

On Delimiting the Space of Bias Profiles for Polar Interrogatives

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What is sketched below is an exercise in systematization concerning the grammar-pragmatics interface. It comes with a fair amount of hypotheticality and obvious (current) unresolvables.

Following – for the sake of this exercise – Sudo (2013), we assume that an adequate description of the use of polar questions needs to distinguish two different kinds of bias, namely, "evidential" and "epistemic" bias. Thus, for example, asking a positive polar question (PPQ) like *Is it sunny outside?* (in short: $?p$) is infelicitous (#) in a context providing negative evidence, i.e., evidence supporting $\neg p$ (here, for example, the addressee's turning up with a dripping wet raincoat in the speaker's windowless office) (cf. Büring & Gunlogson 2000). Likewise, when being ignorant about who went or should have gone to a certain party, one's asking a negative polar question (NPQ) like *Didn't John go to the party?* ($? \neg p$) of the party host is odd (#) since it conveys one's belief/expectation that John went (p), i.e., positive epistemic bias. Sudo (2013) goes on to show that NPQs exhibit different evidential bias, i.e., anti-positive vs. negative, depending on whether they contain "inside negation" (IN) or "outside negation" (ON). The latter distinction is familiar from Ladd (1981), who established the licensing of negative vs. positive polarity items as diagnostic criterion: *Didn't John go to the party either/too?* (IN/ON-NPQ).

Of particular interest to the agenda pursued in this exercise is the fact demonstrated by Sudo (2013) that the bias of polar questions can vary cross-linguistically (e.g., English vs. Japanese) and also between different interrogative clause types. Thus, Japanese (zero marked) \emptyset -interrogatives and *no*-interrogatives differ in what we will call their "bias profiles." The bias profile of an interrogative clause type consists of a particular (non-empty) choice from the power sets of evidential biases ($\wp(\{+^{ev}, -^{ev}, \%^{ev}\}) - \{\emptyset\}$) and epistemic biases ($\wp(\{+^{ep}, -^{ep}, \%^{ep}\}) - \{\emptyset\}$) for each of its expressive instantiations as PPQ, IN-NPQ, and ON-NPQ. Thus, for example, the bias profile of Japanese *no*-interrogatives looks like (1) (Sudo 2013:288):

(1) *Japanese no-Interrogative*

a. PPQ: $\langle \{+^{ev}\}, \{+^{ep}, -^{ep}, \%^{ep}\} \rangle$ b. ON-NPQ: $\langle \{+^{ev}, -^{ev}, \%^{ev}\}, \{+^{ep}\} \rangle$ c. IN-NPQ: $\langle \{-^{ev}\}, \{+^{ep}\} \rangle$

In prose, uses of *no*-interrogatives expressing PPQs ($?p$) require contextual evidence supporting p , and are compatible with the speaker believing p , believing $\neg p$, or being "agnostic" about whether p or $\neg p$. Uses of *no*-interrogatives expressing IN-NPQs ($? \neg p$), on the other hand, require contextual evidence supporting $\neg p$ and are only compatible with the speaker's (prior) belief/expectation that p , etc.

The interesting upshot of the picture just outlined is that it predicts the existence of $7^3 \times 7^3 = 117649$ bias profiles for polar interrogatives. Two agendas immediately derive from this result: (a) empirical exploration of the space of such bias profiles falls to natural language typology as a challenging task; (b) conceptual delimitation of the space of bias profiles arises as an interesting challenge for theorists. Here we discuss some principles that are meant to contribute to the latter agenda. These principles derive from and/or are checked against the handful of bias profiles for polar interrogatives that have so far been established (reasonably well) (cf. Gyuris t.a.; Sudo 2013).

No Uniformity / PPQ \neq NPQ. A global generalization about the empirically attested bias profiles is that none of them is entirely uniform. Thus, none of them consists of exactly the same choice, e.g., $\{+\}$, for each of its 6 cells. It is, however, not obvious why such a "triviality" should hold, i.e., why languages shouldn't, for example, have entirely bias-neutral polar interrogatives displaying $\{+,-,\%\}$ in each cell. A narrower – and intuitively more plausible – constraint would be to assume that negation should have an impact on bias (*PPQ \neq NPQ*) [$7^2 \times 6^2 \times 6^2 = 63504$] (cf., e.g., Hudson 1975:17f.). Yet, this view runs into potential conflict with the evidential "anti-bias" of Hungarian *e*-interrogatives. Here both PPQ and ON-NPQ require neutral contexts, $\{\%^{ev}\}$ (Gyuris t.a.) (IN-NPQ cannot be expressed for independent reasons).

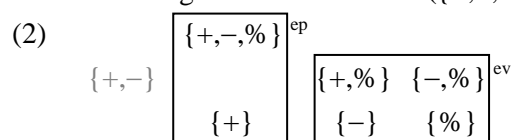
Markedness. It might be expected that using a "marked," here negated, form does not lead to more options than using the unmarked, positive, counterpart, i.e., $|\text{PPQ}| \geq |\text{NPQ}|$ [$2 \times [(3 \times 3 \times 3) + (3 \times 6 \times 6) + (1 \times 7 \times 7)] = 368$ (computed "distributively")]. Although largely valid in our sample, this principle is violated, for example, by the evidential bias of Japanese *no*-interrogatives, as shown in (1a) vs. (1b).

Polarity Match / QA Alignment. A valid principle according to our sample is that neither the evidential nor the epistemic bias of any PPQ consists of just $\{-\}$, i.e., the polarity of the question and the direction of the bias don't totally contradict each other. However, as can be seen in (1b)/(1c) for Japanese *no*-interrogatives, the opposite does not hold for the epistemic bias of NPQs (pace Roelofsen & Farkas 2015:400). Principles governing the alignment of the polarity of questions and (preferred) answers (cf., e.g., AnderBois 2011; Farkas & Bruce 2009; van Rooy & Safárová 2003) belong here too. However, (equivalents of) *Avoid Disagreement* ($- \notin$ PPQ; $+ \notin$ NPQ) or *Don't Rule Out Agreement* ($+ \in$ PPQ; $- \in$ NPQ) are equally falsified, for example, by the bias profiles of Japanese *no*-interrogatives, (1).

$\{+, -\}$ ("Convexity"). Interestingly, $\{+^{ev}, -^{ev}\}/\{+^{ep}, -^{ep}\}$ is absent from our sample. It is, however, not entirely obvious that this should be the case. In fact, principles like (strict) "division of pragmatic labor" (cf. Blutner & Zeevat 2004) would predict $\{+^{ev}, -^{ev}\}$ for the Hungarian (prosodically marked "fall-rise") \wedge -interrogative, given that the rivaling Hungarian *e*-interrogative comes with "anti-bias," i.e., $\{\%^{ev}\}$ (cf. Gyuris t.a.). If $\{+, -\}$ were generally true, the space of bias profiles would shrink to $6^3 \times 6^3 = 46656$.

$\{+^{ep}\}$ or $\{+^{ep}, -^{ep}, \%^{ep}\}$. A more drastic reduction of options would be possible if our sample's limiting epistemic biases to either $\{+^{ep}\}$ or $\{+^{ep}, -^{ep}, \%^{ep}\}$ could be trusted ($7^3 \times 2^3 = 2744$). The only exception are Japanese *desho*-interrogatives, where both IN- and ON-NPQ select $\{-^{ep}\}$ (Sudo 2013:290f.).

Another more global effect can be detected when plotting the bias profiles – for convenience of representation – on a (skewed partial) lattice. With only slight idealization, we see complementarity in that evidential biases occupy the "lower right corner" ($\{+, \%\}$, $\{-, \%\}$, $\{-\}$, $\{\%\}$), while epistemic biases tend to go for the remainder ($\{+, -, \%\}$, $\{+\}$) (presupposing $\{+, -\}$).



"Static complementarity" as found in (2) would mean a significant reduction of bias profiles ($4^3 \times 2^3 = 512$). "Dynamic complementarity," i.e., positionally free dependent choice, remains to be explored, as does a proper structural employment of lattices for individual interrogatives or groups of them.

The above picture can obviously be further refined by taking into consideration standard vs. "level" and "rising" declaratives, (prosodic) marking of "incredulity" (associated with $\{-^{ep}\}$), the special status of ON-NPQs and its proper analysis – e.g., in terms of "denegation" (Krifka t.a.) – and the interaction between clause-type marking and particles. Considerations of space do not permit us to elaborate here.

Details aside, we hope to be able to demonstrate the potential of the kind of top-down exploration undertaken here in assessments of the road ahead.

References:

AnderBois, Scott. 2011. "Issues and Alternatives." Ph.D. Diss., UC Santa Cruz. • Blutner, Reinhard & Henk Zeevat. 2004. "Editors' Introduction." Pp. 1-23 in *Pragmatics in Optimality Theory*, ed. by R. Blutner & H. Zeevat. Basingstoke: Palgrave Macmillan. • Büring, Daniel & Christine Gunlogson. 2000. "Aren't Positive and Negative Polar Questions the Same?". Ms., UCLA & UCSC. • Farkas, Donka & Kim Bruce. 2009. "On Reacting to Assertions and Polar Questions." *Journal of Semantics* 27:81-118. • Gyuris, Beáta. t.a. "New Perspectives on Bias in Polar Questions: A Study of Hungarian *e*." *International Review of Pragmatics*. • Hudson, Richard. 1975. "The Meaning of Questions." *Language* 51:1-31. • Krifka, Manfred. t.a. "Negated Polarity Questions as Denegations of Assertions." in *Contrastiveness and Scalar Implicature*, ed. by F. Kiefer & C. Lee. Heidelberg: Springer. • Ladd, D. Robert. 1981. "A First Look at the Semantics and Pragmatics of Negative Questions and Tag Questions." *CLS* 17:164-71. • Roelofsen, Floris & Donka Farkas. 2015. "Polarity Particle Responses as a Window onto the Interpretation of Questions and Assertions." *Language* 91:359-414. • Sudo, Yasutada. 2013. "Biased Polar Questions in English and Japanese." Pp. 277-97 in *Beyond Expressives: Explorations in Use-Conditional Meaning*, ed. by D. Gutzmann & H.-M. Gärtner. Leiden: Brill. • van Rooy, Robert & Maria Safárová. 2003. "On Polar Questions." *SALT* 13:292-309.