

Japanese Embedded Questions as Internally Headed Relative Clauses: Evidence from QVE
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QVE in Japanese: Berman (1991) noted that an adverbial expression like *for the most part* can alter the typically exhaustive meaning of an embedded question, as in (1). This Quantificational Variability Effect (QVE) ignited the debate on what kind of semantic object a QVE adverb quantifies over: Individuals (Berman 1991), propositions, i.e., answers to the question, (Lahiri 2002), or sub-questions of the embedded question (Beck and Sharvit 2002). Japanese QVE shows a somewhat unexpected pattern: In addition to English-like adverbials (e.g., *daitai* ‘mostly’), a floated numeral classifier (NC) can also be a QVE adverb, as shown in (2). (This fact was first noted by Kitagawa 2008.) The NC in QVE ‘agrees’ with the embedded Wh-phrase; *-nin* is used for counting people. Although the Japanese data seem to support Berman’s ‘individual’ analysis, the main criticism of his analysis applies to the Japanese case as well. Berman treated wh-phrases as Heimian indefinites, which can be bound by adverbial quantifiers. Therefore, its semantics has no place for interrogative semantics despite the surface syntax that clearly shows the interrogative structure. In this paper, I propose a version of ‘nominal’ analysis that makes use of interrogative syntax and semantics. I argue that (i) embedded questions in Japanese are nominal, (ii) they are nominalized via a process akin to Internally Headed Relative Clauses (IHRCs) (cf. Shimoyama 1999), and (iii) the resulting structure is interpreted as a ‘concealed’ question (see Romero 2006 and references therein). Not surprisingly, concealed questions can appear in the floated NC pattern, as in (3). In this talk, I will focus on the first half of the process; how an embedded question is nominalized and it is mapped to the nominal semantics. [If time permits, I will demonstrate how concealed questions and floated NQs can be combined.]

Evidence for the nominal status of embedded Qs: Although the embedded question marker *ka* and the non-interrogative *to* are both considered C^0 s, the two types of CPs behave differently with respect to the ‘nominal-ness’ tests. (i) Embedded Q-CPs can be case-marked (nominative, accusative, dative) or be with post-positions (e.g., *-yori* ‘than’) whereas non-Q-CPs cannot. (ii) Embedded Q-CPs can be conjoined with NPs but non-Q-CPs cannot. (iii) An embedded Q-CP can optionally be followed by *sono-N* ‘that N’, as witnessed in (4). This last property is indeed shared by the IHRC structure. (5a) shows a proto-typical instance of IHRC, and (5b) a case with an overt ‘that-N’. These facts all point to the nominal nature of Q-CPs and provide the empirical ground for an IHRC analysis of embedded questions.

Analysis: For the syntax and semantics of IHRCs, I follow Shimoyama (1999) and assume that (i) the IHRC structure involves an E-type pronoun, and (ii) the embedded clause in the RC receives the conjunctive semantics. The structure I propose for a sentence with *know* and an embedded Q is shown in (6). Second, the raised Q-CP shifts from the Hamblin denotation to the ‘relevant answerhood’, as proposed by Lahiri (2002), who also had a Q-CP raising component in his analysis. (7) summarizes this process. Third, I propose the answerhood set is existentially closed, and this closure has narrower scope than conjunction. Finally, the missing property for the E-type pronoun is assumed to be (8a). The final product is shown in (8b). It means ‘There are some relevant answers (in case of *know*, true answers) to the question ‘who passed?’, and Mari knows the maximal *x* such that the proposition that *x* passed is a true answer to the question.’ The maximal plural individual becomes the domain for a floated NC in the matrix clause. The extra layer of ‘answerhood’ in the process is crucial in two respects. First, following Lahiri (2002), I assume that ‘answerhood’ is licensed (at least partially) by the lexical property of a question-selecting verb. Thus, a purely question-selecting verb (the *ask/inquire* type) cannot support QVE. This is also true in Japanese. Second, unlike other instances of IHRCs, embedded questions do not freely become nominal. The contrast is highlighted by (9) and (10). In an environment like (9), the required answerhood layer is not provided due to the absence of question-taking predicate like *know*, and the embedded question remains as a Hamblin product. It therefore cannot be turned into an IHRC.

- (1) Maria, for the most part, knows which students passed.
- (2) Mari-wa [CP dare-ga ukat-ta-ka] go-nin-gurai sitte-iru
 Mari-top who-nom pass-past-Q **5-CL-approx** know-prog
 ‘For 5 or so of the people who passed, Mari knows that they passed.’
- (3) Kana-wa Winburudon-no kako-no syoosya-o juu-nin-gurai sitte-iru
 Kana-top Wimbledon’s past winner-acc **10-CL-approx** know
 ‘Kana knows 10 or so of the past Wimbledon champions.’
- (4) Keesatu-wa [CP dare-ga hooseki-o ubatta-ka] **sono han’nin-o** sitte-imasu-ka?
 police-top who-nom jewel-acc stole-Q **that criminal-acc** know-prog-Q
 ‘Lit; Do the police know the criminal, who stole the jewel?’
- (5) a. [CP Mari-ga piza-o reezooko-ni ireteoi-ta] no-o Koji-ga tabete-simatta
 Mari-nom pizza-acc fridge-loc put-past NM-acc Koji-nom ate-perf
 ‘Koji ate the pizza that Mari put in the fridge.’
 b. [CP Mari-ga piza-o reezooko-ni ireteoi-ta] masa-ni **sono-piza-ni** doku-ga haitte-ita
 Mari-nom pizza-acc fridge-loc put-past very that-pizza-loc poison-nom be-past
 ‘The pizza Mari put in the fridge, the very same pizza had poison in it!’
- (6)
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 IP
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 CP IP
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dare-ga ukatta-ka Mari-wa [DptCP [NP e1 <e,t>] Det (+def)] sitte-iru
who-nom passed-Q Mari-top know-prog

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- (7) a. p is an answer to Q (i.e., Ans(p, Q)) iff  $\exists S \in \text{Pow}(Q) [p = \cap S]$  (from Lahiri 2002, p.69)  
 b. The meaning of raised Q =  $\lambda p. [\text{Ans}(p, Q) \ \& \ C(p)]$  where ‘C(p)’ means p is relevant.
- (8) Let  $g := [1 \rightarrow \lambda x. \text{Ans}(x \text{ passed}, \{q: \exists x \ \& \ q = x \text{ passed}\}) \ \& \ C(x \text{ passed})]$   
 $\llbracket (6) \rrbracket^g = \exists p. [\text{Ans}(p, \{q: \exists x \ \& \ q = x \text{ passed}\}) \ \& \ C(p)] \ \& \text{Mari knows } \sigma x. \text{Ans}(x \text{ passed}, \{q: \exists x \ \& \ q = x \text{ passed}\}) \ \& \ C(x \text{ passed})]$
- (9) \*[CP Mari-ganani-o reezooko-ni irete-oita-ka]-( $\emptyset_{\text{NM}}$ )-ga nakunatte-ita  
 Mari-nom what-acc fridge-loc put-perf-Q-(NM)-nom disappear-was  
 ‘Intended: The stuff Mari put in the fridge has disappeared.’
- (10) [CP Mari-ga natto-o reezooko-ni irete-oita]-no-ga nakunatte-ita  
 Mari-nom natto-acc fridge-loc put-perf-NM-nom disappear-finish  
 ‘Mari put natto in the fridge, and that natto has disappeared.’

#### Partial References:

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