Predicates of relevance and theories of question embedding

Patrick D. Elliott[1], Nathan Klinedinst[1], Yasutada Sudo[1] and Wataru Uegaki[2]
[1]University College London and [2]Keio University/Institut Jean-Nicod/JSPS

Lahiri (2002) classifies question embedding predicates into two major types, *rogative* and *responsive predicates.* Rogative predicates like *wonder* are only compatible with interrogative complements, while responsive predicates like *know* are also compatible with declarative complements.

The traditional view on question embedding holds that responsive predicates semantically always select for propositions and that both declarative and interrogative complements to them denote propositions (Karttunen 1977, Groenendijk & Stokhof 1984, Heim 1994, Dayal 1996, Lahiri 2002, Spector & Egré 2015). Uegaki (2015) proposes an alternative approach where responsive predicates semantically always select for question denotations, i.e. sets of propositions, and declarative complements to them are type-lifted to meet this selectional requirement (see also Roelofsen et al. 2015).

We claim that predicates of relevance (PoRs), e.g. *matter, care, relevant,* favor the alternative approach over the traditional approach. PoRs are compatible with both declarative and interrogative complements:

(1)   a.   It matters to John which girl left.
        b.   It matters to John that Mary left.

Notice that (1b) presupposes that the complement clause is true, and that John knows it. In contrast, (1a) does not presuppose that John believes any answer to the embedded question. This difference between (1a) and (1b) is hard to capture under the traditional approach. It would analyze (1a) as meaning it matters to John that p, where p is an answer to the embedded question. Then, whether p is a weakly or strongly exhaustive answer, (1a) is wrongly predicted to presuppose that John believes p.

Thus, the embedded question in (1a) is not reducible to an answer to it. On the other hand, if PoRs are grouped with rogative predicates, the possibility of declarative embedding will call for an independent explanation. But it would be undesirable to postulate two independent lexical entries for (1a) and (1b).

The alternative approach offers a better account of PoRs. According to Uegaki, for example, responsive predicates like *know* always embed questions, which are taken to denote sets of possible answers, and combine with a declarative complement using the type-lifter $ID := \lambda p_{st}.\{p\}$.

(3) $[\![know]\!]^w = \lambda Q_{<st,t>}.\lambda x_e: \exists p \in Q[p(w)]. \forall p \in Q[p(w) \longrightarrow \textbf{believe}_w(x,p)]$

We propose that the alternative framework gives a natural account of *matter* as a (type of) rogative predicate.

(4) $[\![matter]\!]^w = \lambda Q_{<st,t>}.\lambda x_e: \exists p \in Q[p(w)] \ \& \ \textbf{believe}_w(x,\lambda w'_s.\exists p \in Q[p(w')]). \ \textbf{matter}_w(x,Q)$

With a declarative complement, Q will be a singleton, which accounts for the presuppositions of (1b), thereby achieving a uniform analysis of (1). As for rogative verbs like *wonder,* the traditional view explains their inability to embed declaratives, by simply assuming they semantically select for questions. The alternative view, too, can explain this as matter of lexical semantics, but a more fine-grained one: the meaning of *wonder* -- but not *matter* -- is incompatible with singleton (i.e. resolved) questions. (See Uegaki 2015 for a specific proposal).

In sum, the alternative approach can treat PoRs as a new class of 'semantically rogative' predicates, which express relations that are irreducibly between individuals and questions, but still take declarative complements. Such predicates cannot exist under the traditional approach.

(503 words)

References

Dayal, Veneeta (1996) *Locality in WH Quantification: Questions and Relative Clauses in Hindi.* Dordrecht: Kluwer.

Groenendijk, Jeroen & Martin Stokhof (1984) *Studies on the Semantics of Questions and the Pragmatics of Answers.* Ph.D. dissertation, Universiteit van Amsterdam.

Heim, Irene (1994) Interrogative semantics and Karttunen's semantics for *know.* In *Proceedings of IATL 1*. 183–221.

Karttunen, Lauri (1977) Syntax and semantics of questions. *Linguistics and Philosophy,* 1(1): 3–44.

Lahiri, Utpal (2002) *Questions and Answers in Embedded Contexts.* Oxford: Oxford University Press.

Roelofsen, Floris, Nadine Theiler & Maria Aloni (2015) Embedded interrogatives: the role of false answers. Paper presented at the Workshop on Questions in Discourse.

Spector, Benjamin & Paul Egré (2015) A uniform semantics for embedded interrogatives: *An* answer, not necessarily *the* answer. *Synthese,* 192: 1729–1784.

Uegaki, Wataru (2015) *Interpreting Questions under Attitudes.* Ph.D. dissertation, MIT.

Uegaki, Wataru (to appear) Content nouns and the semantics of question-embedding. To appear in *Journal of Semantics.*