Question-Embedding and Factivity (abstract)

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(IHPST, Institut Jean-Nicod)

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Abstract. In English a verb like *know* can take both declarative and interrogative complements. By contrast, a verb like *believe* takes only declarative complements, and symmetrically, a verb like *wonder* takes only interrogative complements. Thus, one cannot say :

(1)   *John wonders that Mary came

(2)   *John believes whether Mary came

These contrasts are robust across languages, and substantial work has been devoted to the comparative treatment of verbs of the *know* kind and verbs of the *wonder* kind, both in the early literature on questions (Groenendijk and Stokhof 1982), and more recently in relation to the phenomenon known as quantificational variability (Berman 1991, Sharvit & Beck 2001, Lahiri 2002). There has been less discussion, in comparison, of the failure of a verb like *believe* to take interrogative complements. A basic intuition, which I call the *factivity hypothesis*, suggests that the lack of factivity of *believe* may explain its failure to embed questions, by contrast to the case of *know*, which is factive and licences questions. This suggests an empirical generalization, namely that the only verbs which take both declarative and interrogative complements are the factive verbs. In this paper, my aim is to defend the factivity hypothesis, and to show that it is empirically adequate, provided the notion of factivity is sufficiently refined.

Indeed the generalization faces both a foundational and an empirical problem. At the empirical level, the data suggest that factivity is neither necessary nor sufficient for a verb that takes declarative complements to take questions. Thus a verb like *regret*, in English, is considered factive, but does not embed questions (Lahiri 2002) :

(3)   *Peter regrets whether Mary came / *who came

Conversely, a verb like *tell*, which is considered non-factive with regard to its declarative complements, can nevertheless embed questions. At the foundational level, on the other hand, the problem is to explain the alleged correlation between factiveness and questions. Thus a version of the factivity hypothesis is formulated implicitly in Ginzurg 1995, who suggests that the difference of embedding behavior between *believe* and *know* can be traced to an ambiguity in 'that'-clauses. On this view, a verb like *know* takes facts in its denotation, while a verb like *believe* takes only propositions. Facts are assumed to be irreducible to true propositions, and Ginzburg postulates that a question, unlike a fact, cannot be coerced to a proposition. Although the intuitions underlying Ginzburg's account seem correct, his account remains essentially stipulative, and it does not explain why *regret*, which presumably takes facts in its denotation, fails to embed questions.

I deal with the foundational and empirical issues in turn. In the first part of the paper, I suggest to use the framework of Groenendijk and Stokhof's intensional theory of questions. A question is defined by Groenendijk and Stokhof as a variable or index-dependent proposition, whose value is determined directly by the context. Thus, to know whether p is to know that p if p is true, and that not p if p is false. It is easy to show that if a predicate is factive, then whenever it embeds a proposition, this proposition thereby corresponds to the (*extension* of) the question corresponding to that proposition. Like *believe*, *know* takes

a proposition in its denotation, but this proposition is an index-dependent proposition, which can be type-shifted to (the *intension* of) the corresponding question. Thus one can explain that *know* and *believe* do not have exactly the same kind of complement, without postulating a difference between facts and true propositions.

The second part of the paper addresses the problems of *regret* and *tell*. *Tell* may not be a real objection to the generalization under discussion, since it is generally admitted that this verb becomes factive with respect to its interrogative complements : one cannot say "John told who came" if he gave a false information as to who came. In the case of *regret*, I claim that this verb is not genuinely factive. Thus, one can consistently say :

(4) Peter wrongly believes that Mary is getting married, and he regrets that she does not stay single.

The real presupposition of "x regrets that p", as suggested by Schlenker (2004), seems to be "x believes that p", and not "x knows that p" or "p". Thus, although *regret* takes a true proposition as object in most cases, this proposition is not an index-dependent proposition in the sense of Groenendijk and Stokhof, and therefore does not licence questions.

Further indication that *regret* patterns like *believe* rather than *know* can be seen from the mood behavior of *savoir*, *croire*, and *regretter* in French. In French, the complement of a verb like *regretter* has to be in the subjunctive mood, as is the case more generally of optative predicates :

(5) Pierre regrette que Marie s'en aille
Pierre regrets that Marie leave$_{SUBJ,\ 3rd-sg}$

(6) *Pierre regrette que Marie s'en va
Pierre regrets that Marie leave$_{IND,\ 3rd-sg}$

Conversely, factive verbs which are question-taking, like *savoir*, or *découvrir*, require the indicative mood even when negated, as in (7), (8) :

(7) *Pierre sait que Marie soit venue
Pierre knows that Marie be$_{SUBJ,\ 3rd-sg}$ come over

(8) *Pierre ne sait pas que Marie soit venue
Pierre does not know that Marie be$_{SUBJ,\ 3rd-sg}$ come over

Interestingly, a verb like *se souvenir*, which is factive with the indicative mood, loses its presupposition when negated and followed by the subjunctive, as shown by the contrast :

(9) Pierre ne se souvient pas que Marie est venue ($\Rightarrow$ Marie est venue)
Pierre does not remember that Marie be$_{IND,\ 3rd-sg}$ come over

(10) Pierre ne se souvient pas que Marie soit venue ($\nRightarrow$ Marie est venue)
Pierre does not remember that Marie be$_{SUBJ,\ 3rd-sg}$ come over

An analogous contrast, although attenuated, can be observed with *croire*, which also licenses the subjunctive under negation :

(11) Pierre ne croit pas que Marie est venue
Pierre does not believe that Marie be$_{IND,\ 3rd-sg}$ come over

(12) Pierre ne croit pas que Marie soit venue
Pierre does not believe that Marie be$_{SUBJ,\ 3rd-sg}$ come over

With respect to French, one may define as *factive indicative* a verb which is factive when its embedded clause is in the indicative, but which loses its presupposition when the embedded clause can be in the subjunctive. *Se souvenir*, like *savoir*, are thus factive indicative, contrary to *regretter*. A generalization about French seems to be that the verbs

which take both declarative and interrogative complements are exactly the factive indicative verbs. If it is correct, this generalization suggests a deeper connection between mood and the question-taking behavior of attitude verbs.

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