

Decomposing universal projection in questions

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Intro. Wh-questions of the form $[[wh\ R] S_p]$, where R restricts the wh-word and S is an open proposition in its scope with presupposition p have been argued to give rise to universal projection (UP) of p , that is, to the presupposition that p holds for all the individuals given by R ([6], [1]). As evidence for universal projection, [1] reports that (1) (with factive *regret*), presupposes that *Bill invited each of these ten people*. (2) and (3) make the same point if (2) carries the (factive) presupposition that *each of the team members scored a goal* and if (3) carries the presupposition (triggered by the reflexive’s gender feature) that *every member is female*.

- (1) Who among [these ten people] does Mary regret that Bill invited?
- (2) Which of [the team members] does Fred know scored a goal?
- (3) Which [member] nominated herself?

But UP in questions is volatile, i.e. often unattested. To capture this volatility, we propose to derive UP from three violable pragmatic conditions on question use: (i) a condition militating against presupposition accommodation (“no accommodation”); (ii) a condition militating against inclusion in the wh-restrictor individuals known not to have the presuppositional property (“restrictor economy”); (iii) pressure to limit the members of the restrictor set to the individuals whose membership is settled by the context set (“restrictor homogeneity”).

Volatility. UP in $[[wh\ R] S_p]$ can be characterized as yielding the proposition in (4), where \mathbf{R} and \mathbf{P} are the properties given by R and p , respectively.

$$(4) \{w: \forall x[\mathbf{R}(x)(w) \rightarrow \mathbf{P}(x)(w)]\} \quad \text{UP}$$

So we expect $[[wh\ R] S_p]$ to call for a context set (in Stalnaker’s sense) entailing that all the individuals in the restrictor have the presuppositional property. Below we consider three family of scenarios where this requirement seems to be lifted.

Scenario 1. Suppose regarding (1) that the interlocutors agree, hence that the context set entails, that the members are Alex, Berti, and Chris. And suppose that the speaker’s beliefs (and hence the interlocutors’ common beliefs) do not actually settle the sex of any of Alex, Berti, and Chris, hence fail to entail that Alex is female, and likewise for Berti and Chris; and suppose also that the listener is aware of this gap in the speaker’s knowledge. In this scenario, the context set does not satisfy the presupposition that x is female for any of the three individuals in the extension of the wh-restrictor R . We take it that in such a scenario, the question (3) is still usable for the speaker, and clearly will not be judged deficient by either the speaker or the listener. The question may be used, for example, as a reply to the listener’s statement that some female member nominated herself. The usability of the question in our scenario is in fact unsurprising, given the familiar phenomenon of (global) presupposition accommodation (e.g. [2]). Despite the lack of prior knowledge of Alex’s sex, for example, the speaker could interpret the answer *Alex nominated herself* upon accommodating the presupposition that Alex is female.

We assume, however, that forcing presupposition accommodation in this way is a pragmatically dispreferred strategy (“Don’t mark something you know not to be known to your interlocutor as known”). This is supported by the fact that the limit cases, where an answer as a whole is given in the form of presupposition that needs to be accommodated, are judged as markedly deviant, as the following exchange from [8, p.319] illustrates.

- (5) a. Q: Are there any boys in your class?
- b. A: #I (don’t) like the boys in my class.

We therefore propose a “no accommodation” condition on question felicity in (6). Here Q is a Hamblin/Karttunen (H/K) question intension, and $c \succ Q$ indicates that use of a question with intension Q is felicitous relative to context set c .

$$(6) c \succ Q \text{ only if } \forall p[c \subseteq \{w: p \in Q(w)\} \rightarrow c \subseteq \text{dom}(p) \vee c \cap \text{dom}(p) = \emptyset] \quad \text{NO ACCOMMODATION CONDITION}$$

(6) states that for every proposition p that is presupposed to be an element of the question extension, the context set should entail the presupposition of p (so that p will not require accommodation if offered as a H/K answer) or should be incompatible with that presupposition (excluding p as a H/K answer that might be offered). This condition is violable, given the plausibility of the *Scenario 1*.

Scenario 2. Consider now with regard to (2) a scenario where it is part of the interlocutors common knowledge that only ten out of eleven team members scored. We consider (2) to be plausible in such a scenario. Obviously, UP does not hold in this case since only ten out of eleven individuals with the restrictor property (team members) are entailed by the context set to have scored. Such configurations are not always as innocent though, since the following discourse is markedly deviant.

- (7) a. Of Ann, Bill, and Chris, only Ann and Bill passed the final exam.
 b. #Which of those three students does Fred know passed the final?

It seems rationale for a cooperative speaker to exclude from the question extension any propositions that are already known not be true, in virtue of having presuppositions that are already known to be false, such as that *Chris passed the exam* (or “Do not include in question’s extension answers you know not to be true”). We capture this effect with the “restrictor economy” condition below. (Cf. proposal in [7] that in reconstructing the question under discussion in the sense of [5], speakers exclude answers that the interlocutors already know to be false).

$$(8) \ c \succ Q \text{ only if } \forall p [c \subseteq \{w: p \in Q(w)\} \rightarrow c \cap \text{dom}(p) \neq \emptyset] \quad \text{RESTRICTOR ECONOMY CONDITION}$$

Arguably the extent to which violation of this condition is perceived as deviant depends on how easy it would have been to avoid a violation. In the case of (2), the violation is perceived as benign since it presumably allows the speaker to use a more economical structure instead of a more pedantic, but also a more verbose one: *Which of the team members excluding Alan (who didn’t score) does Fred know scored a goal?* (cf. [3]’s proposal that syntactic complexity constrains the set of alternatives that pragmatic reasoning refers to). In the case of (7b) there is a structurally identical non-violating alternative: *Which of those two students does Fred know passed the final?*

Scenario 3. In (9), UP does not seem to hold. We propose that this is because the context set does not settle the identities of the individuals in the restrictor set. If so, no H/K answer p meets the condition $c \subseteq \{w: p \in Q(w)\}$. Hence (6) and (8) correctly fail to derive UP.

- (9) a. Whom do you regret never having seen in person?
 b. Well, Freddie Mercury, Barack Obama, my little niece in London, and some others.

In some cases, there appears to be stronger pressure to agree on the restrictor set members, witness the oddness of the question in (10) if followed by a remark about speaker’s ignorance as to the composition of the restrictor (cf. [4]’s notion of *D-linking* with *which*-questions.)

- (10) #Which girl in group A does John know scored? I have no idea who is in group A.

This leads us to postulate the following felicity condition requiring, in effect, that wh-restrictor set membership be fixed by the context set, or, in other words, that the restrictor set be homogeneous across context set worlds.

$$(11) \ c \succ Q \text{ only if } \forall w, w' \in c [Q(w) = Q(w')] \quad \text{RESTRICTOR HOMOGENEITY CONDITION}$$

Having established the three (violable) felicity conditions on questions above, notice that when respected, they derive UP, which we restate below:

$$(12) \ \forall p [c \subseteq \{w: p \in Q(w)\} \rightarrow c \subseteq \text{dom}(p) \ \& \ c \cap \text{dom}(p) \neq \emptyset] \quad \text{UNIVERSAL PROJECTION (DERIVED)}$$

Conclusions. We have proposed to analyze UP in questions as a derived effect which arises when three independently attested violable felicity conditions on questions are met, which accounts for the volatility of the effect. A potential extension of this decompositional account onto a parallel effect in declaratives remains to be explored.

Bibliography. [1] Abrusán, M. 2011. Presuppositional and negative islands. NLS 19. [2] von Stechow, P. 2008. What is presupposition accommodation, again? *Philosophical Perspectives* 22. [3] Katzir, R. 2007. Structurally-defined alternatives. L&Ph 30. [4] Pesetsky, D. 1987. Wh-in-situ. [5] Roberts, C. 1996/2012. Information structure in discourse. S&P 5. [6] Schlenker, Ph. 2008. Presupposition projection. TL 34 [7] Simons, M., D. Beaver, C. Roberts & J. Tonhauser. 2016. The best question. *Discourse Processes* 0. [8] Simons, M., J. Tonhauser, D. Beaver & C. Roberts. 2011. What projects and why. In *Proceedings of SALT*.