

Unifying definite and indefinite free relatives: Evidence from Mayan

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Many languages have *free (or headless) relatives*, with an initial *wh*-word:

(1) **English definite free relative:**

I'll buy [_{FR} **what** you're selling].

≈ I'll buy the thing(s) that you are selling.

Such free relatives have definite or universal interpretation (Jacobson, 1995, a.o.), are DPs, and islands for extraction. Call these *definite FRs*.

Definite and indefinite free relatives

Some languages also have *indefinite free relatives*: (Pesetsky, 1982; Izvorski, 1998; Grosu and Landman, 1998; Caponigro, 2003, 2004; Grosu, 2004; Šimík, 2011, a.o.)

(2) **Hebrew definite FR:**

Ahav-ti et [_{FR} ma she-kara-ti].
liked-1sg ACC what that-read-1sg
'I liked the thing I read.'

(3) **Hebrew indefinite FR:**

Yesh l-i [_{FR} ma li-kro].
EXIST to-1sg what INF-read
'I have something (available
for me) to read.'

- Compared to the definite FR (2), the indefinite FR (3) is nonfinite and disallows an independent subject.
- The indefinite FR has a modal flavor and has also been called *modal existential wh-constructions* (MECs).
- The indefinite FR is not an island for extraction.

Definite and indefinite free relatives

In many languages, these syntactic and semantic properties correlate:

- Definite \Leftrightarrow *structurally larger* (DP)
- Indefinite \Leftrightarrow *structurally smaller*

See Šimík (2011) for discussion of 16 languages (7 Balto-Slavic, 6 Romance, Greek, Hebrew, Hungarian).

Šimík (2011) concludes that **indefinite FRs are fundamentally different from definite FRs:**

(4) **Šimík's Conjecture:**

Indefinite FRs are all modal existential *wh*-constructions (MECs) of sub-CP size.

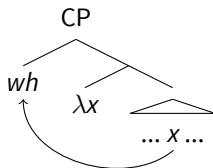
- a. Smaller structural size: explains nonfinite/subjunctive verb, no independent subject
- b. No DP layer: explains free extraction

Today: Chuj indefinite FRs

Today: Indefinite FRs that are more like definite FRs, in **Chuj** (Mayan; Guatemala).

- Chuj indefinite FRs are **the same size** as definite FRs, allowing subjects and all tense/aspects. They **lack modal semantics** of MECs.
- But they still have **limited distribution** and are **not islands** for extraction.

Definite and indefinite FRs share a common core syntax:



The CP is interpreted as a derived predicate of type $\langle e, t \rangle$ (Caponigro, 2003, 2004).

- Definite FRs: add a DP layer \Rightarrow type e or $\langle \langle e, t \rangle, t \rangle$ argument
- Indefinite FRs: certain verbs can take predicate CP complements

- §1 Background on Chuj
- §2 Free relatives in Chuj
- §3 Proposal
- §4 *Jun* free relatives
- §5 Conclusion

§1 Background on Chuj

- Declaratives
- Questions
- Headed relative clauses

§2 Free relatives in Chuj

§3 Proposal

§4 *Jun* free relatives

§5 Conclusion

Chuj is a verb-initial language.

(5) **Simple declarative sentences:**

a. Intransitive:

Ol-∅-wa ix.
PROSP-B3-eat CL.FEM

‘She will eat.’

b. Transitive:

Ix-∅-in-wa ixim wa’il.
PRFV-B3-A1s-eat CL.GRAIN tortilla

‘I ate the tortilla.’

(Verbs show ergative/absolutive agreement alignment: Set A = ergative,
Set B = absolutive.)

\bar{A} -movement: *wh*-questions

👉 \bar{A} -operators move to pre-verbal position.

(6) Simple *wh*-questions:

a. Intransitive subject:

Mach ix- \emptyset -ulek'-i?

who PRFV-B3-come-ITV

'Who came?'

b. Transitive object:

Tas ix- \emptyset -a-man-a'?

what PRFV-B3-A2s-buy-TV

'What did you buy?'

Verbs show a transitivity suffix when final in their phonological phrase.

(\bar{A} -movement of transitive subjects is marked on the verb with the)
(*Agent Focus* (AF) morpheme and loss of Set A agreement.)

\bar{A} -movement: headed relatives

Headed relative clauses in Chuj are gapped clauses preceded by the nominal head that they modify.

(7) **Headed relative clauses:**

- a. Ix unin [_{RC} (***mach**) ix- \emptyset -ulek'-i]
CL.FEM child who PRFV-B3-come-ITV
'the girl who came'
- b. Jun (ch'anh) libro [_{RC} (***tas**) ix- \emptyset -w-awtej]
one CL.BOOK book what PRFV-B3-A1S-read
'the book that I read'

RCs show no overt complementizer akin to English *that*. *Wh*-words cannot be used as relative pronouns.

§1 Background on Chuj

§2 **Free relatives in Chuj**

- Definite free relatives
- Indefinite free relatives

§3 Proposal

§4 *Jun* free relatives

§5 Conclusion

Definite and indefinite free relatives in Chuj

Chuj has two kinds of free relatives:

(8) **Chuj definite FR:**

ix-∅-in-mak [_{FR} mach ix-∅-ulek'-i].
PRFV-B3-A1s-hit who PRFV-B3-come-ITV

✓ 'I hit the person who came.'

* 'I hit someone who came.'

(9) **Chuj indefinite FR:**

Ay [_{FR} mach ix-∅-ulek'-i].
EXIST who PRFV-B3-come-ITV

* 'The person came.'

✓ 'Someone came.'



Both FRs have the same syntactic size and no modal meaning.

The size of definite FRs

Definite FRs are full clauses:

(10) **Independent DP subject in the definite FR:**

Ko-gana [_{FR} **tas** ix-∅-s-man waj Xun].
A1p-like what PRFV-B3-A3-buy CL.NAME Juan

‘We like [what Juan bought].’

(11) **Definite FR with progressive:**

A ix Malin s-∅-gana ix s-∅-il-a
TOP CL.FEM Maria IMPF-B3-want CL.FEM IMPF-B3-see-TV

[_{FR} **tas** lan hin-k’ul-an-i].
what PROG A1s-do-AP-ITV

‘Maria wants to see [what I am doing].’

(Progressive is larger than other aspects; Coon and Carolan 2015.)

Definite FRs are arguments

Definite FR can be in any argument position:

(12) **Definite FR in object and subject position:**

a. $ix-\emptyset$ -in-mak [_{FR} mach $ix-\emptyset$ -ulek'-i].
PRFV-B3-A1s-hit who PRFV-B3-come-ITV

'I hit [the person who came].'

(=8)

b. ix -in-s-mak [_{FR} mach $ix-\emptyset$ -ulek'-i].
PRFV-B1s-A3-hit who PRFV-B3-come-ITV

'[The person who came] hit me.'

(13) **Preverbal topic position is ok too:**

A [_{FR} mach $ix-\emptyset$ -ulek'-i] ix -in-s-mag-a'.
TOP who PRFV-B3-come-ITV PRFV-B1s-A3-hit-TV

'[The person who came]_i, they_i hit me.'

Definite FRs with quantifiers

Definite FRs may be used as the domains of quantifiers:

(14) **Quantifiers taking definite FRs:**

a. [Jantak [_{FR} mach ix-∅-ulek'-i]] ix-∅-w-il-a'.
many who PRFV-B3-come-ITV PRFV-B3-A1s-see-TV

b. Ix-∅-w-il [jantak [_{FR} mach ix-∅-ulek'-i]].
PRFV-B3-A1s-see many who PRFV-B3-come-ITV
'I saw the many people who came.'

(15) a. [Juntzan [_{FR} mach ix-∅-ulek'-i]] ix-∅-w-il-a'.
certain who PRFV-B3-come-ITV PRFV-B3-A1s-see-TV

b. Ix-∅-w-il [juntzan [_{FR} mach ix-∅-ulek'-i]].
PRFV-B3-A1s-see certain who PRFV-B3-come-ITV
'I saw these people who came.'

Indefinite free relatives

Recall the properties of indefinite FRs discussed in the literature:

- (16) **Properties of indefinite FRs, cross-linguistically:**
- a. narrow-scope indefinite
 - b. must be argument of verb with existential force
 - c. nonfinite/subjunctive
 - d. interpreted w/ existential modal of availability
 - e. no independent subject
 - f. transparent for extraction

These properties should go together, if Šimík's Conjecture is true: indefinite FRs are all modal existential *wh*-constructions (MECs) of sub-CP size, structurally smaller than definite FRs.

The structure of free relatives in Chuj

Against this prediction, **Chuj indefinite FRs are not nonfinite**; for example, they show full tense/aspect contrasts:

(17) **Indefinite FRs with prospective and progressive aspect:**

- a. Ay [_{FR} **tas** ol]- \emptyset -k-apej].
EXIST what PROSP-B3-A1p-try
'We will eat something.'
literally 'There exists [what we will eat].'
- b. Ay [_{FR} **mach** lan]-in y-il-an-i].
EXIST who PROG-B1s A3-see-SUB-ITV
'Someone is watching me.'
literally 'There exists [who watching me].'

The structure of free relatives in Chuj

(18) Indefinite FR with subject:

Ay [_{FR} tas ix-∅-s-man waj Xun].
EXIST what PRFV-B3-A3-buy CL.NAME Juan

‘Juan bought something.’

literally ‘There exists [what Juan bought].’

Their interpretations **lack the modal semantics** associated with modal existential *wh*-constructions.

- 👉 Indefinite FRs are **full clauses**—full tense/aspect, independent subject—and have no modal meaning, *just like definite FRs*.

An indefinite FR must be the complement of a small set of predicates, with existential force.

(19) **Existential predicates in Chuj:**

- a. Ay jun uum sat te' mexa.
EXIST one book surface CL table
'There is a book on the table.'
- b. Malaj ch'anh uum sat te' mexa.
NOT.EXIST CL book surface CL table
'There is no book on the table.'
- c. Ch'ok ch'anh uum sat te' mexa.
OTHER CL book surface CL table
'There is a different book on the table.'

An indefinite FR must be the complement of a small set of predicates, with existential force.

(20) **Indefinite FR with existential predicates:**

- a. Ay [_{FR} **mach** ix-∅-ulek'-i].
EXIST who PRFV-B3-come-ITV

‘Someone came.’

(= 9)

- b. Malaj [_{FR} **mach** ix-∅-ulek'-i].
NOT.EXIST who PRFV-B3-come-ITV

‘No one came.’

- c. Ch'ok [_{FR} **mach** ix-∅-ulek'-i].
OTHER who PRFV-B3-come-ITV

‘Others came.’

Other existential verbs

In addition to these basic existential predicates, some other verbs that express the existence of their internal argument can license indefinite FRs:

(21) **Indefinite FRs with predicates with an existential component:**

- a. Aj-nak [_{FR} **mach** famoso].
born-STAT who famous
'Someone famous was born.' (e.g. 30 years ago)
- b. Ix-∅-chash [_{FR} **mach** ol-∅-po-an ke'n hin-carro].
PRVF-B3-find who PROSP-B3-fix-AF CL.METAL A1s-car
'Someone was found who will fix my car.'
- c. Ko-say-an [_{FR} **tas** ∅-ko-k'ulej].
A1p-look.for-SUB what B3-A1p-do
'We are looking for something to do' (Hopkins, 1967, 158)

Summary

- 👉 **Indefinite and definite FRs in Chuj have equal clause size**, against the claim that indefinite FRs are always modal existential *wh* constructions (MECs) (Šimík, 2011).

The internal syntax of Chuj indefinite FRs is instead exactly what is predicted if they are full CPs (as in FRs of Caponigro, 2003, 2004, a.o.).

	Def FR	MEC	Chuj indef FR
interpretation	def	indef	indef
nonfinite/subjunctive	×	○	×
modal interpretation	×	○	×
no independent subject	×	○	×
narrow-scope indefinite	N/A	○	○
must be argument of existential verb	N/A	○	○

§1 Background on Chuj

§2 Free relatives in Chuj

§3 **Proposal**

- Accounting for the distribution of definite and indefinite FRs
- Evidence from extraction and *jun* free relatives

§4 *Jun* free relatives

§5 Conclusion

We follow the analysis of indefinite FRs in Caponigro (2003, 2004).

Definite and indefinite FRs have a common CP core:

$$(22) \quad \llbracket [_{CP} \text{mach}_i \underbrace{[_{TP} \text{ixulek}'i t_j}]] \rrbracket = \lambda x . x \text{ came}$$


Abstraction over movement of the *wh* pronoun generates a predicate denotation, type $\langle e, t \rangle$.

Proposal: indefinite FR

Indefinite FRs are the complement of existential verbs, e.g.:

$$(23) \quad \llbracket \text{EXIST } (ay) \rrbracket = \lambda P_{\langle e,t \rangle} . \exists x P(x)$$

(cf analyses of English *there is*; Milsark, 1974; McNally, 1998; a.o.)

 This explains the limited distribution of indefinite FRs.

Proposal: definite FRs


Definite FRs are formed by adding a D-layer to the FR.

The addition of a ι D forms a definite FR of type e:

- (24) $ix-in-s-mak$ [$_{DP} \iota$ [$_{CP}$ **mach** $ix-\emptyset-ulek'-i$]].
PRFV-B1s-A3-hit who PRFV-B3-COME-ITV
‘[The person who came] hit me.’ (=12b)

Other D quantifiers form $\langle et, t \rangle$ quantificational DPs:

- (25) [$_{DP}$ $tzijtum$ [$_{CP}$ **tas** $tz-\emptyset-chonh-nax$]]
 many what IMPF-B3-SELL[-PASS]
‘many things that are sold’ (Buenrostro, 2009)

 The DP layer makes definite FRs available in any argument position.

Definite and indefinite FRs are similar internally but different externally:

- A subject is always possible, because these are CPs.
- No tense/aspect restrictions.
- No modal component to indefinite FRs.
- Different licensing environments lead to differences in distribution.

Extraction islands

Support for this proposal comes from extraction.

Headed relative clauses in Chuj are islands for extraction:

(28) * *Mach* [_{TP} ix-∅-y-awtej waj Xun
who PRFV-B3-A3s-read CL Juan

[_{DP} jun libro [_{RC} {ix-∅-s-tz'ib'ej, ix-∅-tz'ib'-an(-i)} ___]]?
one book {PRFV-B3-A3s-write, PRFV-B3-write-AF-ITV}

Intended: 'Who did Juan read a/one book that wrote?'

(Two variants are tested, with and without Agent Focus morphology.)

Extraction from indefinite FRs

It is possible to extract out of indefinites FRs:

- (29) Ay [_{FR} **tas** ix-∅-s-man waj Xun].
EXIST what PRFV-B3-A3s-buy CL.MASC Juan

‘Juan bought something.’

baseline

- (30) *Mach* [_{TP} ay [_{FR} **tas** ix-∅-s-man-a' _____]]?
who EXIST what PRFV-B3-A3s-buy-TV

‘Who bought something?’

Extraction from definite FRs

However, it is not possible to extract out of definite FRs:

- (31) $ix-\emptyset-y-il$ waj Xun [_{FR} **mach** $ix-\emptyset-mak-an-poj$ te' mexa].
PRFV-B3-A3-see CL Juan who PRFV-B3-hit-AF-break CL table
'Juan saw [the person who broke the table].' baseline
- (32) * *Tas* $ix-\emptyset-y-il$ waj Xun [_{FR} **mach** $ix-\emptyset-mak-an-(poj)$ ___].
what PRFV-B3-A3-see CL Juan who PRFV-B3-hit-AF-break
Intended: 'What_{*i*} did Juan see [the person who broke it_{*i*}]?'

It is possible to extract out of indefinite free relatives but not out of definite free relatives.

👉 This is in line with Šimík's (2011) findings for free relatives cross-linguistically.

Our explanation: An indefinite FR is a (special kind of) CP complement with no DP layer, therefore not an island.

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Chuj has a hybrid FR construction, with an indefinite meaning but definite-like distribution: the indefinite *jun* free relative.

(33) **A *jun* free relative:**

[**jun** [_{FR} **mach** ix-∅-ulek'-i]]
one who PRFV-B3-come-ITV

'one/a person who came'

The *jun*-FR can be the argument of existential predicates:

(34) **Indefinite free relative, repeated:**

Ay [_{FR} mach ix-∅-ulek'-i].
EXIST who PRFV-B3-come-ITV

'Someone came.' (possibly plural) (= 9)

(35) **A *jun* free relative, as the argument of *ay*:**

Ay jun [_{FR} mach ix-∅-ulek'-i].
EXIST one who PRFV-B3-come-ITV

'One/a person came.'

Jun free relatives

Jun-FR can appear in any argument position:

(36) *Jun* FR as object of ‘see’:

ix-∅-w-il [jun [_{FR} mach ix-∅-ulek'-i]].
PRFV-B3-A1s-see one who PRFV-B3-come-ITV

‘I saw one/a person who came.’

(37) *Jun* FR as pre-verbal subject topic:

[Jun [_{FR} mach ix-∅-ulek'-i]] ix-∅-w-il-a'.
one who PRFV-B3-come-ITV PRFV-B3-A1s-see-TV

‘[One/a person that came]_i, I saw them_i.’

 *Jun* creates indefinite DP free relatives.

The addition of *jun* is crucial. Without it, the FR is interpreted as definite:

(36) **Jun FR as object of ‘see’:**

ix-∅-w-il [jun [_{FR} mach ix-∅-ulek’-i]].
PRFV-B3-A1s-see one who PRFV-B3-come-ITV

‘I saw one/a person who came.’

(38) **FR without *jun* as the object of ‘see’ must be definite:**

ix-∅-w-il [_{FR} mach ix-∅-ulek’-i].
PRFV-B3-A1s-see who PRFV-B3-come-ITV

‘I saw the person/people who came.’

(cf 36)

Extraction out of *jun* free relatives

- ☞ In contrast to indefinite FRs without *jun*, it is not possible to extract out of *jun*-FRs:

(39) * *Tas* [_{TP} ay [**jun** [_{FR} **mach** ix-∅-awt-an(-i) ____]]]?
what EXIST one who PRFV-B3-read-AF

Intended: 'What did someone read?'

(40) * *Mach* [_{TP} ix-∅-y-awtej waj Xun
who PRFV-B3-A3-read CL.MASC Juan

[**jun** [_{FR} **tas** ix-∅-tz'ib-an(-i) ____]]]?
one what PRFV-B3-write-AF-ITV

Intended: 'Who_i did Juan read [something that ____ wrote]?'

Extraction out of *jun* free relatives

Recall our earlier observation: indefinite FRs (*w/o jun*) allow extraction.

Two hypotheses:

- 1 Indefinite FRs lack the DP layer of other FRs.
- 2 It's generally easier to extract out of RCs on indefinites.
Much literature on Scandinavian languages—see e.g. Engdahl (1997); and see also Kuno (1976); McCawley (1981); Chung and McCloskey (1983) on English.



Extraction correlates with syntactic structure:

It is possible to extract out of a FR only if they do not have a D layer; it is not indefiniteness that allows exceptional extraction.

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FRs vs MECs

Today we investigated indefinite free relatives in Chuj, which have a subset of the properties previously thought to hold for indefinite FRs cross-linguistically.

	Def FR	Chuj indef FR	MEC
interpretation	def	indef	indef
nonfinite/subjunctive	×	×	○
modal interpretation	×	×	○
no independent subject	×	×	○
narrow-scope indefinite	N/A	○	○
must be argument of existential verb	N/A	○	○
transparent for extraction	×	○	○

- 👉 **Not all indefinite FRs are modal existential *wh*-constructions (MECs) of sub-CP size, contra Šimík's Conjecture.**

Nominal domains

An additional difference: Definite FRs may include overt nominal domains.

(41) **Nominal domains are possible with definite FR:**

ix-∅-w-ilelta [_{FR} mach winh unin ix-∅-ulek'-i].
PRFV-B3-A1s-meet who CL.MASC boy PRFV-B3-come-ITV

'I met the boy who came.'

In contrast, indefinite FRs (including *jun*-FRs) may not include domains.

(42) **No nominal domain with indefinite FR:**

* Ay (jun) [_{FR} mach winh unin ix-∅-ulek'-i].
one EXIST who CL.MASC boy PRFV-B3-come-ITV

Intended: 'Some boy came.'

This seems to track indefiniteness, not syntactic size, and remains an open question. (See more in the Appendix.)

A similar construction is observed in Yucatec (AnderBois, 2012; Gutiérrez-Bravo, 2013, a.o.):

(43) **Indefinite free relative in Yucatec:** (AnderBois, 2012, 361)

Yan [_{FR} máax t-u yuk'-aj le sa'-o'].
exists who PRFV-A3 drink-STATUS the atole-DISTAL

‘Someone drank the atole.’

Indefinite FRs across Mayan

And similarly in Kaqchikel (Erlewine, to appear):

(44) **Indefinite FR in Kaqchikel:**

K'o [_{FR} x-oj-tz'et-ö roj].
EXISTS COM-B1p-see-AF 1pl

'Someone saw us.'

(45) **Not an island for extraction:**

Achike [_{TP} k'o [_{FR} x-∅-tz'et-ö _____]]?
who EXISTS COM-B3s-see-AF

'Who did someone see?'

But this construction is not clearly a FR. There is no *wh*-word at the edge.

Indefinite FRs across Mayan

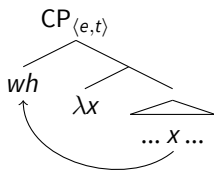
A *wh* appears when it pied-pipes material (here, a relational noun):

- (46) K'o [_{FR} [*achoj che*] x-∅-in-ya-wi ri pastel].
EXISTS whose RN COM-B3s-A1s-give-wi the cake
'I gave the cake to someone.'
literally 'There exists [[to whom] I gave the cake].'

We hypothesize that these existential constructions in Kaqchikel are also indefinite FRs, but in most cases with no pronounced *wh*-word.

A simple proposal

Definite and indefinite FRs share a common core syntax:



☞ Both are full CPs, with subject and full tense/aspect, as in Caponigro (2003, 2004) and contra Šimík (2011).

- Definite FRs: add a DP layer
- Indefinite FRs: complement of existential predicates

An open question: Why doesn't this happen more frequently, given how simple the analysis is?

Thank you! Questions?

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Handouts and slides at <http://hkotek.com> & <http://mitcho.com>.
See also Kotek and Erlewine (2015) for this and other data.

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Non-fronted questions exist, but they are interpreted as echo questions.

(47) **Non-fronting questions are echo questions; can't be embedded:**

- a. ix-∅-ulek' mach?
PRFV-B3-come who
'Who came?' (echo question) (cf 6a)
- b. *K-ojtak [ix-∅-ulek' mach].
A1p-know PRFV-B3-come who
Intended: 'We know who came.'
- c. K-ojtak [mach ix-∅-ulek'-i].
A1p-know who PRFV-B3-come-ITV
'We know who came.'