The semantic contribution of wh-words and the ranking of type-shifts: evidence from free relatives crosslinguistically

IVANO CAPONIGRO
University of Maryland at College Park

Introduction. In this paper, I argue that a crosslinguistic study of the semantic behavior of free relatives (e.g. bracketed clause in (1)) gives empirical support to two main claims. First, wh-words like *who, what, where, when, how* and their equivalents across languages lack any quantificational force or maximality: they semantically behave like set restrictors. Second, among the type-shifting operations that have been proposed (cf. Partee 1987, Chierchia 1998, Dayal to appear), "iota" (7.a) is ranked higher than "existential quantification" (8.a), as argued on independent ground in Dayal (to appear), contra Chierchia (1998). Evidence from free relatives comes from more than twenty languages from three language families (Indo-European, Semitic, and Finno-Ugric)

Data. Jacobson (1995) and Dayal (1996) convincingly show that English free relatives do not exhibit any quantificational force. I add a further piece of evidence by showing that free relatives exhibit quantificational variability effects with adverbials of quantity (e.g. *for the most part*), unlike universally or existentially quantified nominals (1). On the other hand, both Jacoboson and Dayal argue that free relatives always denote maximal entities, like definite descriptions. According to them, maximality in free relative is lexically encoded in the meaning of wh-words. This predicts that free relatives should always exhibit maximality, since they are always introduced by a wh-word. I show that this prediction is not borne out. First, free relatives that occur in the complement position of existential predicates never exhibit maximality. This is shown in (2), in which the free relative introduced by *chi* 'who' (2a) can be replaced and paraphrased with a (complex) indefinite DP (2c), while a definite DP makes the sentence unacceptable (2b). This particular kind of free relative is found in all languages that allow for standard free relatives but Germanic (with the exception of Yiddish). Second, standard free relatives may not exhibit maximality either. (3) shows an example of a standard free relative that exhibits maximality, while (4a) and (4b) contain free relatives that do not exhibit maximality, as made clear by their paraphrases.

Proposal. I argue that the variability in the semantic behavior of free relatives can be accounted for as follows. A wh-word semantically behaves like a set restrictor: it applies to a set and returns a subset whose members satisfy the semantic restriction that the wh- word carries (+animacy for *who*, -animacy for *what*, place/location for *where*, time for *when*, and manner for *how*; this is what P in (5) stands for). The set that the wh-word applies to results from abstracting over the variable introduced by the wh-trace. The subset that the wh-word returns is what the whole free relative denotes. An example of a partial semantic derivation is given in (6). The set-like denotation of a free relative always generates a type mismatch, no matter what position in the matrix clause the free relative occupies (argument or PP-like/adverbial adjunct). If the set denoted by a free relative has a maximal entity, then the "iota" type-shift operation must apply (7b). If the set denoted by the free relative does not have maximal entity, then existential quantification can apply (8c). The reasons why free relatives always generate a type mismatch and the conditions under which a maximal entity is not available for the set denoted by a free relative are discussed in detail.

(1) [What I bought at that store] is for the most part expensive. *free relative*
[Everything I bought at that store] is for the most part expensive. ∀
[Something/ some of things I bought at that store] are for the most part expensive. ∃

(2)*Free relative in the complement position of an existential predicate in Italian*
a. C'è [chi sà dire solo no]. *free relative⇒ NO maximality*
there's who can.3S say only no
'There {is somebody/are people} who {says/say} no all the time.'
b.*{C'è/ci sono} [{la persona/le persone} che sà/sanno dire solo no]. *definite ⇒maximality*
'{There's/there are}the {person/people} who{says/say}no all the time.'
c. {C'è/ci sono} [{una persona/delle persone} che sà/sanno dire solo no].*indef.⇒ NO maxim.*
'{There's/there are}{a person/some people} who{says/say}no all the time.'

(3) *Standard free relatives introduced by* where *that exhibit maximality*
I went …
… [where she told me to]. *free relative⇒ maximality*
… [to the place(s) she told me to]. *definite⇒maximality*
… # [to a place/some places she told me to]. *indefefinite⇒NO maximality*

(4) *Free relatives introduced by* where *that do not exhibit maximality*
a. For years, I lived …
… [where it never snowed]. *free relative⇒ NO maximality*
… # [in the place(s) where it never snowed]. *definite⇒maximality*
… [in a place/places where it never snowed]. *indefefinite⇒NO maximality*
b. Captain Kirk went …
… [where no man had gone before]. *free rel.⇒ NO maximality*
… # [to the place(s) where no man had gone before]. *definite⇒maximality*
… [to a place/places where no man had gone before]. *Indefefin. ⇒NO maximality*

(5)$\lambda X \lambda x[P(x) \wedge X(x)]$

(6)a. Jie likes [what$_m$ Adam likes t_m]
b. [Adam likes t_m] ⇝ λx[like(x)(a)]
c. [what] ⇝ $\lambda X \lambda x$[inanimate(x) ∧ X(x)]
d. [what$_m$ Adam likes t_m] ⇝ $\lambda X \lambda x$[inanimate(x) ∧ X(x)]([Adam likes t_m] ⇝ λx[like(x)(a)])
= λx[inanimate(x) ∧ like(x)(a)]

(7) *If the free relative denotes a set with a maximal entity:*
a. **"iota" type-shift**: $\lambda X\ \iota$[X(x)]
b. $\iota \lambda x$[inanimate(x) ∧ like(x)(a)] *(6d after "iota" applied)*

(8) *If the free relative denotes a set with no maximal entity:*
a. **∃ type-shift**: $\lambda X \exists x$[X(x)]
b. [chi sà dire solo no] ⇝ λy[animate(y) ∧ say-no-all-the-time(y)]
c. $\lambda X \exists x$[X(x)](λy[animate(y) ∧ say-no-all-the-time(y)])
= $\exists x$[animate(x) ∧ say-no-all-the-time(x)] *(8.b after "∃" applied)*