ON THE EVIDENCE CONDITION OF YES/NO QUESTIONS IN ENGLISH

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Observations

Standard analyses of questions, based on Hamblin (1958, 1973), identify the meaning of $?p$, the yes/no question whose possible answers are p and $W\backslash p$, with the set $\{p, W\backslash p\}$. It has been pointed out that this approach fails to capture the differences between the various "wordings" of $?p$ in terms of their felicity conditions (cf. Ladd 1981, Büring and Gunlogson 2000, Gunlogson 2003, Romero and Han 2004, Rooy and Safarova 2003, Safarova 2005, Truckenbrodt 2006, Krifka 2012, Sudo 2013). This paper is concerned with one of these felicity conditions. Specifically, it proposes an account for the "evidence condition" of yes/no questions (cf. Büring and Gunlogson 2000), i.e. an account for how the presence of contextual evidence with respect to p or $W\backslash p$ determines which morpho-syntactic variants of $\{p, W\backslash p\}$ are felicitous. As an illustration, consider the two expressions in (1).

(1) a. Is John married? b. Is John single?

According to the standard analysis, both express one and the same question which is (2).

(2) $\{\{w \mid \text{John is married in } w\}, W\backslash\{w \mid \text{John is married in } w\}\}$

However, it is clear that these expressions are not interchangeable in all contexts of use. Suppose, for example, that the speaker sees John wearing a wedding ring. She can then ask (1a), say to "double check" or express surprise at what she sees, but it would be quite strange for her to ask (1b), for whatever purpose. Note that the contrast persists in a situation where the evidence is less direct, for example where the speaker hears someone say "John is picking up his wife from the airport." The conclusion, then, is that (1a) is felicitous, while (1b) is not, in contexts where there is evidence, direct or indirect, that John is married. This difference, it turns out, exists not only between (1a) and (1b) but also between many other pairs of expressions. Thus, we can observe that every sentence in (3a), but no sentence in (3b), is felicitous in a context where there is evidence that John is married, even though all sentences in (3) express the question in (2).

(3) Context: the speaker hears someone say "John is picking up his wife"
   a. Is John married? / Is John not single? / Isn't John single? / John is married? / John is not single? / John isn't single?
   b. #Is John single? / #Is John not married? / #Isn't John married? / #John is single? / #John is not married? / #John isn't married?

Let us call the proposition denoted by the declarative sentence underlying a yes/no question (i.e. the TP constituent) the "prejacent" of the question and formulate the following generalization.

(4) Biased Context Generalization (BCG): A sentence expressing the yes/no question $\{p, W\backslash p\}$ is infelicitous if the prejacent of the question is $W\backslash p$ and there is contextual evidence for p

Now consider a "neutral context," one in which the speaker has no evidence as to whether John is married or single. It seems that in such a context, a natural way to make an inquiry about John's marital status is to ask one of the questions in (5a). The questions in (5b), on the other hand, would be quite unnatural in this case.

(5) Context: the speaker has no evidence about John's marital status
   a. Is John married? / Is John single?
   b. #Is John not married? / #Is John not single? / #Isn't John married? / #Isn't John single? / #John is married? / #John is single? #John is not married? / #John is not single? #John isn't married? / #John isn't single?

We can thus formulate another generalization about the evidence condition of yes/no questions.

(6) Neutral Context Generalization (NCG): In contexts where there is neither evidence for p nor evidence for $W\backslash p$, a sentence expressing the question $\{p, W\backslash p\}$ is only felicitous if it (i) shows subject auxiliary inversion and (ii) contains no negation

Deriving the two generalizations

1. Following many works, we assume that yes/no questions are headed by "question morpheme" Q denoting the function '$\lambda p.\{p, W\backslash p\}$' which maps a proposition to the set containing it and its negation (cf. Katz and Postal 1964, Baker 1970, Karttunen 1977). We propose that the English lexicon contains a silent evidential marker E whose semantics is purely presuppositional: $[\![\text{E}]\!]^c(p) = p$ if there is evidence for p in c (i.e. if $\text{K}_c \subseteq p$), undefined otherwise. Thus, E presupposes what epistemic *must* asserts (cf. Fintel and Gillies 2010). We assume that both Q and E are heads in the C domain, and hence that the structure of a yes/no question is either [$_{\text{CP}}$ Q [$_{\text{CP}}$ E TP]] or [$_{\text{CP}}$ Q TP]. The BCG can then be derived from the preference rule in (7) which we claim can be made to follow from Heim's (1991) principle of Maximize Presupposition (cf. Singh 2011).

(7) E-Rule: Expression ϕ is infelicitous in context c if there is another expression ψ such that (i) $[\![\psi]\!]^c = [\![\phi]\!]^c$ and (ii) ψ contains E but ϕ does not

Proof of the BCG: Let c be a context where there is evidence that p is true and ϕ be a sentence expressing the question $\{p, W\backslash p\}$ whose prejacent is $W\backslash p$. Thus, ϕ would be either [Q TP] or [Q [E TP]] with $[\![\text{TP}]\!]^c = W\backslash p$. Suppose ϕ = [Q TP]. Then there is an alternative expression ψ = [Q [E TP′]] with $[\![\text{TP}']\!]^c = p$ such that (i) $[\![\psi]\!]^c = [\![\phi]\!]^c = \{p, W\backslash p\}$ and (ii) ψ contains E but ϕ does not. Hence, ϕ is infelicitous in c by virtue of the E-Rule. Suppose ϕ = [Q [E TP]]. Then ϕ is infelicitous in c as well, as it presupposes, by virtue of the definition of E, that there is contextual evidence for $W\backslash p$, and consequently constitutes a presupposition failure. □

2. To derive the NCG, we assume that Q triggers head-movement (cf. Chomsky 1981). In addition, we propose the preference rule in (8) which concerns the use of negation and which we claim can be made to follow from Grice's Maxim of Manner (cf. Katzir 2007). We write "LEX(α)" to refer to the set of lexical items contained in α.

(8) Neg-Rule: Expression ϕ is infelicitous in context c if there is another expression ψ such that (i) $[\![\psi]\!]^c = [\![\phi]\!]^c$ and (ii) LEX(ψ) = LEX(ϕ)$\backslash\{$Neg$\}$

Proof of the NCG: Let c be a context where there is evidence for neither p nor $W\backslash p$, and let ϕ be a sentence expressing the question $\{p, W\backslash p\}$. Suppose ϕ does not exhibit subject auxiliary inversion. Then ϕ must contain E which itself moves to Q and which blocks T-to-C movement by virtue of Travis's (1984) Head Movement Constraint. But then ϕ will give rise to presupposition failure due to the presence of E and hence be infelicitous in c. Suppose ϕ contains negation, i.e. ϕ = [$_{\text{CP}}$ Q [$_{\text{TP}}$ Subject Neg VP]]. Then there is an alternative ψ = [$_{\text{CP}}$ Q [$_{\text{TP}}$ Subject VP]] such that (i) $[\![\psi]\!]^c = [\![\phi]\!]^c$ and (ii) LEX(ψ) = LEX(ϕ)$\backslash\{$Neg$\}$, and ϕ is infelicitous in c by virtue of the Neg-Rule. □

Other issues

1. Note that yes/no questions exhibiting subject auxiliary inversion can also be used in a biased context, i.e. in a context where there is evidence for one of the two answers to the question (cf. Gunlogson 2003 and the discussion above). To predict this, we need to assume that E can trigger head-movement. Concretely, we say that E comes in two varieties, affixal ($\text{E}_{[+\text{af}]}$) and non-affixal ($\text{E}_{[-\text{af}]}$), and is thus somewhat similar to T in English (cf. Lasnik 2000). Given this assumption, a yes/no question can involve T-to-E followed by E-to-C movement. What is crucial is that a yes/no question without subject auxiliary inversion must contain E, specifically $\text{E}_{[-\text{af}]}$. In addition, our account presupposes that heads are all interpreted at their base position, which means we assume that head movement has no semantic effect, probably because it is a PF-operation (cf. Chomsky 2001, Boeckx and Stjepanović 2001, Schoorlemmer and Temmerman 2012).

2. It is claimed in Büring and Gunlogson (2000) and Roelofsen et al. (2013) that yes/no questions of the form [AUX'nt ϕ], for example **isn't John married**, can be used in a neutral context, i.e. one where the speaker has no evidence for any of the answers to the question. This claim is not compatible with our account, and we believe it is empirically incorrect. We argue that the examples on which the above mentioned authors base their claim are open to another interpretation in which they actually constitute supporting evidence for our theory. Due to lack of space, we will have to leave the presentation of our argument for the talk.

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