for an extended Ch'ol nominal projection is provided in (18); see Martínez Cruz 2007, VA 2011, and Coon 2017 for more details.

- (18) [Determiner – Numeral+CLF – Modifier – Noun – Relative clause]

Examples of noun phrases are given in (19)–(20) in brackets.

- (19) Tyi k-mäñ-ä-ø [ili cha'-p'ej kolem alaxax].
PFV A1-buy-TV-B3 DEM two-CLF big orange
'I bought these two big oranges.' (Coon 2017, 664)
- (20) Añ-ø [juñ-tyikil yumäl mu'=bä i-säkl-añ-ø juñ-tyikil x'ixik].
EXT-B3 one-CLF chief IPFV=REL A3-search-DTV-B3 one-CLF woman
'There is a king who is searching for a woman.' (VA 2011, 407)

We use “determiner” in the template in (18) as a cover term for both articles and demonstratives, listed in the table in (21). There is some dialect variation between Tila and Tumbalá variants, not discussed in detail here, but see VA 2011.

- (21) Ch'ol determiners

<i>li</i>	article
<i>ili</i>	'this'
<i>jiñ(i)</i>	'that (near to addressee)'
<i>ixä</i>	'that (far from speaker and addressee)'
<i>ibi</i>	'that (audible)'

Importantly for the discussion of maximal and existential free relatives in section 4 below, Ch'ol is a language in which bare NPs frequently serve as arguments, in the absence of any of the determiners in (21). While the addition of an element from the table in (21) ensures that the

following NP has a definite interpretation, definite interpretations may also arise in the absence of any overt determiner (see also Little & Vázquez Martínez 2018). The examples in (22) show that bare nouns are possible even when they are understood to be unique, as in the sun or the *xñek*—a singular creature who eats people’s tongues.

- (22) a. Tax lok’-i-ø k’iñ.
 PFV.already exit-IV-B3 sun
 ‘The sun already came up.’
 b. Tyi i-bä’ty-isä-y-oñ xñek.
 PFV A3-fear-CAUS-EP-B1 *xñek*
 ‘The *xñek* scared me.’

Similarly, determiners do not appear to be strictly necessary in anaphoric contexts. The sentence in (23a) comes from a story in which a dog is following the tracks of a particular deer, but then loses its scent. Here the deer (*me’*) appears as a bare NP, though it has an antecedent in the text. A few lines later, we hear the sentence in (23b), in which the dog finds the deer.²

- (23) a. Ma’añ tyi i-ña’ty-ä-ø baki tyi majl-i-ø me’.
 NEG PFV A3-know-DTV-B3 WHERE PFV go-IV-B3 deer
 ‘It (the dog) didn’t know where the deer went.’ (txt)
 b. Ta’ k’oty-i-ø i-tyaj-ø me’.
 PFV arrive-IV-B3 A3-find-B3 deer
 ‘It (the dog) arrived to find the deer.’ (txt)

In (24) we find an example of a bare NP as a transitive subject. Here the *peya’* bird has already been introduced in the narrative. The speaker is referring back to the bird, who is singing to show the direction of where Jesus is walking.

- (24) Choñ y-u’ty-añ-ø peya’, che’=bi.
 PROG A3-cry-DTV-B3 bird say=REP
 ‘The *peya’* (type of bird) was revealing him, they say. (txt)

Nonetheless, determiners are also possible on NPs in both unique and anaphoric contexts. We leave a full understanding of their distribution as a topic for future work.

Interestingly, the D⁰ elements in (21) are impossible as the complement to Ch’ol’s all-purpose preposition *tyi*, as shown in (25).

- (25) Añ-ø loñ=k-sa’ tyi (*li, *ili, *jiñ, *ixä) bolsaj.
 EXT-B3 PL.EXCL=A1-pozol PREP DET plastic.bag
 ‘Our pozol is in the plastic bag.’ (VA 2011, 171)

² Note that the distribution of bare nouns in anaphoric contexts also appears to be subject to some dialect variation. The first author, who is from Tila proper, would prefer the use of the determiner *li* in the sentences in (23), which come from a narrative recorded in Campanario.

Ch'ol indefinites may employ the numeral 'one' plus the appropriate numeral classifier, as in (26a) or may appear in their bare form, as in (26b). In the latter case they may generally be interpreted as either singular or plural indefinites (or definites, as noted above), depending on the context.

- (26) a. Tyi k-mãñ-ä-ø juñ-kojty chityam.
 PFV A1-buy-TV-B3 one-CLF pig
 'I bought a/one pig.'
- b. Tyi k-mãñ-ä-ø chityam.
 PFV A1-buy-TV-B3 pig
 'I bought a/some pig(s).'

Numerals in Ch'ol may follow the determiners, as in (19), and must appear with one of a series of numeral classifiers. In contrast to the determiners above, numerals are possible as complements to the preposition *tyi*, as shown in (27). This contrast will be relevant below.

- (27) Añ-ø loñ=k-sa' tyi jum-p'ej bolsaj
 EXT-B3 PL.EXCL=A1-pozol PREP one-CLF plastic.bag
 'Our pozol is in a plastic bag.' (txt)

Both demonstratives, like *jiñ* in (28a), and numerals with their classifiers, like *cha'tyikil* in (28b) may appear in the absence of a head noun in a pronominal function. In contrast, the article *li* may not appear alone, as shown by the ungrammaticality of (29).

- (28) a. Ta'=ta' i-ñoj-tyaj-a-y-ø-ob jiñ.
 PFV=DISC A3-really-find-TV-EP-B3-PL DEM
 'They really found it (the saint of the church of Tila).' (txt)
- b. Ya' wa'-al-ø cha'-tyikil ix tyi karetera.
 there standing-STAT-B3 two-CLF there PREP highway
 'There are two (people) standing there in the road.' (txt)

- (29) *Tyi k-mãñ-ä-ø li.
 PFV A1-buy-TV-B3 DET
 intended: 'I bought it.'

Pre-nominal modifiers include both adjectives, like *kolem* 'big' in (19), as well as preverbal relative clauses, discussed in section 3. The head noun may also be followed by relative clauses, as shown in (20) above, and discussed further below.

Finally, possessors follow the possessum, and trigger Set A agreement on the head noun, as illustrated in (30).

- (30) ba' tsop-ol-ø y-otyoty xux
 WHERE hang-STAT-B3 A3-house wasp
 'where the wasp's house is hanging. (VA 2011, 257)

2. Interrogative clauses

The formation of interrogative clauses in Ch'ol will be relevant to the relative clause constructions described below. We discuss polar interrogative clauses briefly in section 2.1 and then turn to *wh*-interrogative constructions in section 2.2. Embedded interrogative clauses are described in section 2.3.

2.1. Polar interrogative clauses

A common way to form polar yes/no interrogative clauses in Ch'ol is via a change in intonation, described in VA 2011. Ch'ol also has an interrogative second-position clitic, =*ba*, which may appear in polar interrogatives, as shown in (31).

- (31) Mu'=ba i-tyemp-añ-ø-ob i-bäj li wakax y-ik'oty-ø li bajlum?
 IPFV=INT A3-meet-DTV-B3-PL A3-self DET cow A3-with-B3 DET jaguar
 'Do the cows and the jaguars meet?' (VA 2011, 287)

2.2. Wh-interrogative clauses

To form *wh*-interrogative clauses, Ch'ol employs one of a set of *wh*-expressions, shown in Table 1. Most *wh*-expressions in Ch'ol (in the left column) appear with the morpheme *ki* (as in the right column, glossed 'Q') in matrix interrogative clauses; this morpheme is optional for *wh*-expressions corresponding to 'how' and 'how many'. The apparent exception is the word for 'why' (*chukoch*, or sometimes *chokoch*), though we speculate that this form may be morphologically complex in origin, containing a reduced form of *chuki* 'what.Q', perhaps with the verb *och* 'enter'. Note also that 'which' *bakibä* appears to be formed from *baki* 'where' together with the relativizing morpheme =*bä*, discussed in section 3 below. The *wh*-quantifier *jay-* 'how many' obligatorily appears with a numeral classifier, also required on numerals (VA 2011; Bale & Coon 2014).

Table 1
List of *wh*-expressions in Ch'ol

	wh-expression	wh-expression in interrogative construction
WHO	<i>majch</i>	<i>majchki ~ maxki</i>
WHAT	<i>chu</i>	<i>chuki</i>
WHEN	<i>jalaj</i>	<i>jalajki</i>
WHERE	<i>ba'</i>	<i>baki</i>
HOW	<i>bajche'</i>	<i>bajche'(ki)</i>
WHY	<i>chukoch ~ chokoch</i>	<i>chukoch ~ chokoch</i>
WHICH	<i>ba'bä</i>	<i>bakibä</i>
HOW MANY	<i>jay-CLF</i>	<i>jay-CLF-(ki)</i>

In previous work on Ch’ol (e.g. Coon 2010, VA 2011), wh-expressions are listed as the forms with *ki* in the right-hand column, and though the formal similarity is apparent, to our knowledge no decomposition has been explicitly proposed. Here we suggest that the morpheme *ki* is not in fact part of the wh-expression, but rather occupies the interrogative C⁰ head.

To form a wh-interrogative, wh-words obligatorily appear fronted to a preverbal position (recall from section 1 that basic word order in Ch’ol is verb initial). Two examples are shown in (32)–(33).

(32) **Chuki** mi i-ch’äm-ø-ob tyälel?
 WHAT.Q IPFV A3-bring-B3-PL DIR.come
 ‘What do they bring?’ (txt)

(33) **Maxki** tyi i-päs-b-e-y-ety?
 WHO.Q PFV A3-show-APPL-DTV-EP-B2
 ‘Who showed it to you?’ (txt)

As noted above, we gloss the morpheme *ki* found on wh-words in matrix wh-interrogatives as ‘Q’; it is absent from the wh-expressions used to form free relatives described below. From a typological perspective, it would be surprising to find interrogative wh-words to be more morphologically complex than the wh-forms used in wh-indefinites (though the reverse pattern is well attested; see Haspelmath 1997). Note, however, that the morpheme *ki* is also found as a second-position clitic on the antecedents of some conditionals, as shown in (34).

(34) K’ixiñ-ø=**ki** ma’añ mi a-pejk-añ-ø!
 drunk-B3=COND NEG IPFV A2-talk.to-DTV-B3
 ‘If he is drunk, don’t talk to him!’

Forms like (34) suggest an analysis in which =*ki* is generated in the C⁰ head of matrix wh-interrogatives, and cliticizes to the wh-word which has fronted to Spec,CP. Under this analysis, the wh-expression is the simple form on the left column of Table 1, and we expect *ki* to be generated only in matrix wh-interrogatives. In some cases, however, these forms may be in the process of grammaticalizing into a single morpheme, seen for example in the alternation between *majchki* and the contracted form *maxki*; this will be discussed further in section 2.3.

As the forms above illustrate, Ch’ol exhibits obligatory wh-movement in interrogatives, also shown by the declarative~interrogative pair in (35a) and (35b) below. Leaving the wh-word in situ in postverbal position results in ungrammaticality, as in (35c). Note that (35c) is not possible in Ch’ol even as an echo question. Omitting *ki* from the wh-expression is also ungrammatical, as shown by (35d).

(35) a. Tyi jul-i-ø **x’ixik**.
 PFV arrive-IV-B3 woman
 ‘The woman arrived (here).’
 b. **Maxki** tyi jul-i-ø?
 WHO.Q PFV arrive-IV-B3
 ‘Who arrived (here)?’

- c.*Tyi jul-i- \emptyset **maxki**?
 PFV arrive-IV-B3 WHO.Q
 intended: ‘Who arrived (here)?’
- d.***Majch** tyi jul-i- \emptyset ?
 WHO PFV arrive-IV-B3
 intended: ‘Who arrived (here)?’

Multiple wh-interrogatives are not possible in Ch’ol, regardless of whether the second wh-word moves or remains in situ, and regardless of whether it appears with or without *ki*, as illustrated by the ungrammatical sentence in (36). The intended meaning would instead be expressed in more than one sentence.

- (36) * Maxki {chu(ki)} tyi i-mãñ-ä- \emptyset {chu(ki)}?
 WHO.Q WHAT.Q PFV A3-buy-TV-B3 WHAT.Q
 intended: ‘Who bought what?’

In addition to the wh-words seen above, wh-phrases may consist of larger pied-piped phrases, in which case the wh-word always appears inverted at the left edge of the moved constituent, as shown in the examples below. The wh-form *bakibä* ‘which’ may appear followed by a nominal domain, but always appears to the left as shown in (37). Compare also the relational noun with its post-nominal complement in (38b) with the inverted interrogative wh-form in (38a), as well as the post-nominal possessor in (39b) with the prenominal interrogative possessor in (39a). See also Coon 2009 and VA 2011 for more on pied-piping with inversion in Ch’ol.

- (37) **Bakibä** ts’ak tyi a-mãñ-ä- \emptyset ?
 WHICH.Q medicine PFV A2-buy-TV-B3
 ‘Which medicine did you buy?’
- (38) a. [**Maxki** aw-ik’oty- \emptyset] cha’-tsajñ-ety?
 WHO.Q A2-RN.with-B3 again-PFV.go-B2
 ‘Who did you go back with again?’ (txt)
- b. [K-ik’oty- \emptyset **k-uskuñ**].
 A1-RN.with-B3 A1-older.brother
 ‘With my older brother.’ (txt)
- (39) a. [**Maxki** i-chich] tyi majl-i- \emptyset ?
 WHO.Q A3-older.sister PFV go-IV-B3
 ‘Whose older sister left?’
- b. [I-chich **aj-Maria**] tyi majl-i- \emptyset .
 A3-older.sister CLF-Maria PFV go-IV-B3.
 ‘It was Maria’s older sister who left.’

2.3. Embedded interrogative clauses

Embedded interrogative clauses are identical to matrix interrogatives, with the general exception of the distribution of the morpheme *ki*, as shown by the examples of embedded polar and wh-interrogatives in (40) and (41), respectively. The embedded polar interrogative in (40b)

follows the complementizer *mi* ‘if’. As described in more detail in VA 2011, finite embedded clauses like the ones in (40b) and (41b) appear with the full range of TAM marking, may be negated independently, and appear with second-position clitics. Also as in matrix interrogative clauses, the *wh*-words in embedded clauses like (41b) must appear at the left edge of the embedded clause.

- (40) a. Tax lok’-i-∅.
 PFV.already leave-IV-B3
 ‘He left already.’
 b. Mach k-ña’tya-∅ mi [tax lok’-i-∅].
 NEG A1-know-B3 if PFV.already leave-IV-B3
 ‘I don’t know if he left already.’
- (41) a. Chuki tyi i-mäñ-ä-∅?
 WHAT PFV A3-buy-TV-B3
 ‘What did she buy?’
 b. Tyi j-k’ajty-i-be-∅ [chu(%ki) tyi i-mäñ-ä-∅].
 PFV A1-ask-DTV-APPL-B3 WHAT(Q) PFV A3-buy-TV-B3
 ‘I asked what she bought.’

Interestingly, there appears to be some variation in whether or not we find the interrogative morpheme *ki* on the embedded *wh*-word, as shown in (41b) above. The first author finds embedded *wh*-interrogatives preferable without *ki*, though we have found naturally occurring examples of embedded interrogatives both with and without *ki* and some speakers accept both forms. We suggest that this variation is compatible with our note above that *ki* appears to be in the process of grammaticalizing with the *wh*-expression into a single morpheme in some forms. We propose that for speakers who permit embedded *ki* forms, it may no longer be analyzed as a separate clitic (i.e. generated in matrix interrogative C⁰, as proposed above). This is corroborated by the first author’s judgments of a contrast in acceptability between *maxki* (more grammaticalized) and *majchki* in (42) below.

- (42) a. ? K-ujil-∅ [**maxki** tyi k’oty-i-∅].
 A1-know-B3 WHO.Q PFV arrive-IV-B3
 ‘I know who arrived.’
 b. ?? K-ujil-∅ [**majchki** tyi k’oty-i-∅].
 A1-know-B3 WHO PFV arrive-IV-B3
 ‘I know who arrived.’

3. Headed relative clauses in Ch’ol

Before turning to HRCs clauses in section 4, we first examine headed relative clauses. Relative clauses in Ch’ol are always externally-headed, and Ch’ol has two strategies for these: (i) pronominal relatives and (ii) gap relatives with =*bä*. The former strategy is used for locative and temporal relative clauses. Relative clauses modifying locations and times are introduced with the locative pronoun *ba* ‘where’ and the temporal pronoun *jalaj* ‘when’, respectively (see Table 1 above). Relative pronouns corresponding to ‘which’ and ‘how many’ may also introduce relative clauses. In contrast, plain relativized nominal arguments (not modified by

‘which’ or ‘how many’), are not introduced with a relative pronoun and instead make use of a special second position clitic =*bä* (Martínez Cruz 2007, VA 2011). Table 2 summarizes the distribution of wh-words which introduce relative clauses in Ch’ol.

Table 2
Distribution of wh-words in headed relative clauses in Ch’ol

WHO	* <i>majch</i>
WHAT	* <i>chu</i>
WHEN	✓ <i>jalaj</i>
WHERE	✓ <i>ba’</i>
HOW	* <i>bajche’</i>
WHY	* <i>chukoch</i>
WHICH	✓ <i>ba’bä</i>
HOW MANY	✓ <i>jay-CLF</i>

Headed relatives do not appear to be introduceable by *bajche’* ‘how’ or *chukoch* ‘why’, but crucially note that there are no lexical Ch’ol items corresponding to ‘manner’ or ‘reason’ to serve as overt heads.³ We discuss the relative pronoun strategy in section 3.1 and the =*bä* strategy in section 3.2.

3.1. Headed relative clauses with wh-words

Locations in Ch’ol are typically introduced by the all-purpose preposition *tyi*, and these must make use of the locative pronoun *ba’* in order to relativize. An example of a locative relative is shown in (43a). The relative clause (in brackets) must follow the relativized noun (underlined). Compare the locative relative in (43a) with the sentence with a *tyi*-locative in (43b).

- (43) a. Tyi pul-i-ø klesia [ba’ tyi och-i-y-oñ tyi ch’ujel].
 PFV burn-IV-B3 church WHERE PFV enter-IV-EP-B1 PREP mass
 ‘The church where I went to mass burned down.’ (Martínez Cruz 2007, 41)
- b. Tyi och-i-y-oñ tyi ch’ujel tyi klesia.
 PFV enter-IV-EP-B1 PREP mass PREP church
 ‘I went to mass in the church.’

³ Evidence for this can be found in the speech of some speakers (perhaps generally younger), who do permit relative clauses introduced by *bajche’* with a borrowed head noun, as in (i); other speakers, including the first author, find this ungrammatical.

- (i) %Ma’añ mi k-mul-añ-ø li forma bajche’ mi aw-äl-ø.
 NEG IPFV A1-like-DTV-B3 DET way(SP) HOW IPFV A2-say-B3
 ‘I don’t like the way you talk.’

The ungrammatical example in (44) illustrates that the locative relative must follow the head noun.

- (44) * Tyi pul-i-ø [ba' tyi och-i-y-oñ tyi ch'ujel] klesia.
 PFV burn-IV-B3 WHERE PFV enter-IV-EP-B1 PREP mass church
 intended: 'The church where I went to mass burned down.'

Temporal relatives may be introduced by *jalaj* 'when', as shown in (45); here again the relative clause obligatorily follows the head noun.

- (45) Mi k-chajp-añ-ø-la li semana [jalaj mi la-k-mel-ø la-k-otyoty].
 IPFV A1-plan-DTV-B3-PL DET week WHEN IPFV PL-A1-make-B3 PL-A1-house
 'We plan the week when we will build our house.'

Finally, the wh-words which combine with nominal domains—*ba'bä* 'which' and *jay-CLF* 'how many'—also appear as relative pronouns, as shown in (46) and (47) below. While (47) is judged grammatical, this construction appears to be infrequent and was not found in texts.

- (46) Tyi k-yajk-ä-b-ety li alaxax [ba'bä tyi a-mañ-ä-ø].
 PFV A1-choose-DTV-APPL-B2 DET orange WHICH PFV A2-buy-TV-B3
 'I chose the oranges which you bought.'

- (47) Tyi k'oty-i-y-ø-ob li xe'tyel-ob [jay-tyikil tyi k-päy-ä-y-ø-ob].
 PFV arrive-IV-EP-B3-PL DET authority-PL how.many-CLF PFV A1-call-TV-EP-B3-PL
 'The number of authorities that I called arrived.'

In contrast, relative clauses may not be introduced by *chu* 'what' or *majch* 'who'. These instead make use of a gap strategy plus the morpheme =*bä*, as we will see in the following section.

3.2. Headed relative clauses with =*bä*

Ch'ol is comparable to other Mayan languages in using relative pronouns for only a subset of relative clauses, and a gap strategy with no relative pronoun for others (e.g. Gutiérrez-Bravo 2012 on Yucatec Mayan, Polian 2013 on Tzeltal). However, Ch'ol is unique in that gapped relative clauses also obligatorily appear with the second position clitic =*bä*. The use of an overt relativizing morpheme within Mayan is found only in Ch'ol and Chontal (Osorio May 2016), and argued to be a borrowing from neighboring Mixe-Zoquean languages (Zavala 2007).

In (48a) and (49a) we see examples of relativization of an intransitive subject and transitive object, respectively. In both cases, the relative clause follows the relativized noun and we represent the position corresponding to the relativized head noun with a gap. As can be seen from comparison with the corresponding sentences in (48b) and (49b), the only other change to the clause is the addition of the second-position clitic =*bä*, which in these cases appears on the clause-initial aspect marker inside the relative clause.

- (48) a. Tyi j-kääñ-ä-ø wiñik [ta'=bä tyäl-i-ø —].
 PFV A1-know-TV-B3 man PFV=REL come-IV-B3
 'I met the man who arrived.' (Martínez Cruz 2007, 187)
- b. Ta' tyäl-i-ø wiñik.
 PFV come-IV-B3 man
 'A man arrived.'
- (49) a. Tyi k-määñ-ä-ø ixim [choñkol=bä i-choñ-ø — li x'ixik].
 PFV A1-buy-TV-B3 corn PROG=REL A3-sell-B3 DET woman
 'I bought the corn that the woman is selling.' (VA 2011, 174)
- b. Choñkol i-choñ-ø ixim li x'ixik.
 PROG A3-sell-B3 corn DET woman
 'The woman is selling corn.'

The wh-expressions *majch* 'who' (for humans) and *chu* 'what' (for all non-human entities) from Table 1 above may not be used as relative pronouns. This is true regardless of whether and where =*bä* is present, as shown by the ungrammatical forms in (50) and (51).

- (50) * Tyi j-kääñ-ä-ø wiñik **majch**(=bä) ta'(=bä) tyäl-i-ø.
 PFV A1-know-TV-B3 man WHO=REL PFV=REL come-IV-B3
 intended: 'I met the man who arrived.'
- (51) * Tyi k-määñ-ä-ø ixim **chu**(=bä) choñkol(=bä) i-choñ-ø li x'ixik .
 PFV A1-buy-TV-B3 corn what=REL PROG=REL A3-sell-B3 DET woman
 intended: 'I bought the corn that the woman is selling.'

As discussed in more detail in Martínez Cruz 2007 and VA 2011, nominals corresponding to all core arguments function may be relativized using the =*bä* strategy. These include not only intransitive subjects and transitive objects as in (48a) and (49a) above, but also transitive subjects (52a), subjects of non-verbal predicates (52b), primary and secondary objects, as well as possessors and complements of relational nouns (52c). See the works cited above for more examples.

- (52) a. Añ-ø juñ-tyikil yumäl [mu'=bä i-säkl-añ-ø juñ-tyikil x'ixik —].
 EXT-B3 one-CLF king IPFV=REL A3-search-DTV-B3 one-CLF woman
 'There is a king who is looking for a woman.' (VA 2011, 407)
- b. Mi k-säkl-añ-ø lum [tyäk'-ø=bä —].
 IPFV A1-search-DTV-B3 earth sticky-B3=REL
 'I search the earth that is sticky.' (VA 2011, 407)
- c. Tyojp'-em-ø li p'ejty [añ-ø=bä k'ajk tyi y-e'bal —].
 broken-PRF-B3 DET pot EXT-B3=REL fire PREP A3-underneath
 'The pot that has fire underneath it is broken.' (VA 2011, 409)

Note that because Ch'ol does not have a special construction for extracting transitive subjects (cf. Agent Focus in other Mayan languages, noted above), the example in (52a) with two 3rd person arguments is potentially ambiguous, and could also be interpreted as a relativized object

construction, meaning ‘There is a king who a woman is looking for.’ In practice, this can be disambiguated through the use of a passive (VA 2011), or perhaps prosodically.

The =*bä* examples shown thus far have all been examples in which the relative clause follows the head noun. However, as discussed in previous works (Martínez Cruz 2007, VA 2011), Ch’ol also permits prenominal relative clauses, as shown by the examples in (53)–(54). This is also a pattern shared by neighboring Mixe-Zoquean languages.

(53) [Joch-ol-ø=bä —] baso tyi j-k’ajty-i-be-ø.
 empty-STAT-B3=REL vaso PFV A1-ask-DTV-APPL-B3
 ‘I asked him for the glass that was empty.’ (txt)

(54) Wäch lok’-em-ø [mu’-ø=bä tyi toñel —] wiñik-ob.
 here.AFF exit-PRF-B3 IPFV-B3=REL PREP work man-PL
 ‘The men who worked came from here.’ (Martínez Cruz 2007, 207)

Nonetheless, the use of prenominal relative clauses appears to be more restricted than that of postnominal relative clauses. While it is not uncommon to find intransitive relative clauses preceding their head noun, as in (53) and (54) above, the prenominal transitives in (55) and (56) are judged ungrammatical. We suggest this may be due to processing difficulty, but we leave this as a topic for future work.

(55) * Tyi k-mäñ-ä-ø [choñkol=bä i-choñ-ø — li x’ixik] ixim.
 PFV A1-buy-TV-B3 PROG=REL A3-sell-B3 DET woman corn
 Intended: ‘I bought the corn that the woman is selling.’

(56) * Tyi jul-i-ø [ta’=bä i-koty-ä-y-ety —] x’ixik.
 PFV arrive-IV-B3 PFV=REL A3-help-DTV-EP-B2 woman
 Intended: ‘The woman who helped you arrived.’

4. Headless relative clauses in Ch’ol

This section discusses headless relatives (HRCs) in Ch’ol. We begin with a description of free relatives introduced by *wh*-words in section 4.1. In section 4.2 we turn to other HRC constructions, including two types of relative clauses which lack overt heads and are introduced by *D*⁰ elements. Recall from section 3 that Ch’ol has a special morpheme which appears in gapped relative clauses: the second-position clitic =*bä*. This contrasts with the free relatives discussed in section 4.1, which are introduced by a *wh*-word and may not appear with =*bä*. This will help us distinguish between different constructions below.

4.1. Free relatives

In this section we examine free relatives (FRs): HRCs introduced by a *wh*-word. Here we focus on FRs with no determiner, returning to the appearance of determiners in section 4.2 below.

In order to form FRs, Ch’ol employs the indefinite pronouns from Table 1 in section 1 above. Recall that in matrix interrogative clauses, these must appear with the morpheme *-ki*. In free relatives, on the other hand, *-ki* is necessarily absent.⁴ Aside from the presence/absence of

⁴ Just as with the embedded *wh*-interrogatives discussed in section 2.3, some speakers accept *ki* on the *wh*-element in free relatives, as in (57a), though again this appears to be dispreferred. We

Table 3
Distribution of wh-words in Max-FRs in Ch'ol

WHO	✓ <i>majch</i>
WHAT	✓ <i>chu</i>
WHEN	✓ <i>jalaj</i>
WHERE	✓ <i>ba'</i>
HOW	✓ <i>bajche'</i>
WHY	* <i>chukoch</i>
WHICH	✓ <i>ba'bä</i>
HOW MANY	✓ <i>jay-CLF</i>

In the sentences in (58)–(64), we provide examples of Max-FRs with each of the possible wh-words from Table 3. We have added head nouns in the English translations for clarity, but there are no nominal heads in the Ch'ol forms.

- (58) Li aj-Maria tyi y-äl'-e-ø [**majch** tyi bo'y-i-y-ø-ob].
 DET CLF-Maria PFV A3-scold-DTV-B3 WHO PFV tire-IV-EP-B3-PL
 'Maria scolded the ones who got tired.'
- (59) Mux=tyo i-xuty'-b-eñ-oñ ta' [**chu** mi i-mañ-ø-ob].
 IPFV.AFF=still A3-share-APPL-DTV-B1 DISC WHAT IPFV A3-buy-B3-PL
 'They share with me what they buy.'
 (txt)
- (60) Mi k-chojl-oñ-ø [**jalaj** mi a-chojl-oñ-ø a-cha'añ].
 IPFV A1-clear.land-DTV-B3 WHEN IPFV A2-clear.land-DTV-B3 A2-RN.with
 'I'll clear it (my field) when you clear yours.'⁵
- (61) Tsajñ-oñ [**ba'** ch'oy-ol-ety].
 PFV.go-B1 WHERE live-STAT-B2
 'I went to where you live.'
- (62) Mi k-mel-ø [**bajche'** mi a-mel-ø].
 IPFV A1-make-B3 HOW IPFV A2-make-B3
 'I do it how you do it.'

⁵ The use of *jalaj* 'when' in free relatives appears to be restricted with respect to TAM, perhaps due to competition with the temporal subordinator *che'ñak* 'when'. A sentence analogous to (60) but in the perfective aspect would require *che'ñak*; *jalaj* would be impossible.

(63) Tyi k-mäñ-ä-ø [**ba'bä** tyi a-k'ajty-i-b-oñ].
 PFV A1-buy-TV-B3 WHICH PFV A2-ask-DTV-APPL-B1
 'I bought the one you asked me for.'

(64) Tyi k-mäñ-ä-ø [**jay-p'ej** tyi i-choñ-b-oñ aj-Maria].
 IPFV A1-buy-TV-B3 how.many-CLF PFV A3-sell-APPL-B1 CLF-Maria
 'I bought the number of things Maria sold to me.'

The remaining *wh*-word, *chukoch*, at first glance appears to be able to head a free relative, as in (65). However, the sentence in (65) cannot be paraphrased as 'I bought it for the (same) reason (why) you bought it' (i.e. a free relative interpretation). Instead, *chukoch* in (65) introduces a reason clause: 'I bought it because you bought it.' Following cross-linguistic patterns and discussion in Caponigro 2003, we take *chukoch* in (65) to simply mean 'because'.

(65) Tyi k-mäñ-ä-ø [**chukoch** tyi a-mäñ-ä-ø].
 PFV A1-buy-TV-B3 because PFV A2-buy-TV-B3
 'I bought it because you bought it.'

Most of the examples in (58)–(64) involve Max-FRs in object position. Max-FRs can also appear in other positions, for example as a transitive subject in (66), intransitive subject (67), primary object (68), possessor (69), and secondary object in (64) above. In (66) and (69) we observe that free relatives trigger 3rd person agreement on the head (i.e. on the transitive verb in (66) and on the possessed noun in (69) via the Set A prefix *i-*); because 3rd person Set B is null this is not observed in the other examples.

(66) Mi i-tyaj-oñ-la [**chu** mi i-tyaj-oñ-la].
 IPFV A3-find-B1-PL WHAT IPFV A3-find-B1-PL
 'Anything can make us sick.' (lit: 'What gets us will get us.') (txt)

(67) Tyi päk'm-ä-ø [**chu** tyi a-mäñ-ä-ø].
 PFV spoil-INCH-B3 WHAT PFV A2-buy-TV-B3
 'What you bought spoiled.'

(68) Tyi k-äk'-e-ø waj [**majch** tyi k'oty-i-ø].
 PFV A1-give-DTV-B3 tortilla WHO PFV arrive-IV-B3
 'I gave tortillas to the ones who arrived.'

(69) Tyi yajl-i-ø i-chich [**majch** tyi jul-i-ø].
 PFV fall-IV-B3 A3-sister WHO PFV arrive-IV-B3
 'The sister of the one who arrived fell.'

Interestingly, Max-FRs may *not* appear as the complement to the preposition *tyi*, as shown by the ungrammaticality of the form in (70b). Recall from section 1.2 above that *tyi* may also not combine with full DPs, as in the example in (70a).⁶

- (70) a. Tyi bā'ty-isāñ-ty-i-y-oñ tyi (*li) chajk.
 PFV fear-CAUS-PASS-IV-EP-B1 PREP (DET) lightning
 'I was scared by the lightning.'
- b. * Tyi bā'ty-isāñ-ty-i-y-oñ tyi chu tyi i-sub-u-ø i-bäj.
 PFV fear-CAUS-PASS-IV-EP-B1 PREP WHAT PFV A3-speak-TV-B3 A3-self
 intended: 'I was scared by what made the noise.'

This is compatible with the possibility that free relatives involve a null D^0 head, discussed below. We suggest instead that Ch'ol's preposition *tyi* does not permit anything larger than NP as a complement, ruling out both DPs (70a) and free relatives which are at least as large as CP (70b).

Turning to their meanings, the bracketed free relative expressions above conform to the semantic expectations of Max-FRs: they are referential, maximal, and definite. As described in section 1.2, NPs with the determiner *li* or one of the set of demonstratives receive definite interpretations (VA 2011) (though D^0 elements are also not strictly necessary for definite interpretations in all contexts). As shown by the translations in the examples above, free relatives can be paraphrased with definite descriptions. Ch'ol Max-FRs like those in (58) and (59) above can also be paraphrased by replacing the Max-FR with a definite (*li*-having) DP, as shown by the forms in (71) and (72) below. For example, in a context in which Maria is overseeing a group of ten male workers and three of them become tired and stop working, both (58) and (71) result in a reading in which Maria scolded exactly those three men. Similarly, in a context in which a group of people has gone to buy a quantity of corn, the sentences in (59) and (72) both mean that the group is willing to share all of this corn.

- (71) Li aj-Maria tyi y-äl'-e-ø li wiñik-ob ta=bä bo'y-i-y-ø-ob.
 DET CLF-Maria PFV A3-scold-DTV-B3 DET man-PL PFV=REL tire-IV-EP-B3-PL
 'Maria scolded the men who got tired.'

- (72) Mu'=tyo i-xuty'-b-eñ-oñ li ixim mu'=bä i-mäñ-ø-ob.
 IPFV-still A3-share-APPL-DTV-B1 DET corn IPFV=REL A3-buy-B3-PL
 'They share with me the corn that they buy.'

In contrast, as described in section 1.2 above, NPs in Ch'ol with no overt determiner may receive an indefinite interpretation. Unlike the free relative and definite phrases in (58) and (70) above, the sentence with a bare NP in (73) could be used in the same context in which Maria is supervising a group of ten workers, three get tired and stop working, and she only scolds one or two of these workers.

⁶ Here we use examples with *tyi* introducing the oblique agent in passive constructions, since locatives would use the *ba'* construction with no preposition.

- (73) Li aj-Maria tyi y-äl'-e-ø **wiñik** ta=bä bo'y-i-y-ø-ob.
 DET CLF-Maria PFV A3-scold-DTV-B3 man PFV=REL tire-IV-EP-B3-PL
 'Maria scolded a man/some men who got tired.'

It is not clear that Ch'ol has English-style ellipsis, but we can nonetheless observe that FRs behave as definites with respect to semantically anaphoric predicates like 'did the same' in the following examples. In the sequence in (74) Maria must have spoken to the student introduced by the definite DP *li xk'eljuñ* 'the student' in the antecedent clause. In contrast, in (75) the antecedent clause has an indefinite nominal, and Maria may have spoken to a different student. When we turn to a Max-FR, as in (76), we find that it behaves identically to the definite DP in (74) with respect to coreference.

- (74) Tyi k-pejk-ä-ø **li xk'eljuñ**. Che' tyi i-mel-e-ø je'el aj-Maria.
 PFV A1-talk-DTV-B3 DET student. so PFV A3-do-TV-B3 also CLF-Maria
 'I talked to the student. Maria did the same.'
 ✓coreferential reading; *noncoreferential reading
- (75) Tyi k-pejk-ä-ø **juñ-tyikil xk'eljuñ**. Che' tyi i-mel-e-ø je'el aj-Maria.
 PFV A1-talk-DTV-B3 one-CLF student. so PFV A3-do-TV-B3 also CLF-Maria
 'I talked to a student. Maria did the same.'
 ✓coreferential reading; ✓noncoreferential reading
- (76) Tyi k-pejk-ä-ø **majch tyi jul-i-ø**. Che' tyi i-mel-e-ø je'el aj-Maria.
 PFV A1-talk-DTV-B3 WHO PFV arrive-IV-B3 so PFV A3-do-TV-B3 also CLF-Maria
 'I talked to the person who arrived. Maria did the same.'
 ✓coreferential reading; *noncoreferential reading

The same pattern is found with respect to coreference with preceding nominals. If we understand the sentences in (78) to be different possible continuations of the sentence in (77), we see that the definite *li chityam* 'the pig' in (78a) must be interpreted as coreferential with the antecedent pig in (77). In contrast, *juñkojty chityam* 'a pig' or 'one pig' in (78b) is possible under a noncoreferential reading, as expected from indefinites. Crucially, the Max-FR in (78c) again behaves identically to the definite DP in (78a) with respect to requiring coreference—here the speaker must have sold both the pig and the chicken from (77).

- (77) Tyi y-äk'-oñ juñ-kojty chityam yik'oty juñ-kojty muty...
 PFV A3-give-B1 one-CLF pig and one-CLF chicken
 'He gave me a pig and a chicken...'
- (78) a. ...jiñjach che' ora tyi k-choñ-o-ø **li chityam**.
 but then quickly PFV A1-sell-TV-B3 DET pig
 'But then I quickly sold the pig.'
 ✓coreferential reading; *noncoreferential reading

- b. ... *jiñjach che' ora tyi k-choñ-o-ø juñ-kojty chityam.*
 but then quickly PFV A1-sell-TV-B3 one-CLF pig
 'But then I sold quickly a pig.'
 ✓coreferential reading; ✓noncoreferential reading
- c. ... *jiñjach che' ora tyi k-choñ-o-ø chu tyi ak'-eñ-tyi-y-oñ.*
 but then quickly PFV A1-sell-TV-B3 WHAT PFV give-DTV-PASS-EP-B1
 'But then I quickly sold what was given to me.'
 ✓coreferential reading; *noncoreferential reading

As demonstrated by the fact that the speaker in (78c) must have sold both the pig and the chicken, Ch'ol Max-FRs must pick out all individuals in the context that satisfy the relevant description. The maximal nature of these FRs is further illustrated in (79), in which the addressee should point to all relevant people in the context who know how to make houses. If the addressee knows that three men in the group know how to make houses, but he only points to one of them, he is not following instructions.

- (79) Tyuch'-u [**majch** y-ujil-ø-ob mel otyoty]!
 point-IMP WHO A3-know-B3-PL make house
 'Point to the ones who know how to make houses!'

To summarize, Ch'ol Max-FRs appear identical in form to wh-interrogatives, minus the particle *ki*. They may appear with the same set of wh-expressions found in wh-words, and we have found no restrictions as to TAM, person marking, or any other possible difference. We take the absence of *ki* to reflect the fact that these do not involve a matrix interrogative C⁰ head (see section 2). Compare a proposed structure for a wh-interrogative in (80)—with a [+Q] C⁰ occupied by =*ki*—with the free relative in (81), which lacks the [+Q] morpheme.

- (80) [_{CP} **chu**_i [_C [+Q] =**ki** [_{TP} tyi a-mãñ-ã-ø —_i]]] ?
 WHAT =Q PFV A2-buy-TV-B3
 'What did you buy? (wh-interrogative CP)
- (81) [_{CP} **chu**_i [_C [_{TP} tyi a-mãñ-ã-ø —_i]]]
 WHAT PFV A2-buy-TV-B3 (free relative CP, step 1)

As seen above, Max-FRs have the distribution of DPs. They may appear in all argument positions and trigger 3rd person agreement on the relevant head. They are banned from the complement to the preposition *tyi*, which is compatible with the fact that *tyi* only ever appears to combine with bare NPs. We follow Caponigro (2003, 2004) and Kotek & Erlewine (2016) in taking the core clauses themselves to be CPs at their core. Because bare NPs may serve as arguments in Ch'ol, we suggest following Caponigro 2003 that Max-FRs undergo a covert type-shifting operation, which he represents as δ , converting them from a derived predicate of type $\langle e, t \rangle$ (i.e. the set of elements that you bought) into an element of type $\langle e \rangle$ (the maximal entity that you bought), allowing them to appear in argument position.

- (85) a. Añ-ø (*li) waj tyi mesa.
EXT-B3 DET tortilla PREP table
'There are tortillas on the table.' (existential)
- b. Añ-ø tyi mesa li waj.
EXT-B3 PREP table DET tortilla
'The tortillas are on the table.' (locative)
- c. Añ-ø cha'-k'ej k-waj.
EXT-B3 two-CLF A1-tortilla
'I have two tortillas.' (possessive)
- d. Ma'añ-ø k-waj.
NEG.EXT-B3 A1-tortilla
'I don't have tortillas.' (negated possessive)

Just as we would expect given that existential themes must be indefinite, putting a free relative in the place of the theme NP in an existential construction as in (86a) results in an Ex-FR, the focus of this section. Replacing the theme NP in a locative construction with a free relative results in a Max-FR, as shown in (86b).

- (86) a. Añ-ø [chu mi la-j-k'ux-ø] ya' tyi mesa.
EXT-B3 WHAT IPFV PL-A1-eat-B3 there PREP table
'There's something for us to eat there on the table.' (existential)
- b. Añ-ø tyi mesa [chu mi la-j-k'ux-ø]
EXT-B3 PREP table WHAT IPFV PL-A1-eat-B3
'What we eat is on the table.' (locative)

Every wh-word in Ch'ol can form an existential free relative, as shown in Table 4 and illustrated by the examples in (87)–(93) below. Note that Ch'ol does not have words corresponding to indefinite quantifiers like English 'something', 'nothing', 'someone', 'anyone', etc. Instead, we find the existential predicate combining with a free relative, and examples like this are thus frequent and relatively easy to find in texts.

Table 4
Distribution of wh-words in Ex-FRs in Ch'ol

WHO	✓ <i>majch</i>
WHAT	✓ <i>chu</i>
WHEN	✓ <i>jalaj</i>
WHERE	✓ <i>ba'</i>
HOW	✓ <i>bajche'</i>
WHY	✓ <i>chukoch</i>
WHICH	✓ <i>ba'bä</i>
HOW MANY	✓ <i>jay-CLF</i>

- (87) Añ-ø [**majch** ya'-añ-ø yubi].
 EXT-B3 WHO there-EXT-B3 maybe
 'Maybe there is someone there.' (txt)
- (88) Añ-ø [**chu** tyi i-jap-ä-ø].
 EXT-B3 WHAT PFV A3-drink-TV-B3
 'He drank something.' (txt)
- (89) Añ-ø [**jajaj** mi la-k-mel-ø la-k-otyoty].
 EXT-B3 WHEN IPFV PL-A1-make-B3 PL-A1-house
 'Someday we'll build our house'
- (90) Añ-ø [**ba'** tsajñ-oñ-loñ tyi puts'-el].
 EXT-B3 WHERE PFV.go-B1-PL.EXCL PREP hide-NML
 'There was somewhere for us to go to hide.' (txt)
- (91) Ma'añ-ø [**bajche'** i-cha'-a-y-ø-ob tyi combatir].
 NEG.EXT-B3 HOW A3-do-TV-EP-B3-PL PREP fight
 'There's no way to fight it.' (txt)
- (92) Añ-ø [**chukoch** mi i-juk'-ø i-machity].
 EXT-B3 WHY IPFV A3-sharpen-B3 A3-machete
 'There's some reason why he is sharpening his machete.'
- (93) Añ-ø [**ba'bä** tyi i-jap-ä-ø].
 EXT-B3 WHICH PFV A3-drink-TV-B3
 'He drank something.'
- (94) Añ-ø [**jaj-p'ej** k'iñ tyi ñäm-i-ø].
 EXT-B3 HOW.MANY-CLF day PFV pass-IV-B3
 'Some days have passed.'

In addition to the existential predicate *añ*, a set of dynamic verbs in Ch'ol may also combine with existential free relatives. Examples with *tyaj* 'find' and *säklañ* 'look for' are given in (95) and (96) below.

- (95) Tyi k-tyaj-a-ø [**majch** mi i-mel-ø k-otyoty].
 PFV A1-find-TV-B3 WHO IPFV A3-make-B3 A1-house
 'I found someone to build my house.'
- (96) Tyi k-säkl-ä-ø [**chu** mi j-k'ux-ø].
 PFV A1-look.for-DTV-B3 WHAT IPFV A1-eat-B3
 'I looked for something to eat.'

Other verbs which may select for existential free relatives include at least: *ak* ‘dar’, *yajkañ* ‘choose’, *ch’äm* (+DIR) ‘bring, take’, *chok* (+DIR) ‘send’, *māñ* ‘buy’, and *mel* ‘build’. As discussed by Grosu (2004), these verbs can all be described as coming into existence, into view, into availability, etc.

Unlike many languages for which Ex-FRs have been described (also called “modal existential constructions”), existential free relative constructions in Ch’ol are fully finite, may have an independent subject, are possible with the full range of TAM markers, do not appear with any special modal or irrealis marking, and do not receive a special modal interpretation. Following cross-linguistic work by Caponigro 2003, 2004, and by Kotek & Erlewine 2016 on the Mayan language Chuj, we conclude that Max- and Ex-FRs in Ch’ol are both formed from CPs with fronted wh-words, as shown in (97), repeated from (81) above.

- (97) [CP **chu**_i [C [TP tyi a-māñ-ä-ø —_i]]
 WHAT PFV A2-buy-TV-B3
 ‘what you bought’ (Ex-FR)

While Max-FRs undergo typeshifting, Ex-FRs remain of type <e,t> and are restricted in their distribution to the being complements of existential predicates.

4.1.3. Free choice free relative clauses in Ch’ol

In Ch’ol, the second-position clitic =*jach* ‘only’ may attach to the clause-initial wh-word internal to a FR, and initially appears to be a good candidate for a FC-FR morpheme. For example, in a context in which Maria is in a hurry to get her shopping done and simply buys the first things she sees, =*jach* may appear on the wh-word, as shown in (98). This conforms to the prediction that a free choice free relative should contribute a reading of *indifference*.

- (98) Tyi i-māñ-ä-ø [chu=**jach** tyi ñaxañ y-il-ä-ø].
 PFV A3-buy-TV-B3 WHAT=only PFV first A3-see-TV-B3
 ‘She bought whatever she saw first.’ (indifference)

However, =*jach* does *not* contribute an ignorance interpretation, as one might expect from a free-choice free relative (see e.g. Šimik to appear). In a context in which the speaker is sitting in a room adjacent to the kitchen and smells chilis, but does not know what Maria is cooking, he could not use =*jach* to express this, as shown by the ungrammaticality of (99).

- (99) * Añ y-ich-il [chu=**jach** mi i-ch’äx-ø aj-Maria].
 EXT A3-chili-NML WHAT-only IPFV A3-cook-B3 CLF-Maria
 Intended: ‘Whatever Maria is cooking has chilis’ (ignorance)

The grammatical way to express the intended meaning of (99) would be to simply use the Max-FR form, with no special free-choice morphology.

One possibility is that Ch’ol =*jach* is behaving more like English ‘just’ in the example in (98) above. Because it is a second-position clitic, and because wh-words appear initially internally to the FR, it necessarily appears attached to the wh-expression in the forms above. As shown in (100) and (101), =*jach* may appear attached to a variety of clause-initial elements, contributing a meaning equivalent to English ‘only’.

(100) Wä'=jach tyi i-päs-ä-ø i-bäj iwä'.
 here=only PFV A3-show-TV-B3 A3-REFL here
 'He only showed himself here.' (txt)

(101) Saj-chuty avioñ-tyak=jach mi i-jub-el.
 little-small airplane-PL=only IPFV A3-arrive-IV
 'Only small airplanes land.' (txt)

Indeed, when appearing inside a FR, =*jach* may be compatible with contexts which would use FC-FR and 'only' translations in English. For example, the sentence in (102) could be translated as either a FC-FR (Context A) or with 'only' (Context B). Nonetheless, the FC-FR interpretation seems to be the most natural for speakers consulted.

(102) Mi k-päy-ø te [majch=jach aw-om-ø].
 IPFV A1-call-B3 DIR WHO=only A2-want-B3
 'I'll bring whoever you want.' / 'I'll only bring who you want.'
Context A: I'm throwing a big party and need help inviting lots of people. I tell you this and you volunteer to help me by bringing friends: 'I'll bring whoever you want.'
Context B: You know I'm throwing a party, but I'm starting to worry that there won't be enough food for the people who may have already decided to come. I know you're planning to bring some friends, and I tell you about my worry. You reassure me that you don't need to bring everyone, by telling me: 'I'll bring only who you want.'

The clitic =*jach* may also appear in the higher clause, as shown in the sentence in (103), which is a minimal pair with (98) above. Here =*jach* has only the 'only' meaning, not the indifference meaning, as shown by the English translation.

(103) Tsa'=jach i-mäñ-ä-ø [chu tyi ñaxañ y-il-ä-ø].
 PFV=only A3-buy-TV-B3 WHAT PFV first A3-see-TV-B3
 'She only bought what she saw first.' (i.e. she didn't buy anything else)

Finally, a larger sequence =*ik(a)jach* may also appear on the initial wh-word internal to a wh-word, as shown in (104). The clitic =*ik* is Ch'ol's irrealis clitic (VA 2011); it is possible that the vowel *a* is inserted between =*ik* and =*jach* for phonological reasons, or it could perhaps be analyzed as a reduced form of the dubitative clitic =*ka*. This form forces an indifference reading (i.e. Context A from (102) above). An ignorance reading remains unavailable.

(104) Mi k-päy-ø te [majch=ik=a=jach aw-om-ø].
 IPFV A1-call-TV DIR WHO=IRR=?=only A2-want-B3
 'I'll bring whoever you want.'

Table 5 summarizes the distribution of =*jach* internally to FRs in Ch'ol. As shown here, =*jach* may appear on all wh-words except for *chukoch* 'why', mirroring the distribution of Max-FRs from Table 3 above.

Table 5
Distribution of wh-words with =*jach* in Ch'ol

WHO	✓ <i>majch=jach</i>
WHAT	✓ <i>chu=jach</i>
WHEN	✓ <i>jalaj=jach</i>
WHERE	✓ <i>ba'=jach</i>
HOW	✓ <i>bajche'=jach</i>
WHY	* <i>chukoch=jach</i>
WHICH	✓ <i>ba'=jach=bä</i>
HOW MANY	✓ <i>jay-CLF=jach</i>

Some additional examples illustrating =*jach*'s distribution are shown in (105)–(107) below. Here we provide the indifference translation, noting that the ‘only’ reading is possible as well depending on the context provided.

(105) Mi k-pul-ø [ba'=j**ach** mi a-sub-eñ-oñ].
 IPFV A1-burn-B3 WHERE=only IPFV A2-say-DTV-B1
 ‘I’ll burn wherever you tell me.’

(106) Mi j-kolty-añ-ety [jalaj=j**ach** aw-om-ø].
 IPFV A1-help-DTV-B2 WHEN=only A2-want-B3
 ‘I’ll help you whenever you want.’

(107) Mi k-mel-b-eñ-ety [bajche'=j**ach** aw-om-ø].
 IPFV A1-make-APPL-DTV-B2 HOW=only A2-want-B3
 ‘I’ll make it for you however you want.’

In summary, the second-position clitic =*jach* appears attached to most of the possible initial wh-words in Ch'ol FRs, where it may contribute an indifference reading (forced with =*ikajach*), in addition to its independent meaning of ‘only’. Given that it does not contribute an ignorance reading, and that it must attach to the wh-word due to the independent fact that it is a second-position clitic, we remain agnostic as to whether it should be considered a genuine FC-FR morpheme, or closer to English words like ‘just’. We set this question aside as a topic for future work; see Rawlins 2015 and Šimik to appear for relevant discussion.

4.1.4. Summary

Table 6 summarizes the distribution of wh-expressions in Ch'ol different types of free relatives, wh-interrogative clauses, and headed relative clauses in Ch'ol. The wh-expressions used in interrogative clauses match those found in free relatives, but with the addition of the morpheme *ki* (optional on *bajche'* and *jay-CLF* and impossible on *chukoch* which may nonetheless have

historically included this morpheme, as discussed above). Headed relative clauses formed from simple argument nominals do not make use of a relative pronoun; instead they use a gap construction with the second position clitic =*bä*, discussed in section 3.2 above. The forms *bajche'* and *chukoch* do not appear as pronouns in headed relative constructions, though this may be due to the absence of an appropriate lexical head, discussed in section 3.1 above.

Table 6
Distribution of wh-words across constructions in Ch'ol

	Wh-expressions	Headed RCs	Max-FRs	Ex-FRs	FC-FR
WHO	<i>majch</i>	* (=bä)	<i>majch</i>	<i>majch</i>	<i>majch=jach</i>
WHAT	<i>chu</i>	* (=bä)	<i>chu</i>	<i>chu</i>	<i>chu=jach</i>
WHEN	<i>jalaj</i>	<i>jalaj</i>	<i>jalaj</i>	<i>jalaj</i>	<i>jalaj=jach</i>
WHERE	<i>ba'</i>	<i>ba'</i>	<i>ba'</i>	<i>ba'</i>	<i>ba'=jach</i>
HOW	<i>bajche'</i>	* (no head)	<i>bajche'</i>	<i>bajche'</i>	<i>bajche'=jach</i>
WHY	<i>chukoch</i>	* (no head)	*	<i>chukoch</i>	*
WHICH	<i>ba'bä</i>	<i>ba'bä</i>	<i>ba'bä</i>	<i>ba'bä</i>	<i>ba'=jach=bä</i>
HOW MANY	<i>jay-CLF</i>	<i>jay-CLF</i>	<i>jay-CLF</i>	<i>jay-CLF</i>	<i>jay-CLF=jach</i>

4.2. Other headless relative clauses

In this section we turn to other headless and apparently-headless relative clauses in Ch'ol. These constructions can be superficially divided based on the presence or absence of (i) a D^0 element (i.e. determiner, demonstrative), and (ii) a wh-word, as summarized in Table 7. In section 4.1 above we already examined Ch'ol FRs introduced by wh-words, but which did not appear with a D^0 (row 1). In this section we demonstrate that there are basically two different types of constructions which may appear with no overt head, as indicated by the two different colors of shading in Table 7. On the one hand, we find HRCs which are introduced by a D^0 element and have a wh-word (row 2); we claim that these are structurally equivalent to the FRs from section 4.1 above, but with a D^0 added. On the other hand, we find apparently headless RCs which may (row 3) but need not (row 4) be introduced by a D^0 . These latter two require the presence of =*bä*, and we argue below that they are structurally equivalent to the *headed* relative clauses examined in section 3.2, but with an unpronounced nominal head (\emptyset_N); see Gutiérrez-Bravo 2012 on Yucatec Maya.

Table 7
Other headless relative clauses in Ch'ol

1.	-DET , +WH	HRCs section 4.1
2.	+DET , +WH	HRCs with a D^0 added
3.	+DET , -WH	Headed RCs with an unpronounced head
4.	-DET , -WH	Headed RCs with an unpronounced head

Because of Ch’ol’s distinct =*bä* strategy for forming headed relative clauses from simple argument nominals, we can see clearly that there are two different types of apparently “light-headed” constructions possible: one which corresponds to a headed relative clause, but with the head noun unpronounced (row 3, shown in (108)), and a second which corresponds to a free relative with the addition of a determiner, demonstrative, or quantified expression (row 2, shown in (109)).

(108) Tyi k-mãñ-ä-ø li Ø_N [_{RC} mu’=bä i-choñ-ø — li x’ixik].
 PFV A1-buy-TV-B3 DET IPFV=REL A3-sell-B3 DET woman
 ‘I bought the ones that the woman is selling.’ (~ row 3)

(109) Tyi k-mãñ-ä-ø li [_{MAX-FR} chu mi i-choñ-ø — li x’ixik].
 PFV A1-buy-TV-B3 DET WHAT IPFV A3-sell-B3 DET woman
 ‘I bought what the woman is selling.’ (~ row 2)

Given that overt D⁰ elements (described in section 1.2) are possible, but not required, for definite interpretations, we suggest that it is unsurprising that they may combine with an element which—according to our analysis in section 4 above—is already of type <e>.

A minimal pair illustrating Ch’ol’s two different types of headless constructions with D⁰s (+DET,–WH and +DET,+WH) is shown by the examples in (110) and (111). The sentence in (110) comes from a narrative in which a shaman was out working in his field when a man was bitten by a snake. Someone went out to find the shaman in his field to bring him to the injured man, but because the shaman’s house which held all of his curing supplies was far out of the way, he went directly to the bitten man’s house. The story-teller relates the sentences in (110) to explain that because the shaman had to go straight there, he didn’t bring the things he normally uses for curing snake bites—in this case the narrator lists explicitly *k’ujts* ‘tobacco’ and other items unknown to the narrator. In the second line in (110) we then find the determiner *li* followed directly by a =*bä* relative clause with no overt head, referring back anaphorically to the tobacco and other curing things.

(110) ‘He didn’t take his tobacco, um, and who knows what other things he might use...’

Ma’añ tyi i-ch’äm-ä-ø te li [mu’=bä i-k’añ-e’-ø=i].
 NEG PFV A3-bring-TV-B3 DIR.here DET IPFV=REL A3-use-DEP-B3=FIN
 ‘He didn’t bring the things that he uses.’ (txt)

A constructed minimal pair with *li* plus a free relative is shown in (111). Here we find a free relative with a wh-word, like the ones described in section 4.1, but introduced by the same determiner *li*.

(111) Ma’añ tyi i-ch’äm-ä-ø te li [chu mi i-k’añ-e’-ø=i].
 NEG PFV A3-bring-TV-B3 DIR.here DET WHAT IPFV A3-use-DEP-B3=FIN
 ‘He didn’t bring what he uses.’

Another pair is shown in (112) and (114). Here again the original textual example in (112) takes the form of a =*bä* relative but with no overt head. The sentence in (112) comes from a story

about *wäläk ok* ('twisted foot'), a supernatural entity with his feet on backwards who is known to bother people in the mountains. The narrator is describing the characteristics of the *wäläk ok* when the speaker in (112) interrupts to ask if people have really seen him: does he show himself to us?

- (112) Mu'=ba i-päs-ø i-bäj li [mu'=bä i-tyä'l-añ-oñ=la]?
 IPFV=INT A3-show-B3 A3-REFL DET IPFV=REL A3-bother-DTV-B1=PL
 'Does the one who bothers us show himself to us?' (txt)

Here it would be possible to insert an overt head, as shown in (113), and the sentence remains grammatical. This supports the claim that light-headed forms like (112) are simply headed relative clauses with unpronounced nominal heads (\emptyset_N).

- (113) Mu'=ba i-päs-ø i-bäj li wäläk ok [mu'=bä i-tyä'l-añ-oñ=la]?
 IPFV=INT A3-show-B3 A3-REFL DET twisted foot IPFV=REL A3-bother-DTV-B1=PL
 'Does the twisted-foot who bothers us show himself to us?'

In (114) below we show a constructed version with a free relative introduced by the wh-word *chu* 'what' and the determiner *li* (it would be inappropriate to use *majch*, the wh-expression for humans, for the supernatural *wäläk ok*). The meaning here changes: now rather than asking about the particular entity from the story, the question is broader. The free relative denotes *all* the things that bother us; if it were placed in the same narrative in place of (112), it would not be clear that the speaker is asking specifically about the *wäläk ok*.⁷

- (114) Mu'=ba i-päs-ø i-bäj li [chu mi i-tyä'l-añ-oñ=la]?
 IPFV=INT A3-show-B3 A3-REFL DET WHAT IPFV A3-bother-DTV-B1=PL
 'Do the ones that bother us show themselves to us?'

A third example is given in (115), but now the naturally-occurring example appears in the free relative form. Here the narrator is talking about a shaman who uses traditional medicinal plants to cure. She has been to a doctor for her ailment, but so far nothing has worked. She doesn't know the details, but her friends have told her that whatever the plants do, they do indeed cause the illness to go away.

- (115) Much=bi i-lajm-el li [chu mi i-ts'äk-añ-ø=i].
 IPFV.AFF=REP A3-cease-IV DET WHAT IPFV A3-cure-DTV-B3=FIN
 'What they (the plants) cures indeed goes away.' (txt)

In this context, the free relative again is used to pick out the totality of cured things. The speaker does not know all of the cures for the various illnesses, but she is asserting that they work. In

⁷ An anonymous reviewer asks whether there is an independent problem created by referring back to this supernatural creature with either the human (*majch*) or non-human (*chu*) wh-word in (114), since the *wäläk ok* occupies a place somewhere in between. However, in an imagined comparable scenario in which the bothering entity is not a *wäläk ok* but a human, the first author notes that it would be equally infelicitous to use a construction analogous to (114) with *majch*.

contrast, the constructed minimal pair in (116) would be better used to discuss specific already-mentioned illnesses and their cures.

- (116) Much=bi i-lajm-el li [mu'=bä i-ts'äk-añ-ø=i.]
 IPFV.AFF=REP A3-cease-IV DET IPFV=REL A3-cure-DTV-B3=FIN
 'The ones they (the plants) cure indeed go away.'

As foreshadowed above, we suggest two different derivations for these constructions. The =bä forms like (116) correspond to headed relatives in section 3 but with an unpronounced nominal head (\emptyset_N) in the position of the head, as shown in (117) (see row 3 from Table 6 above). The wh-forms like the one in (115) above correspond to FRs but with a D^0 added, as shown in (118) (see row 2 from Table 6). Recall that overt D^0 elements in Ch'ol are not required for definite interpretations. While further work is needed to understand the distribution of determiners and their relationship to definiteness, the fact that determiners are not required for definite interpretations makes it unsurprising that they may combine with an element which is proposed to already be definite, namely a Max-FR.

- (117) li \emptyset_N [_{RC} mu'=bä i-ts'äk-añ-ø]
 DET IPFV=REL A3-cure-DTV-B3
 'the ones they cure'

- (118) li [_{MAXFR} chu mi i-ts'äk-añ-ø]
 DET WHAT IPFV A3-cure-DTV-B3
 'what they cure'

The structure in (117) corresponds to Gutiérrez-Bravo's (2012) proposal for *all* headless relatives in Yucatec Maya. However, at least in Ch'ol this is clearly not the only structural option for headless relatives. Evidence for a distinction is indicated by (i) the ability of (117) (but not (118)) to appear with an overt nominal head, and (ii) by the obligatory appearance of the relative clause marker =bä on (117) (obligatory with headed relatives), and its corresponding ungrammaticality on FRs like (118). While further work is needed to understand the semantic and pragmatic differences between structures like (117) and (118), we assume that the unpronounced nominal head in the =bä constructions indicates that the element should be recoverable from the context. Indeed, in (110) above the narrator lists by name in the narrative the exact supplies used by the shaman; similarly, in (112) it is clear that the speaker is referring specifically to the *wäläk ok*. In contrast, in (115), the speaker is not sure exactly which diseases are cured with which remedies, but she is stating that whatever the plants do, they seem to work.

The full range of determiners from section 1.2 above may appear in both types of construction. This is notable, because recall that the determiner *li* may not stand alone as a pronoun, corroborating the proposal that it is not acting as a pronoun in these constructions, and that these constructions do not have a special distinct status in the grammar (compare Citko's (2004) "light-headed" relative clauses).

- (119) * Tyi i-mäñ-ä-ø li.
 PFV A3-buy-TV-B3 DET
 intended: 'He bought it.'

The above examples involve *li*, but the full range of demonstratives is possible as well. This is shown for [+DET, –WH] forms in (120) and (121), and in the constructed [+DET, +WH] form in (122).

(120) Jiñ=tyo jalbal **ixä** [mu'=bä j-käch-ø-la tyi la-k-ñäk'].
 FOC=still weaving DEM IPFV=REL A1-tie.around-B3-PL PREP PL-A1-stomach
 'It's still weaving that one which we tie around our stomachs.' (txt)

(121) Mux a-lok'-ø **ili** [tsa'=bä k-äk'-ety] wa'li.
 IPFV.already A2-take.out-B3 DEM PFV=REL A1-give-B2 now
 'You already take out this one which I give you.' (txt)

(122) Ma'añ tyi i-ch'am-ä-ø te **ixä** [chu mi i-k'añ-e'-ø].
 NEG PFV A3-bring-TV-B3 DIR.here DEM WHAT IPFV A3-use-DEP-B3
 'He didn't bring what he uses.'

Finally, in addition to the determiners and demonstratives which may be used to introduce HRCs, numerals (together with numeral classifiers) may also appear, as in (123) and (124) below. As above, the choice in whether to use the FR form in (123) or the =*bä* form in (124) appears to be governed by questions of context and anaphoricity. As expected under the proposal above that =*bä* forms are headless relatives with an unpronounced head, (124) is more natural in a context in which, for example, a group of workers has already been introduced into the discourse, where as (123) could be uttered out of the blue.

(123) Tyi k-tyaj-a-ø [cha'-tyikil **majch** mi i-mel-ø k-otyoty].
 PFV A1-find-TV-B3 two-CLF WHO IPFV A3-make-B3 A1-house
 'I found two (people) to build my house.'

(124) Tyi k-tyaj-a-ø [cha'-tyikil mu=**bä** i-mel-ø k-otyoty].
 PFV A1-find-TV-B3 two-CLF IPFV=REL A3-make-B3 A1-house
 'I found two (people) to build my house.'

The HRCs examined in this section may be either maximal or existential. When introduced by determiners and demonstratives—which always enforce a definite interpretation—they are maximal. With numerals, as in (123) and (124) above, they may be existential (here as complements to the predicate 'find'; see section 4.1.2 above for a list of predicates which combine with Ex-FRs). Determiners or demonstratives could be added preceding the numerals in (117)–(118) above (this is generally possible with numerals, as noted in section 1.2), resulting in a maximal interpretation. Examples of Max-FRs, of both [+DET, –WH] and [+DET, +WH] forms are provided in (125) and (126) below. The full range of determiners is again possible here.

(125) Tax k-choñ-o-ø (ili) [ux-p'ej ta'=bä aw-äk'-oñ].
 PFV.ALREADY A1-sell-TV-B3 DEM three-CLF PFV=REL A2-give-B1
 'I already sold (these) three (ones) that you gave me.'

- (126) Tyi k'am-ä-ø-y-ob (ixä) [ux-tyikil majch mi i-mel-ø-ob otyoty].
 PFV sick-INCH-B3-EP-PL DEM three-CLF WHO IPFV A3-make-B3-PL house
 'Those three (people) who will build houses got sick.'

Finally, as indicated in row 4 of Table 7 above, HRCs in Ch'ol may also appear with neither a D⁰ element nor a wh-word. These correspond in form to the =*bä* relative clauses discussed with a head in section 3, but without either a head or a determiner. Given that Ch'ol generally allows arguments to appear with no overt determiner, the presence of forms such as the ones in (127)–(129) is again unsurprising.

- (127) [Ta'=bä i-ch'äm-ä-ø ma], ta'=bi sajty-i-ø.
 PFV=REL A3-take-TV-B3 DIR.go PFV=REP die-IV-B3
 'They say that it was the one who took it who died.' (txt)

- (128) Añ=äch [mu'=bä i-mero cha'l-eñ-oñ-la tyi embidiar].
 EXT=AFF IPFV=REL A3-just do-DTV-B1-PL PREP envy
 'There is indeed someone who envies us.' (txt)

- (129) Ta'=bi weñ jul-i-y-ob-tyak tyi troñel [tyäl-em-ob=bä tyi yambä lum-tyak].
 PFV=REP many arrive-IV-EP-PL-PL PREP work come-PRF-PL=REL PREP other land-PL
 'It is said that those who come from other lands came to work.' (txt)

We propose that these are structurally equivalent to the headed relative clauses in section 3, but with an unpronounced nominal head and no D⁰ element.

5. Conclusions

This paper provided a survey of a variety of relative clause constructions in Ch'ol: headed relative clauses, and various types of HRCs. Ch'ol is an instructive language for comparing different types of constructions because of the special relativizing morpheme =*bä* employed in headed (including, we propose, headed by a null noun Ø_N) relative clauses. This same morpheme is obligatorily absent in FRs, confirming that these have different structures. This diagnostic proved useful in the examination of so-called “light-headed relative clauses” in section 4.2 which come in two types: one corresponding to the headed relative clauses with =*bä*, which we analyze as having a null pronominal head, and a second corresponding to the FRs from section 4.1, but with the addition of a D element.

Ch'ol is also interesting in its distribution of FRs. In section 4.1 we described Max- and Ex-FRs in Ch'ol, and proposed that these have the same underlying CP structure but differ in their distribution. Ex-FRs are derived-predicate CPs which are selected by an existential predicate. Max-FRs have the same internal structure, but following Caponigro 2003 they undergo type-shifting into an <e>-type entity, accounting for their wider distribution.

Acknowledgments

We are grateful to all of the organizers and participants of the *Headless Relative Clauses in Mesoamerican Languages* workshop series, and especially to Judith Aissen, Scott AnderBois, Ivano Caponigro, Gilles Polian, and Roberto Zavala for discussion of Ch'ol data, as well as two anonymous reviewers for helpful questions and suggestions.

References

- Aissen, Judith. 2017. 'Correlates of ergativity in Mayan.' In *The Oxford Handbook of Ergativity*, eds. Jessica Coon, Diane Massam, and Lisa deMena Travis. New York: Oxford University Press, 737–758.
- Bale, Alan and Jessica Coon. 2014. 'Classifiers are for numerals, not for nouns: Consequences for the mass-count distinction.' *Linguistic Inquiry*, 45, 4: 695–707.
- Caponigro, Ivano. 2003. Free not to ask: On the semantics of free relatives and wh-words crosslinguistically. Doctoral dissertation, University of California Los Angeles.
- Caponigro, Ivano. 2004. 'The semantic contribution of wh-words and type shifts: Evidence from free relatives crosslinguistically. In *Proceedings of SALT 14*, 38–55.
- Citko, Barbara. 2004. 'On headed, headless, and light-headed relatives.' *Natural Language and Linguistic Theory* 22:95-126.
- Clemens, Lauren and Jessica Coon. 2018. 'Deriving verb-initial word order in Mayan.' *Language*, 94, 2, 237–280.
- Coon, Jessica. 2009. Interrogative possessors and the problem with pied-piping in Chol. *Linguistic Inquiry*, 40, 1: 165–175.
- Coon, Jessica. 2010. *Complementation in Chol (Mayan): A Theory of Split Ergativity*. Doctoral Dissertation. Massachusetts Institute Technology.
- Coon, Jessica. 2013. *Aspects of split ergativity*. Oxford: Oxford University Press.
- Coon, Jessica. 2017. Ch'ol. In *The Mayan Languages*, eds. Judith Aissen, Nora England, and Roberto Zavala. New York: Routledge, 648–684.
- Francisco Pascual, Adan. 2007. *Transitividad y dependencia sintáctica y discursiva en Q'anjob'al*. M.A. Thesis. CIESAS, México.
- Grosu, Alexander. 2004. 'The syntax-semantics of modal existential wh constructions.' In *Balkan syntax and semantics*, ed. Olga Miseka Tomic. Amsterdam: John Benjamins, 419–439.

Gutiérrez-Bravo, Rodrigo. 2012. 'Relative clauses in Yucatec Maya: Light heads vs. null domain.' In *A typological overview of relative clauses in languages of the Americas*, eds. Bernard Comrie and Zarina Estrada. Amsterdam/Philadelphia: John Benjamins, 253–268.

Gutiérrez-Bravo, Rodrigo. 2015. *Las cláusulas relativas en maya yucateco*. México: COLMEX.

Gutiérrez Sánchez, Pedro. 2004. *Las Clases de Verbos Intransitivos y el Alineamiento Agentivo en el Chol de Tila, Chiapas*. M.A. Thesis. CIESAS, México.

Haspelmath, Martin. 1997. *Indefinite pronouns*. Oxford: Oxford University Press.

Kotek, Hadas and Michael Yoshitaka Erlewine. 2016. 'Non-interrogative *wh*-constructions in Chuj (Mayan).' In *Proceedings of the Workshop on the Structure and Constituency of the Languages of the Americas 21*, University of British Columbia Working Papers in Linguistics.

Little, Carol-Rose and Morelia Vázquez Martínez. 2018. 'La distribución e interpretación de sustantivos en el ch'ol: Un estudio práctico de corpus.' Paper presented at FAMLi V, Antigua, Guatemala.

Martínez Cruz, Victoriano. 2007. *Los adjetivos y los conceptos de propiedad en chol*. M.A. Thesis. CIESAS. México.

Osorio May, José del Carmen. 2016. 'Temas de la sintaxis del yokot'an "contal" de Tecoluta, Nacajuca, Tabasco.' Doctoral dissertation, CIESAS, Mexico.

Polian, Gilles. 2013. *Gramática del tsetal de Oxchuc*. CIESAS. México.

Rawlins, Kyle. 2015. 'Indifference and scalar inference in free relatives.' In *Epistemic indefinites: Exploring modality beyond the verbal domain*, eds. Luis Alonso-Ovalle and Paula Mendéndez-Benito. Oxford University Press, 267–288.

Šimik, Radek. to appear. 'Free relatives.' In *The Semantics Companion*, eds. Daniel Gutzmann, Lisa Matthewson, Cécile Meier, Hotze Rullmann, and Thomas Ede Zimmermann. Wiley–Blackwell.

Vázquez Álvarez, Juan Jesús. 2011. *A Grammar of Chol, a Mayan Language*. Doctoral Dissertation, University of Texas at Austin.

Zavala Maldonado, Roberto. 2007. Las oraciones de relativo en lenguas cholanas, un calque zoqueano. Paper presented at *Conference on Indigenous Languages of Latin America-III*. The University of Texas at Austin.