

Weak-Exhaustivity: A Pragmatic Account

1. THE PUZZLE.

Question embedding predicates (QEPs) come in two separate groups depending on whether or not they support a strongly exhaustive reading (in (1)). Among those that allow (or require) it we find verbs like *know*, *find out*, etc., which can also embed propositions as well as verbs like *wonder*, *ask*, etc, which can't. Among the predicates that cannot embed strongly exhaustive questions (see (2)) we only find verbs like *surprise* and *realize* (Berman 1991, Heim 1994, Sharvit 2002), which can also embed propositions, but no counterparts of the *wonder* class.

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| <p>(1) Ann knows who called.
Bill didn't call.
=> Ann knows that Bill didn't call.</p> | <p>(2) It surprised Ann who called.
Bill didn't call, all the others did.
=/=> Ann expected Bill to call.</p> |
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Heim 1994 locates this difference in the lexical semantics of different QEPs: univocally weakly exhaustive QEPs (wk-QEPs henceforth) can refer only to ANS1 while the other QEPs can also refer to ANS2 (see 3)):

- (3) Let Q be a Karttunen-style intension of a question
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| $\text{Ans1}(Q)(w) = \bigcap \{p: p \in Q(w) \ \& \ w \in Q\}$ | => | Weakly exhaustive (Ans-wk) |
| $\text{Ans2}(Q)(w) = \{w': \text{Ans1}(Q)(w) = \text{Ans1}(Q)(w')\}$ | => | Strongly exhaustive (Ans-str) |

This analysis misses two important generalizations: 1. All wk-QEPs come also in a proposition embedding incarnation and 2. All and only wk-QEPs generally disallow *whether*-complements (Lahiri 1991, Guerzoni 2003, Guerzoni & Sharvit 2006):

- (4) **It surprised Mary (/Mary predicted/realized) whether Bill came (/would come).*

In fact since $\text{Ans1}(Q) = \text{Ans2}(Q)$ when Q is a yes/no question, the absence of a lexical entry referring to ANS2 cannot *per se* block *whether*-complements.

2. A PRAGMATIC ACCOUNT.

Our account builds on Guerzoni&Sharvit (2006)'s observation that wk-QEPs like some other QEPs (e.g. *know* and *find out*), are "subject-factive", but unlike *know* and *find out* they are also "speaker-factive:" that is, while both the *surprise/ realize* class and the *know/find out* class presuppose that the attitude holder believes the complete true answer to the embedded question, only the *surprise/ realize* class also presupposes that at the utterance time also the speaker knows it (see (5), from Guerzoni&Sharvit 2006):

- (5) *John just had a phone call from Mary. I am sure that...*
 a. *he found out who was at the party. Tomorrow, when we meet I will learn that too.*
 b. # *...he realized who was at the party. Tomorrow, when we meet I will learn that too*

We propose that due to "speaker factivity", the strong exhaustive reading of a sentence involving a wk-QEP (like (6)a) is always pragmatically blocked by the corresponding sentence involving the proposition embedding variant of the predicate and the complete true answer (like (6)b).

- (6) *Scenario: Mary and Bill were at the party under discussion, and nobody else was.*
 a. *It surprised John who was at the party.*
 b. *It surprised John that Mary and Bill and nobody else were at the party.*

To see why let us consider their presuppositions (to be in (8) and (7) respectively)

Speaker and addressee mutually share the belief that:

- (7) (i) the speaker believes the complete **strongly** exhaustive answer to the question *who was at the party* to be true
 (ii) John believes the complete **strongly** exhaustive answer to the question *who was at the party* to be true
- (8) (i) Mary and Bill and nobody else was at the party.
 (ii) John believes that Mary and Bill and nobody else was at the party

In the given scenario presupposing (8)i entails presupposing (7)i, but not *vice versa*, and presupposing (8)ii amounts to presupposing (7)ii, but not *vice versa*. Since in all cases where the

question embedding variant is true, the proposition embedding variant with the true exhaustive complete answer as a complement is also true, and their presuppositions will always be in the relation described above, the latter will systematically block the former on the basis of a pragmatic principle that requires one to “maximize presupposition” whenever they are satisfied (see Heim (1991)).

Exactly the same blocking effect is what excludes *whether*-complements under wk-QEPs:

- (9) Assume that Mary did come to the party.
a. # *It surprised John whether Mary came to the party.*
b. *It surprised John that Mary came to the party.*

(9)b presupposes that Mary came to the party and John knows that. This amounts to presupposing the true complete answer to the question *whether Mary came to the party* and to presupposing that John knows that answer to that question. Moreover every time the question embedding variant is true, the proposition embedding variant whose complement is the true answer (be it the yes or no answer) is also true and felicitous. “Maximize-Presupposition” will therefore systematically block the question embedding variant.

What makes the weak exhaustive reading available for wk-QEP with *wh*-complements is that when this reading is true, the presupposition of the proposition embedding variant is not necessarily satisfied, regardless of whether its complement is the strongly exhaustive or weakly exhaustive answer. Here is why. In its weakly exhaustive reading (6)a carries the following presuppositions:

- (10) (i) The speaker believes the complete **weakly** exhaustive answer to the question *who was at the party* to be true
(ii) John believes the complete **weakly** exhaustive answer to the question *who was at the party* to be true

Unlike (7), (10) is compatible with a situation in which the speaker or John mistakenly believe that, say, Susan came to the party, although she didn't. Given this if the speaker had to chose the proposition embedding variant of *surprise*, (s)he would have uttered (11):

- (11) *It surprised John that Mary, Bill and Susan.*

However, (11) would be infelicitous in the given scenario, since either one of its presuppositions (in 12)) is false:

- (12) (i) Mary, Bill, and Susan were at the party.
(ii) John believes that Mary, Bill, and Susan (and nobody else) was at the party.

Finally, due to the absence of “speaker-factivity”, sentences involving QEPs like *know* and *find out* allow a strongly exhaustive reading. This is because this reading can be felicitous and true in cases where the speaker is unaware of the complete strongly exhaustive answer and therefore not in the position to utter the proposition embedding variant of the sentence.

3. FURTHER PREDICTION

Since the lack of a strongly exhaustive reading depends on the availability of a proposition complement corresponding to the strongly exhaustive answer, our account directly predicts that there cannot be weakly exhaustive question embedding predicates of the *wonder*-type, which don't have a proposition embedding variant.

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