Preposed negation questions with strong NPIs

Sunwoo Jeong
Department of Linguistics, Stanford University

Introduction Polar interrogatives (PQs) with preposed negation (henceforth PNQs) convey positive speaker epistemic bias (Romero and Han 2004, Sudo 2013, Domaneschi et al. 2017, Goodhue 2018), as in (1a). In contrast, PQs with strong NPIs such as (prosodically stressed) *ANYTHING* or *lift a finger* (henceforth SNPI-Qs) convey negative speaker epistemic bias and have a rhetorical flavor (Borkin 1971, Krifka 1995, Guerzoni 2004), as in (1b). Given this, one might expect preposed negation and strong NPIs to *not* be able to co-occur in PQs, as they would end up signaling two contradictory biases. However, such a combination (henceforth SNPI-NPQs) is perfectly felicitous, as exemplified in (1c).

(1) a. *Didn't Mr. Tansley bring food?* PNQs
$\rightsquigarrow$ *Sp* believes/ed that Mr. Tansley likely brought food.
b. *Did Mr. Tansley bring ANYTHING (at all)?* SNPI-Qs
$\rightsquigarrow$ *Sp* believes/ed that Mr. Tansley likely did *not* bring food.
c. *Didn't Mr. Tansley bring ANYTHING (at all)?* SNPI-PNQs

Van Rooy (2003) and Asher and Reese (2005) suggest that SNPI-PNQs convey the same kind of negative bias as SNPI-Qs. We argue that SNPI-PNQs are in fact associated with more complex, dual dimensions of biases, originating from SNPIs on the one hand and preposed negation on the other. To capture these new observations, we propose a compositional analysis based on Romero and Han (2004) and van Rooy (2003). The emerging discussion supports a *non*-scopal analysis of *even*-type presuppositions (Kay 1990, van Rooy 2003) over scopal ones (Karttunen and Peters 1979, Wilkinson 1996, Guerzoni 2004).

Empirical observations We claim that SNPI-PNQs are more restricted in their distributions than simple PNQs and simple SNPI-Qs. First, as shown in (2), SNPI-PNQs are infelicitous in certain contexts that license simple PNQs. For the SNPI-PNQ in (2b) to be felicitous, the following negative information should have been established in the preceding context: Mr. Tansley did *not* bring something significant. Simple PNQs are not subject to such a constraint (cf. Ladd 1981, Romero and Han 2004).

(2) Context: Cam tells Prue that most of the guests forgot to bring food to the potluck party. Prue thinks that Mr. Tansley probably brought food even if others forgot, as he is the most polite.
a. *Didn't Mr. Tansley bring food?* PNQ
b. *#Didn't Mr. Tansley bring ANYTHING at all?* SNPI-PNQ

(3) Context: Cam tells Prue that Mr. Tansley forgot to bring his backpack and his binoculars to their yearly expedition. Prue isn't surprised, as she is accustomed to Mr. Tansley being a huge scatterbrain. But Prue is still curious about whether Mr. Tansley forgot absolutely everything.
a. *Did Mr. Tansley bring ANYTHING at all?* SNPI-Q
b. *#Didn't Mr. Tansley bring ANYTHING at all?* SNPI-PNQ

Second, as shown in (3), SNPI-PNQs give rise to a kind of positive bias absent in simple SNPI-Qs. The SNPI-PNQ in (3b) necessarily generates the inference that the speaker's *prior* expectation was as follows: Mr. Tansley brought, or at least should have brought something (epistemic or deontic bias). Combined with the negative bias captured in (2), SNPI-PNQs thus end up conveying incredulity, indignation, or violation of speaker expectation, unlike simple SNPI-Qs, which only convey negative bias.

Analysis For reasons of space, we fix the analysis of PNQs by adopting the one by Romero and Han (2004), although alternative analyses (Krifka 2017, Goodhue 2018) can be adapted to derive the same predictions outlined below. R&H argue that preposed negation contributes a VERUM operator in (4), where $\mathrm{Epi}_x(w)$ and $\mathrm{Conv}_x(w)$ are sets of worlds that reflect x's epistemic state/conversational goals in w. FOR-SURE-CG_x-p thus translates roughly onto: we should really add p to the common ground.

(4) $[\![\textsc{verum}_i]\!]^{gx/i} = \lambda p\, \lambda w. \forall w' \in \mathrm{Epi}_x(w)[\forall w'' \in \mathrm{Conv}_x(w')[p \in \mathrm{CG}_{w''}]] = \textsc{For-Sure-CG}_x\text{-}p$

In contrast, the analyses of SNPI-Qs make distinct predictions for data like (2)-(3). Most of them share the basic assumption that strong NPIs contribute a kind of covert $[\![even]\!]$ operator (Heim 1984). However, they diverge as to what the core meaning contribution of this $[\![even]\!]$ is.

The scopal account. Karttunen and Peters (1979), Wilkinson (1996), and Guerzoni (2004) define $[\![even]\!]$ as in (5a), where C stands for a set of (contextually defined) alternative propositions. In short, its presupposition is hard-p (p is the least likely). They argue that the same entry can derive a seemingly contrary presupposition, easy-p (p is the most likely) when *even* scopes over negation and results in $[\![even]\!](\neg p)$. Guerzoni (2004) extends this analysis to account for *even* presuppositions in PQs by positing a covert *whether* operator (whether yes or no), as in (5b). She then analyzes SNPI-Qs as a special case of *even*-questions where the SNPIs call for easy-p presuppositions (as they denote minimal values). Only the negative answer 'no' ($[\![even]\!](\neg p)$) in one of the possible question denotations ($\{[\![even]\!](p), [\![even]\!](\neg p)\}$) presumes easy-$p$ (but not 'yes'), predicting the negative bias of SNPI-Qs.

(5) a. $[\![even]\!] = \lambda C.\lambda p : \forall q\,[q \in C \wedge q \neq p \rightarrow q >_{likely} p].\,p$
b. $[\![whether]\!] = \lambda f_{\langle\langle st,st\rangle,\langle st,t\rangle\rangle}.\{p : \exists h_{\langle t,t\rangle}[(h = \lambda p.p \vee h = \lambda p.\neg p) \wedge p \in f(h)]\}$

(6) a. $[\text{Whether}_1\,[Q\,[t_{1\langle st,st\rangle}\,[\textsc{verum}\,[even\,[\text{ not }[\text{ Mr. Tansley brought ANYTHING } (= p)\,]]]]]]]$
$= \{\underline{[\![\textsc{for-sure-CG-}even(\neg p)]\!]}, [\![\neg\textsc{for-sure-CG-}even(\neg p)]\!]\}$ cf. $[\![Q]\!] = \lambda q\lambda p.[p = q]$
b. $[\text{Whether}_1\,[Q\,[\textsc{verum}\,[even\,[t_{1\langle st,st\rangle}\,[\text{ not }[\text{ Mr. Tansley brought ANYTHING } (= p)\,]]]]]]]$
$= \{\underline{[\![\textsc{for-sure-CG-}even(\neg p)]\!]}, [\![\textsc{for-sure-CG-}even(p)]\!]\}$

While this analysis generates better predictions for simple SNPI-Qs than a lexical ambiguity account like Rooth (1985), it does not generate correct predictions for SNPI-PNQs. As exemplified in (6a) and (6b), which are possible LFs of (1c), any possible orderings of the trace t_1 of *whether*$_1$, *even*, negation, and VERUM run into one of the two problems: First, denotations like (6a) can only predict a positive bias, as both answers satisfy easy-p and the questions effectively convey doubt in the vein of: 'should we really add $\neg p$ to the CG?' Second, denotations like (6b) can only predict a negative bias, as only the underlined negative answer satisfies easy-p (thus becoming the sole answer that the speaker effectively entertains) and the utterance ends up conveying nothing more than: we should really add $\neg p$ to the CG. Thus, the analyses cannot predict the coexistence of two types of biases from any given LF. These problems persist if we posit a different account of PNQs.

The non-scopal account. Kay (1990) and van Rooy (2003) propose an alternative account of $[\![even]\!]$ which is more underspecified. We reconstruct it as in (7a). Combining VERUM, *even*, *not*, and the Q morpheme results in an LF like (8) for (1c), which apparently looks equivalent to the one in (6a).

(7) a. $[\![even]\!] = \lambda C.\lambda p : \forall q\,[q \in C \wedge q \neq p \rightarrow q \in CG \vee \neg q \in CG].\,p$
b. $[\![Q_{pol}]\!] = \lambda p \lambda w \lambda q\,[q = p \vee q = \neg p]$

(8) $[Q_{pol}\,[\textsc{verum}\,[even\,[\text{ not }[\text{ Mr. Tansley brought ANYTHING at all } (= p)\,]]]]]$
$= \{\underline{[\![\textsc{for-sure-CG-}even(\neg p)]\!]}, \neg\textsc{for-sure-CG-}[\![even(\neg p)]\!]\}$

However, the dual biases of SNPI-PNQs can now be derived thanks to (7a). First, $[\![even]\!]$ ends up contributing a negative bias. This is because (i) SNPIs denote minimal values and have a domain widening effect (Kadmon and Landman 1993), and (ii) qua (7a), all whether-q questions (where q is a non-minimal alternative to p) are presumed to be already settled. Since (8) becomes questionable only if they were settled with negative answers (if any of them were settled with positive ones, the issue of (8) would have been automatically resolved), we can predict the negative contextual condition in (2), in an analogous way to how van Rooy (2003) captures simple SNPI-Qs. Second, VERUM generates the question of 'Should we really add $\neg p$ to the CG?', which ends up conveying positive speaker epistemic bias. In sum, by using an SNPI-NPQ like (1c), the speaker presumes $\neg q$, thereby indicating that $\neg p$ is a more likely answer, while also making the meta-conversational move of requesting further justification for adding $\neg p$ to the CG, thereby signaling attitudes in the vein of incredulity or indignation about $\neg p$.

Conclusion We have made a case that SNPI-PNQs are a genuine hybrid of SNPI-Qs and PNQs that ends up signaling multi-faceted biases. Deriving the dual biases calls for an underspecified entry for *even*, and a non-scopal account of its presupposition. The analysis provides yet another instance where question biases emerge primarily from informativity related considerations and pragmatic reasoning (van Rooy 2003, Goodhue 2018, a.o.), rather than being lexically encoded or compositionally enforced.

References

Asher, N. and B. Reese (2005). Negative bias in polar questions. In E. Maier, C. Bary, and J. Huitink (Eds.), *Proceedings of Sinn und Bedeutung 9 (SuB 9)*, pp. 30–43.

Borkin, A. (1971). Polarity items in questions. In *Chicago Linguistic Society*, Volume 7, pp. 53–62.

Domaneschi, F., M. Romero, and B. Braun (2017). Bias in polar questions: Evidence from english and german production experiments. *Glossa: a journal of general linguistics 2*(1), 1–28.

Goodhue, D. (2018). *On asking and answering biased polar questions*. Ph. D. thesis, Department of Linguistics, McGill University, Montréal.

Guerzoni, E. (2004). Even-NPIs in yes/no questions. *Natural Language Semantics 12*(4), 319–343.

Kadmon, N. and F. Landman (1993). Any. *Linguistics and philosophy 16*(4), 353–422.

Karttunen, L. and S. Peters (1979). Conventional implicature. In C. K. Oh and D. Dinneen (Eds.), *Syntax and Semantics 11: Presuppositions*, pp. 1–56. New York: Academic Press.

Kay, P. (1990). Even. *Linguistics and philosophy 13*(1), 59–111.

Krifka, M. (1995). The semantics and pragmatics of polarity items. *Linguistic analysis 25*(3-4), 209–257.

Krifka, M. (2017). Negated polarity questions as denegations of assertions. In C. Lee, F. Kiefer, and M. Krifka (Eds.), *Contrastiveness in information structure, alternatives and scalar implicatures*, pp. 359–398. Springer International Publishing.

Ladd, D. R. (1981). A first look at the semantics and pragmatics of negative questions and tag questions. In H. R, M. C, and M. M. F (Eds.), *Proceedings of the Chicago Linguistic Society*, Number 17, pp. 164–171.

Romero, M. and C.-h. Han (2004). On negative yes/no questions. *Linguistics and Philosophy* (27), 609–658.

Sudo, Y. (2013). Biased Polar Questions in English and Japanese. In D. Gutzmann and H.-M. Gärtner (Eds.), *Beyond expressives: explorations in use-conditional meaning*, pp. 275–295. Leiden, The Netherlands: Koninklijke Brill NV.

Van Rooy, R. (2003). Negative polarity items in questions: Strength as relevance. *Journal of semantics 20*(3), 239–273.

Wilkinson, K. (1996). The scope of even. *Natural language semantics 4*(3), 193–215.