

Unifying definite and indefinite free relatives: Evidence from Mayan

Summary: *Free relatives* (FRs) such as *I liked* [_{FR} *what I read*] are described cross-linguistically as a type of relative clause of DP size and definite semantics (Jacobson, 1995, a.o.). Some languages also have what seem to be *indefinite FRs*, but Izvorski (1998), Grosu (2004), and Šimík (2011) argue that these are structurally distinct and better described as *Modal Existential wh-Constructions* (MECs).

In this paper we present a case where definite and indefinite FRs are more similar than previously thought. We present data from several understudied Mayan languages, where indefinite FRs show a *subset* of the properties claimed to hold universally of indefinite FRs as MECs. We propose a uniform internal syntax and semantics for FRs and argue that definite and indefinite FRs differ only in their external environment. We analyze Mayan indefinite FRs as property complements of existential verbs (see e.g. Milsark, 1974; McNally, 1998) lacking a DP layer. A DP layer can then be added to form definite FRs and headed relatives, available in any argument position. The study contributes to the typology of FRs cross-linguistically, challenging the claim in Šimík (2010) a.o. that all apparent indefinite FRs must be MECs with modal interpretation.

FRs cross-linguistically: Šimík (2011) presents a survey of 16 languages—a variety of Romance and Slavic languages as well as Modern Hebrew—which exhibit a stable set of properties across the “standard” (definite) FRs and indefinite FRs. (1) gives Hebrew examples and the claimed constellation of properties:

- | | |
|--|---|
| <p>(1) a. Standard (definite) FR in Hebrew:
 Ahav-ti et [_{FR} ma she-kara-ti].
 like.PAST-1sg ACC what that-read.PAST-1sg
 ‘I liked the thing I read.’</p> <ul style="list-style-type: none"> i. definite or universal (Jacobson, 1995, a.o.) ii. finite, indicative iii. DP; any argument position iv. island for extraction v. independent subject | <p>b. Indefinite FR (=MEC) in Hebrew:
 Yesh l-i [_{FR} ma li-kro].
 EXIST to-1sg what INF-read
 ‘I have something (available for me) to read.’</p> <ul style="list-style-type: none"> i. narrow-scope indefinite ii. nonfinite or subjunctive; interpreted with an existential modal of availability iii. must be arg. of verb with existential force iv. transparent to extraction v. subject often obligatorily controlled |
|--|---|

Šimík (2010) makes the strong claim that these categories are *all-or-nothing*: indefinite FRs with some but not all of these properties are claimed not to exist. (One apparent counterexample we discuss is Italian (Caponigro, 2003), where indefinite FRs are full indicative clauses, but they are not transparent to extraction.)

Mayan indefinite FRs: We contribute novel data from Chuj and Kaqchikel, building on work on Yucatec (AnderBois 2012; Gutiérrezz-Bravo 2013, a.o.). Data here from Chuj, an endangered language of Guatemala:

- | | |
|--|---|
| <p>(2) a. Definite FR in Chuj:
 Ix-in-mak [_{FR} mach ix-ulek’-i].
 PRFV-A1s-hit who PRFV-COME-ITV
 ‘I hit the person who came.’</p> | <p>b. Indefinite FR in Chuj:
 Ay [_{FR} mach ix-ulek’-i].
 EXIST who PRFV-COME-ITV
 ‘Someone came.’</p> |
|--|---|

These languages have indefinite FRs, as in (2b), that exhibit a subset of the properties described in (1b) above. Mayan indefinite FRs have narrow scope indefinite semantics, are limited to certain embedding verbs with existential force, and are transparent to extraction (data on next page). However, they do *not* have a modal interpretation, as MECs do (Izvorski, 1998; Grosu, 2004; Šimík, 2011), are full indicative clauses, and have independent subjects. Consequently, there must be a distinct mechanism by which extraction transparency and narrow scope indefiniteness are derived, without having a reduced clause with modal force.

Definite and indefinite FRs in these Mayan languages share an internal syntax/semantics but differ in their external environments. Indefinite FRs which are not MECs exist.

Proposal: We analyze Mayan indefinite FRs as simply CPs with \bar{A} -movement of the relative pronoun. This \bar{A} -movement step is interpreted as λ -abstraction (Heim and Kratzer, 1998, a.o.), leading to a property denotation with extensional type $\langle e, t \rangle$ (3). Gutiérrez-Bravo (2013) argues based on the behavior of pied-piping that *wh*-words in Yucatec Maya FRs are internal to the CP rather than base-generated high, outside of the CP. Our structure in (3) is compatible with this and we reproduce his arguments in Chuj and Kaqchikel.

Indefinite FRs are the complement of existential verbs (as in (1b)) which take a $\langle e, t \rangle$ property and assert its non-empty extension (see e.g. Milsark, 1974; McNally, 1998) (4). The indefinite RCs' $\langle e, t \rangle$ type makes them inappropriate for regular argument positions, which must be type *e* or $\langle et, t \rangle$.

$$(3) \quad \llbracket [\text{RC}=\text{CP } \mathbf{mach}_i \text{ [ixulek'i } t_i]] \rrbracket = \lambda x . x \text{ came} \quad (4) \quad \llbracket [\text{EXIST } (ay)] \rrbracket = \lambda P_{\langle e, t \rangle} . \exists x P(x)$$

Moreover, the lack of a DP layer makes these RCs transparent for extraction (cf Kush, Omaki, and Hornstein (2009); Kush and Lindahl (2011) analyses of extraction from Scandinavian indefinite RCs), (5)–(6):

- (5) *Mach* [TP ay [FR **tas** ix-s-man-a']? (6) ch'anh libro [RC malaj [FR **mach** ix-awt-an]]
 who EXIST what PRFV-A3S-buy-TV CL.BOOK book NOT.EXIST who PRFV-read-AF
 'Who bought something?' 'the book that no one read'

We show that \bar{A} -movement out of the indefinite FR indeed occurs in (5) and (6) above: Chuj also has a non-movement, resumptive chain strategy, but only with overt resumptive pronouns.

Definite FRs and headed relatives are formed by adding a D-layer to the structure in (3): the addition of a ι D forms a definite FR (type *e*; see (2a) and (7)), while other nominal material forms $\langle et, t \rangle$ DPs with RCs ((8) from Buenostro 2009). The addition of this DP layer makes them available in any argument position.

- (7) A [DP ι [RC **mach** ix-ulek'-i]] ix-in-s-mag-a'. (8) [DP tzijtum [RC **tas** tz-chonh-nax]]
 TOP who PRFV-COME-ITV PRFV-B1S-A3S-hit-TV many what IMPF-SELL-PASS
 'The person who came hit me.' 'many things that are sold'

Notice, moreover, that in the examples here, as with all the previous examples in this abstract, the embeddings under both definite and indefinite FRs are full indicative clauses. As such, they allow for an overt independent subject, negation, and an independent aspect, including the progressive whose structure is believed to be larger than other aspects (Coon and Carolan, 2015). Importantly, neither definite nor indefinite FRs have modal force, as described for MECs (1b).

Comparison to indefinite headed RCs: Headed relatives can also be indefinite with *jun* 'a/one' and can then be in any argument position—including fronted subject position in (9)—unlike indefinite FRs.

- (9) A [DP **jun** (anima) [RC **mach** ix-ulek'-i]] ix-in-s-mag-a'.
 TOP one person who PRFV-COME-ITV PRFV-B1S-A3S-hit-TV
 'A/one person who came hit me.'

Note that extraction out of headed RCs, including indefinite ones, is ungrammatical (cf (5)–(6) above):

- (10) * *Mach*_i [TP ix-y-awtej waj Xun [DP jun libro [RC {ix-s-tz'ib'ej, ix-tz'ib'-an} *t*_i]]]?
 who PRFV-A3S-read CL Juan one book {PRFV-A3S-write, PRFV-write-AF}
 Intended: 'Who did Juan read a/one book that wrote?'

The contrast between (10) and the extraction from the indefinite FRs (5)–(6) above shows that it is not simply the case that it is possible to freely extract out of relative clauses modifying indefinite DPs (cf Cinque, 2010).

Selected references: AnderBois (2012) "Focus and un informativity in Yucatec Maya questions," *NLS* 20. • Buenostro (2009) *Chuj de San Mateo Ixtatán*. • Cinque (2010) "On a selective 'violation' of the Complex NP Constraint" in *Structure Preserved*. • Grosu (2004) "The syntax-semantics of modal existential *wh* constructions" in *Balkan Syntax & Semantics*. • Gutiérrez-Bravo (2013) "Free relative clauses in Yucatec Maya," *Language Typology & Universals* 66. • Izvorski (1998) "Non-indicative *wh*-complements of existential and possessive predicates," *NELS* 28. • McNally (1998) "Existential sentences without existential quantification," *L&P* 21. • Šimík (2011) *Modal Existential Wh-Constructions*.