Unifying definite and indefinite free relatives: Evidence from Mayan

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Linguistic Society of America 90, Washington D.C., January 2016¹

0 Introduction

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]. \approx 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*.

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.'

- The indefinite FR (3) is nonfinite and disallows an independent subject.
- The indefinite FR has a modal flavor; also called *modal existential wh-constructions* (MECs).
- The indefinite FR is not an island for extraction.

In many languages, these syntactic and semantic properties correlate:

- Definite ⇔ structurally larger (DP)
- Indefinite ⇔ *structurally smaller*

See Šimík (2011) for discussion of 16 lgs (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: 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

Chuj is a verb-initial language.²

(5) Simple declarative sentences:

a. Intransitive:
Ol-0-wa ix.

PROSP-B3-eat CL.FEM

She will eat.'

b. Transitive:
Ix-0-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.)

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

(6) Simple *wh*-questions:

a. Intransitive subject:

Mach ix-\$\theta\$-ulek'-i?

who PRFV-B3-come-itv

'Who came?'

b. Transitive object:

Tas ix-\$\theta\$-a-man-a'?

what PRFV-B3-A2s-buy-tv

'What did you buy?'

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

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

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

(7) Headed relative clauses:

'the book that I read'

a. Ix unin [RC (*mach) ix-∅-ulek'-i]

CL.FEM child who PRFV-B3-come-itv

'the girl who came'

b. Jun (ch'anh) libro [RC (*tas) ix-∅-w-awtej]

one CL.BOOK book what PRFV-B3-A1s-read

RCs show no overt complementizer akin to English *that*. Wh-words cannot be used as relative pronouns.³

¹We thank Magdalena Torres for her time and patience in sharing her language with us. For comments and discussion we would like to thank Jessica Coon, Ivano Caponigro, Scott AnderBois, Radek Šimík, Lizzie Carolan, and the audience at NELS 46. Errors are each other's.

²The following abbreviations are used in this presentation: A = Set A (ergative), AF = Agent Focus, B = Set B (absolutive), CL = classifier, IMFF = imperfective, rrv = intransitive verb, NML = nominal suffix, PSV = passive, POSS = possession, PREV = perfective, PROC = progressive, PROSP = prospective, STAT = stative, SUB = subordinate, Tor = topic, TV = transitive verb. See Domingo Pascual (2007) on Chuj orthographic conventions. All uncredited data is from the authors' notes. See Kotek and Erlewine (2015) for additional data.

³Similar facts are presented for the San Sebastián dialect of Chuj in Maxwell (1976).

2 Free relatives in Chuj

Chuj has two kinds of free relatives:

(8) Chuj definite FR: $Ix-\emptyset$ -in-mak $[_{FR}$ mach $ix-\emptyset$ -ulek'-i]. PRFV-B3-A1s-hit who PRFV-B3-come-itv

√'I hit the person who came.'

* 'I hit someone who came.'

(9) Chuj indefinite FR:

Ay [FR mach ix-Ø-ulek'-i]. EXIST who PRFV-B3-come-ITV

* 'The person came.'

√ 'Someone came.'

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

2.1 Definite free relatives

Definite FRs are full clauses:

(10) Independent DP subject in the definite FR:

Ko-gana [FR tas ix-Ø-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- θ -gana ix s- θ -il-a [$_{FR}$ tas $\overline{\text{lan}}$ hin-k'ul-an-i]. Top Cl.fem Mari Impf-B3-want Cl.fem Impf-B3-see-tv 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 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].'

b. Ix-in-s-mak [FR mach ix-\$\Psi\$-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-ity prfv-B1s-A3-hit-ty

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

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-0-w-il [jantak [FR mach ix-0-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-Ø-ulek'-i]] ix-Ø-w-il-a'. certain who prfy-B3-come-ity prfy-B3-A1s-see-ty

b. Ix- \emptyset -w-il [juntzan [FR mach ix- \emptyset -ulek'-i]].

PRFV-B3-A1s-see certain who PRFV-B3-come-ITV

'I saw these people who came.'

2.2 Indefinite free relatives

Recall the properties of indefinite FRs discussed in the literature:

- (16) Properties of indefinite FRs, cross-linguistically: (Šimík, 2011, a.o.)
 - 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.

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-aplej]. 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].'

(18) Indefinite FR with subject:

(=8)

Ay [FR tas ix-Ø-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.'

(20) Indefinite FR with existential preds:

- a. Ay [FR mach ix-∅-ulek'-i].
 EXIST Who PRFV-B3-come-ITV
 'Someone came.' (= 9)
- b. Malaj [FR mach ix-Ø-ulek'-i].
 NOT.EXIST who PRFV-B3-come-ITV
 'No one came.'
- c. Ch'ok [FR mach ix-0-ulek'-i].

 OTHER who PRFV-B3-come-ITV

 'Others came.'

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].
 - 'Someone famous was born.' (e.g. 30 years ago)
- b. $\underline{\text{Ix-}\emptyset\text{-chash}}_{\text{PRVF-B3-find}}$ [FR mach ol- \emptyset -po-an ke'n hin-carro]. who prosp-B3-fix-af cl.metal A1s-car
 - 'Someone was found who will fix my car.'
- c. Ko-say-an $[_{FR}$ tas \emptyset -ko-k'ulej]. $\overline{A1p}$ -look.for-sub what B3-A1p-do
- 'We are looking for something to do'

(Hopkins, 1967, 158)

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	×	0	×
modal interpretation	×	\circ	×
no independent subject	×	\circ	×
narrow-scope indefinite	N/A	0	0
must be argument of existential verb	N/A	\circ	\circ

3 Proposal

We follow the analysis of indefinite FRs in Caponigro (2003, 2004). Definite and indefinite FRs have a common CP core:

(22)
$$\left[\left[\left[_{CP} \operatorname{mach}_{i} \left[_{TP} \operatorname{ixulek'i} t_{i} \right] \right] \right] = \lambda x \cdot x \operatorname{came}$$

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

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

(23)
$$[\![\text{EXIST}(ay)]\!] = \lambda P_{\langle e,t \rangle}$$
. $\exists x P(x)$ (cf analyses of English *there is*; Milsark, 1974; McNally, 1998; a.o.)

This explains the limited distribution of indefinite FRs.

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

The addition of a ι D forms a definite FR of type $\emph{e}\textsc{:}$

(24) Ix-in-s-mak [DP ι [CP mach ix-∅-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-Ø-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.

Alternative hypothesis: We might imagine that "ay-mach" is a constituent or a compound, which is itself the argument of the verb. However:

(26) Ay may be separated from wh by sentential material:⁴

Ay pax [$_{FR}$ mach chanh y-iko']. EXIST also who four A3-Poss

'There are also those who have four.'

(Williams and Williams, 1971, 332)

(27) Agent Focus indicates fronting of subject 'who':

Ay $[_{FR}$ mach ix- \emptyset -man-[an] ch'anh uum tik]. Exist who prfv-B3-buy-af cl.book book dem

'Someone bought this book.'

See also Guttiérrez-Bravo (2013) for arguments for a parallel structure to the one we propose here for Yucatec FRs.

⁴The preposition/relational noun 'iko' here expresses possession (Hopkins, 2012, 23).

3.1 Extraction

Support for this proposal comes from extraction.

Headed relative clauses in Chuj are islands for extraction:

* Mach [TP ix-0-y-awtej waj Xun who PRFV-B3-A3s-read CL Juan

> [DP] jun libro [RC] {ix- \emptyset -s-tz'ib'ej, ix-0-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.) It is possible to extract out of indefinites FRs:

Ay [$_{FR}$ tas ix- \emptyset -s-man Xun]. waj EXIST What PRFV-B3-A3s-buy CL.MASC Juan 'Juan bought something.'

baseline

baseline

(30) $Mach [_{TP} ay [_{FR} tas ix-\emptyset-s-man-a']$ who Exist what PRFV-B3-A3s-buy-TV 'Who bought something?'

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

- Ix-∅-v-il waj Xun [FR mach ix-0-mak-an-poj PRFV-B3-A3-see CL Juan who PRFV-B3-hit-AF-break CL table 'Juan saw [the person who broke the table].'
- * Tas ix-0-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.

4 *Iun* free relatives

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-0-ulek'-i]] who prfv-B3-come-ity

'one/a person who came'

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

(34) Indefinite free relative, repeated: (35) A jun free relative, as the argument of ay:

Ay [FR mach ix-0-ulek'-i]. EXIST who PRFV-B3-come-ITV Av jun [FR mach ix-0-ulek'-i]. exist one who prfv-B3-come-ity

'Someone came.' (possibly plural) (= 9) 'One/a person came.'

Jun-FR can appear in any argument position:

(36) Jun FR as object of 'see':

Ix-0-w-il [jun [FR mach ix-0-ulek'-i]]. PRFV-B3-A1s-see one who prfv-B3-come-ity

'I saw one/a person who came.'

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

[Jun [FR mach ix-0-ulek'-i]] ix-0-w-il-a'. 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:

(38) FR without jun as the object of 'see' must be definite:

Ix-Ø-w-il [FR mach ix- \emptyset -ulek'-i]. PRFV-B3-A1s-see who PRFV-B3-come-ity

'I saw the person/people who came.'

(cf 36)

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- \emptyset -awt-an(-i) [TP]? what exist one who prfv-B3-read-af

Intended: 'What did someone read?'

* Mach [TP ix-0-y-awtej waj Xun [jun [$_{FR}$ tas ix- \emptyset -tz'ib-an(-i)]]]? who PRFV-B3-A3-read CL.MASC Juan one what PRFV-B3-write-AF-ITV Intended: 'Who_i did Juan read [something that ____ wrote]?'

Recall our earlier observation: indefinite FRs (without *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.

5 Conclusion

5.1 Free relatives vs modal existential wh-constructions

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	×	×	\circ
no independent subject	×	×	\circ
narrow-scope indefinite	N/A	0	
must be argument of existential verb	N/A	\circ	\circ
transparent for extraction	×	\circ	\circ

Wot all indefinite FRs are modal existential wh-constructions (MECs) of sub-CP size, contra Šimík's Conjecture.

5.2 Nominal domains

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

(41) Nominal domains are possible with definite FR:

Ix-θ-w-ilelta [FR mach winh unin ix-θ-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-0-ulek'-i].

one exist who cl.masc boy PRFV-B3-come-ity

Intended: 'Some boy came.'

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

5.3 Indefinite FRs across Mayan

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

(43) Indefinite free relative in Yucatec:

(AnderBois, 2012, 361)

 \underline{Yan} [FR máax t-u yuk'-aj le sa'-o']. exists who PRFV-A3 drink-status the atole-distal

'Someone drank the atole.'

And similarly in Kagchikel (Erlewine, to appear):

(44) Indefinite FR in Kagchikel:

(45) Not an island for extraction:

 $\underline{ \text{K'o}}_{\text{EXISTS}} \ \ \, \text{[$_{FR}$ x-oj-tz'et-\"{o}$ roj]}. \\ \text{com-B1p-see-af 1pl}$

Achike [$_{TP}$ $\underline{k'o}$ [$_{FR}$ x- \emptyset -tz'et- \ddot{o} who exists com-B3s-see-af

'Someone saw us.'

'Who did someone see?'

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

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

(46) <u>K'o</u> [FR [achoj che] x-Ø-in-ya-wï 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.

5.4 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?

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

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Appendix: Free relatives and nominal domains

Chuj forms complex *wh*-phrases by adding a nominal domain to simplex *wh*-words such as *who* and *what*. In questions, *wh*-words take domains to form *which*-phrases:

- (47) Which-questions:
 - a. **Mach** ix- \emptyset -k-il-a'? who PRFV-B3-A1p-see-TV 'Who did we see?'
- b. [Mach winh unin] ix-∅-k-il-a'? who cl.masc child prfv-B3-A1p-see-tv 'Which boy did we see?'
- (48) a. Tas ix-∅-y-awtej waj Xun? what prfv-B3-A3-read cl.name Juan 'What did Juan read?'

b. [Tas libro-al] ix-0-y-awtej waj Xun? what book-nml prfv-B3-A3-read cl.name Juan 'Which book did Juan read?'

Definite free relatives similarly allow the inclusion of a nominal domain:

- (49) Nominal domains are possible with definite FR:
 - a. Ix- \emptyset -w-ilelta [FR mach ix- \emptyset -ulek'-i].

 PRFV-B3-A1s-meet who PRFV-B3-come-itv
 'I met the person who came.'
 - b. Ix- \emptyset -w-ilelta [FR mach winh unin ix- \emptyset -ulek'-i]. PRFV-B3-A1s-meet who cl.masc boy PRFV-B3-come-itv 'I met the boy who came.'
- (50) a. Ko-gana [FR tas ix-∅-s-man waj Xun]. A1p-like what PRFV-B3-A3-buy CL.NAME Juan 'We like the thing that Juan bought.'
 - b. Ko-gana [FR tas libro-al ix-∅-s-man waj Xun]. A1p-like what book-nml prfv-B3-A3-buy cl.name Juan 'We like the book that Juan bought.'

In contrast, indefinite free relatives may not include overt nominal domains:

- (51) No nominal domain with indefinite FR:
 - a. Ay [FR mach ix-∅-ulek'-i].

 EXIST Who PRFV-B3-come-ITV

 'Someone came.'
 - b. * Ay [FR mach winh unin ix-∅-ulek'-i].
 EXIST Who CL.MASC boy PRFV-B3-come-itv
 Intended: 'Some boy came.'
- (52) a. Ay [FR tas ix-∅-s-man waj Xun]. EXIST What PRFV-B3-A3-buy CL.NAME Juan 'Juan bought something.'
 - * Ay [FR tas (ch'anh) libro(-al) ix-Ø-s-man waj Xun].
 EXIST What CL.BOOK book-NML PRFV-B3-A3-buy CL.NAME Juan Intended: 'Juan bought some book.'

Jun-FRs also do not allow nominal domains:

- (53) Jun FRs disallow nominal domains:
 - a. *Ix-Ø-w-il **jun mach** winh unin ix-Ø-ulek'-i.

 PRFV-B3-A1s-see one who CL.MASC boy PRFV-B3-come-itv

 Intended: 'I saw one /a boy who came.'

b. * [Jun mach winh unin ix-0-ulek'-i] ix-0-w-il-a'.
one who cl.Masc boy prfv-B3-come-itv prfv-B3-A1s-see-tv
Intended: '[One/a boy that I saw] came.' (cf 37)

(cf 36)

Here, then, we observe a difference between definite and indefinite free relatives that tracks not their syntactic size (as with extraction), but rather the definiteness status of the FR. This does not at the moment follow from our proposal, and we are open to suggestions for how to accommodate this fact into our analysis.