

On wh-questions, wh-relatives, and their kin • Radek Šimík (HU Berlin)

Background Wh-Q(uestion)s and wh-R(elative)s (free or headed) are often considered to be derived from the same semantic core, typically identified as a property (Cooper 83, Jacobson 95, a.o.). Tab. 1 gives the German example *was Max kocht* (lit. ‘what Max cooks’), used as a wh-Q (‘I know...’), F(ree) R(elative) (‘I eat...’), and L(ight-)H(eaded) R(elative) (‘I eat everything...’). All these wh-constructions are supposed to be based on a common representation denoting a property (type $\langle e, st \rangle$), which happens to correspond to the final denotation of (L)HRs, but can get further shifted, namely to a set of propositions (deriving wh-Qs) or to an entity (deriving FRs).

	MATRIX	WH-CLAUSE	BASE DENOTATION	FINAL DENOTATION
Q	Ich weiß			$\{\lambda w[\text{COOK}(w)(x)(\text{MAX})] \mid x \in D_e\}$
FR	Ich esse	was Max kocht	$\lambda x \lambda w[\text{COOK}(w)(x)(\text{MAX})]$	$\lambda w[\sigma x \text{COOK}(w)(x)(\text{MAX})]$
LHR	Ich esse alles			$\lambda x \lambda w[\text{COOK}(w)(x)(\text{MAX})]$

Table 1: Property-based semantics of wh-questions and wh-relatives

This view is supported (i) by the occasional formal identity of these constructions within a language, (ii) by the presence of wh-movement (which is often taken to correspond to lambda-abstraction and hence property-derivation; von Stechow 82), or (iii) the property of maximality which manifests itself as exhaustivity in Qs and definiteness in FRs (Rullmann 95, Jacobson 95).

Proposal I propose that the base denotation shared by wh-Qs and wh-Rs is not a property but the even more “basic” *open proposition*, whereby the wh-word corresponds to a restricted variable (Heim 82, Nishigauchi 86); (1). The two construction types differ in the operation applied to the variable corresponding to the wh-word. In wh-questions, the variable is **F-marked** (Kratzer 91, Beck 06), giving rise to a set of propositions in the focus-semantic value $\llbracket \cdot \rrbracket_f$, supplying the distinguished assignment function h ; (1a). In wh-relatives, the wh-word is **lambda-marked** (marked by the capital Λ) and gets interpreted as a lambda operator binding a restricted variable (Heim & Kratzer 98). This marking is only applicable to wh-words in a moved position; (1b).

- (1) **Base:** $\llbracket \text{Max cooks what}_1 \rrbracket^g = \lambda w[\text{COOK}(w)(g(1))(\text{MAX}) \wedge \text{THING}(g(1))]$
 a. **Q:** $\llbracket \text{Max cooks what}_{\text{F1}} \rrbracket_f^g = \{\lambda w[\text{COOK}(w)(h(1))(\text{MAX})] \wedge \text{THING}(h(1)) \mid h \text{ is a distinguished assignment}\}$
 b. **R:** $\llbracket \text{what}_{\Lambda 1} \text{ Max cooks } t_1 \rrbracket^g = \lambda x \lambda w[\text{COOK}(w)(x)(\text{MAX}) \wedge \text{THING}(x)]$

The proposal predicts that wh-Qs do not require wh-movement, being derived by plain F-marking, but wh-Rs do, because interpreting in-situ wh-words as lambda operators leads to no meaningful result. Tab. 2 shows that the prediction is borne out: wh-in-situ is very common in Qs but almost unattested in HRs (with high likelihood of this holding of FRs, too). The two exceptions noted by de Vries 05 are Hindi and Bambara—both languages having correlativization as the primary relativization strategy, with postnominal wh-in-situ Rs (or what seems like that) being restricted to appositive uses (Lehmann 84). This state of affairs, combined with the fact that there is no real contestant for the classical property-based analysis of Rs (Quine 60, Rodman 72),

	WH-QUESTIONS	(HEADED) WH-RELATIVES
Initial wh	264	32
Non-initial wh	615	2

Table 2: Position of wh-words in questions (Dryer 13) and headed relatives (de Vries 02/05)

supports the present proposal that wh-movement in Rs is genuinely property-deriving. On the other hand, there is no clear crosslinguistic pressure to wh-move in Qs and, at the same time, if wh-movement does take place (overtly or covertly), there are good reasons to believe that it is for reasons other than lambda-abstraction, be it clause-typing (Cheng 91), Q-particle interpretation (Cable 07), prosodic optimization (Richards 10), exhaustive focus licensing (Horvath 13), or avoiding intervention (Kotek 16). This lines up with observations that wh-movement in Qs and Rs differ in many respects (Lasnik & Stowell 91, Rizzi 97). This situation further militates against the existence of covert wh-movement in Rs (i.e., for reasons of lambda-abstraction) but is compatible with covert wh-movement in Qs, although crucially for reasons other than lambda-abstraction.

From wh-questions to wh-relatives I further propose a particular derivational path from wh-Qs to wh-Rs, making predictions about the universals and typology of wh-constructions (suggestive evidence is available, see Tab. 3), but also diachrony and acquisition (subject to future investigation). I argue that the “missing link” between wh-Qs and wh-Rs is exemplified by a family of constructions called here **wh-conditionals**. Wh-conditionals include wh-conditionals “proper” (of the kind attested in Chinese, Cheng & Huang 96), correlatives (Srivastav 91), and unconditionals (Rawlins 13). According to recent analyses (Rawlins 13, Demirok 17, Liu 18), a wh-conditional is a wh-Q with each proposition in its denotation corresponding to a conditional antecedent, whereby the referent introduced by the wh-word may (or must, in correlatives) be picked up by a donkey pronoun in the consequent; (2) (in the spirit of Rawlins 13). I suggest that a wh-conditional can “become” a wh-R if (i) it exhibits wh-movement, which (ii) gets reanalyzed as creating a property, which in turn (iii) gets used as a restrictor of the donkey-anaphoric (E-type) pronoun/determiner in the consequent (cf. Hirsch 16 on ever FRs). The result is essentially a FR (with a novel explanation for why FRs are definite), with further steps needed to derive (L)HRs (to be detailed in the talk).

$$(2) \llbracket \text{Whatever happened, it was shocking} \rrbracket = \llbracket \forall w [\text{HAPPENED}(w)(x) \rightarrow \text{SHOCKING}(w)(x)] \mid x \in D_e \rrbracket$$

The proposal gives rise to the following typological prediction / implicational universal (cf. Tab. 3): L(language)s with wh-Qs are a superset of Ls with wh-conditionals, which in turn are a superset of Ls with (free) wh-Rs (which in turn are a superset of Ls with headed wh-Rs). It also offers a new handle on *Caponigro’s Generalization* (Chierchia & Caponigro 13), whose generalized version says that the set of wh-words used in non-Q constructions is always a subset of those used in Qs.

WH-QUES.	WH-COND.	FREE WH-REL.	HEADED WH-REL.
all Ls	wh-mov. Ls (Germanic, Slavic, Mayan)	wh-mov. Ls (Germanic, Slavic, Mayan)	wh-mov. Ls (Germanic, Slavic, Mayan)
	wh-in-situ Ls (Chinese, Hindi, Turkish)	wh-in-situ Ls	wh-in-situ Ls

Table 3: Examples of languages / language families with(out) the relevant wh-constructions

Selected references: Beck 06. Intervention effects follow from focus interpretation. *NaLS* 14(1):1-56. Chierchia & Caponigro 13. Questions on questions and free relatives. Presented at *SuB 18*. Demirok 17. A compositional semantics for Turkish correlatives. *WCCFL* 34, 159-66. Hirsch 16. A compositional semantics for *wh-ever* free relatives. *SuB* 20, 341-58. Horvath 13. Focus, exhaustivity, and the syntax of wh-interrogatives. *Approaches to Hungarian* 13, 97-132. Kotek 16. Covert partial wh-movement and the nature of derivations. *Glossa* 1(1):25. Kratzer 91. The representation of focus. In *Semantics*, 825-34. Lehmann 84. *Der Relativsatz*. Gunter Narr. Liu 18. *Varieties of alternatives: Focus particles and wh-expressions in Mandarin*. Springer. Rawlins 13. (Un)conditionals. *NaLS* 40(2):111-78. Rodman 72. The proper treatment of relative clauses in a Montague grammar. In *Papers in Montague grammar*. de Vries 05. The fall and rise of universals on relativization. *J of Universal Language* 6(1):125-57.