

Really: Ambiguity and Question Bias

Cory Bill (Leibniz-Centre General Linguistics (ZAS)), Todor Koev (University of Konstanz)

This paper addresses two empirical puzzles about English *really*: (i) *really* is ambiguous between an intensifier use akin to *very* (cf. *Jill is really tall*) and an epistemic use that expresses definite certainty (cf. *Jill REALLY is tall*, where small caps indicate obligatory prosodic prominence); (ii) polar questions with epistemic *really* convey a negative speaker bias (cf. *Is Jill REALLY from Hawaii?*). We propose that *really* combines with a gradable property P and states that the degree to which P applies meets all relevant standards. The ambiguity hinges on whether P ranges over degrees of individual properties (as in the case of intensifier *really*) or degrees of certainty (as in the case of epistemic *really*). In addition, we propose to derive the question bias associated with epistemic *really* from its inherent (contrastive) focus marking, thus drawing a parallel with accented negation.

Ambiguity puzzle. It has been noticed that *really* is ambiguous between an intensifier and an epistemic reading (Partee 2004; Romero & Han 2004; a.o.). Intensifier *really* modifies relative/vague adjectives and implies that the described gradable property applies to a larger degree than required by the contextual standard. In contrast, epistemic *really* expresses definite certainty about the pre-jacent proposition. As shown in (1)-(2), these two uses are distinguished both structurally (low vs. high attachment) and prosodically (optional vs. obligatory focal stress).

- (1) Jill is really tall. \rightsquigarrow *Jill is very tall.* (intensifier use)
 (2) Jill REALLY is tall. \rightsquigarrow *The speaker is definitely certain Jill is tall.* (epistemic use)

Since the same kind of meaning overlap is found within a single lexical item in several other languages (cf. German *wirklich* or Bulgarian *naistina*), the above ambiguity points at a unified semantics for *really* that brings the two readings (intensifier and epistemic) under the same analysis.

Background on POS and *very*. We make the standard assumption that gradable adjectives denote relations between degrees and individuals (Cresswell 1976; a.m.o.). The “positive” form of such adjectives lacks overt degree morphology and the degree argument is filled by POS, a covert morpheme that determines the standard of comparison. This is illustrated for *tall* in (3), where **std** is a contextually-dependent standard function that maps gradable properties to degrees.

- (3) a. $\llbracket \text{tall} \rrbracket^c = \lambda d \lambda x. d \leq \mathbf{tall}(x)$, $\llbracket \text{POS} \rrbracket^c = \lambda P \lambda x. \exists d [P(d)(x) \wedge \mathbf{std}_c(P) < d]$
 b. $\llbracket [\text{POS tall}] \rrbracket^c = \lambda x. \exists d [d \leq \mathbf{tall}(x) \wedge \mathbf{std}_c(\llbracket \text{tall} \rrbracket) < d]$

The intensifier *very* is similar to POS but it requires that the degree to which the gradable property applies be significantly greater than the standard of comparison. What counts as “significantly greater” is itself context sensitive (Barker 2002; Morzycki 2016) and depends on the modified adjective (Klein 1980; Kennedy & McNally 2005). We thus model *very* as in (4), where $\ll_{c,P}$ stands for the relation of being significantly greater in c for P .

- (4) $\llbracket \text{very} \rrbracket^c = \lambda P \lambda x. \exists d [P(d)(x) \wedge \mathbf{std}_c(P) \ll_{c,P} d]$

Explaining the ambiguity puzzle. We claim that *really* achieves a similar effect to *very* by virtue of being a quantificational counterpart to POS. While *very* requires a significant distance from the standard, *really* signals negotiation about standards (Partee 2004). That is, it quantifies over contexts “similar” to the current one and states that in each such context the degree to which the gradable property applies lies above the standard, see (5) (\approx is a similarity relation over contexts).

- (5) $\llbracket \text{really} \rrbracket^c = \lambda P \lambda x. \exists d [P(d)(x) \wedge \forall c' \approx c [\mathbf{std}_{c'}(P) < d]]$

In its intensifier use, *really* composes with a gradable individual property. Thus, *really tall* amounts to exceeding the standard of tallness in all contexts similar to the current one, see (6). As in at least

some such contexts the standard will lie above the current standard, we get the boosting (*very*-like) effect of intensifier *really*.

$$(6) \quad \llbracket [\text{really tall}] \rrbracket^c = \lambda x. \exists d [d \leq \mathbf{tall}(x) \wedge \forall c' \approx c [\mathbf{std}_{c'}(\llbracket \text{tall} \rrbracket) < d]]$$

In turn, in its epistemic use *really* composes with a property of degrees of commitment, created by a propositional COM operator (cf. Krifka 2015) and otherwise anchored to the default standard. Epistemic *really* states that the maximal such degree exceeds all relevant standards, see (7). Since contexts with stricter standards will require a higher degree of commitment to the embedded proposition, we get the intuition that epistemic *really* brings in definite certainty.

$$(7) \quad \begin{array}{l} \text{a. } \llbracket [\text{COM } \phi] \rrbracket^c = \lambda d \lambda x. d \leq \mathbf{com}_x(\llbracket \phi \rrbracket^c) \\ \text{b. } \llbracket [\text{really}_F [\text{COM } \phi]] \rrbracket^c = \lambda x. \exists d [d \leq \mathbf{com}_x(\llbracket \phi \rrbracket^c) \wedge \forall c' \approx c [\mathbf{std}_{c'}(\llbracket \text{COM } \phi \rrbracket^c) < d]] \end{array}$$

Question bias puzzle. Romero & Han (2004) observe that polar questions with epistemic *really* convey a negative speaker bias, as shown in (8). (Polar questions with intensifier *really*, like *Are you really hungry?*, need not be so biased.) This is similar to polar questions with accented negation, as in (9), which however are positively biased.

(8) Is Kai REALLY from Hawaii? \rightsquigarrow *The speaker doubts that Kai is from Hawaii.*

(9) Is Kai NOT from Hawaii? \rightsquigarrow *The speaker believes that Kai is from Hawaii.*

This second puzzle raises the following additional questions: (i) Why does epistemic but not intensifier *really* (obligatorily) trigger bias? (ii) What feature does epistemic *really* have in common with other bias-inducing polar elements, such as accented negation?

Explaining the question bias puzzle. We exploit the fact that epistemic *really* is a polar element that is inherently focused, arguing that contrastively focused polar elements in yes-no questions obligatorily trigger a speaker bias of the opposite polarity to that of the pronounced question alternative. The case of epistemic *really* is illustrated in (10), the LF for the question in (8). Adopting Rooth's (1992) alternative semantics for focus, the squiggle operator \sim links the focus domain ϕ (the minimal clause containing the focused element) to the free variable C , which (given the contrastive focus interpretation) is resolved to the negative counterpart of ϕ . This negative counterpart is derived as in (11), where high negation takes scope over the COM operator, just like epistemic *really* does. Since the speaker is pointing to the negative focus alternative while questioning the positive focus alternative, we get the intuition that the speaker is biased for the negative alternative.

$$(10) \quad [Q [\text{really}_F [\text{COM} [\text{Kai from Hawaii}]]]]_{\phi} \sim C$$

$$(11) \quad \text{a. } \llbracket [\text{not}_F^{\text{high}}] \rrbracket^c = \lambda P \lambda x. \forall d [P(d)(x) \rightarrow d = 0]$$

$$\text{b. } \llbracket [\text{not}_F^{\text{high}} [\text{COM } \phi]] \rrbracket^c = \lambda x. \forall d [d \leq \mathbf{com}_x(\llbracket \phi \rrbracket^c) \rightarrow d = 0] \quad (= \lambda x. \mathbf{com}_x(\llbracket \phi \rrbracket^c) = 0)$$

Polar questions with accented (regular) negation, as in (9), receive a similar analysis. In this case, however, the contrast is to the positive (*really*-based) alternative and so the speaker is positively biased. Our account additionally predicts that epistemic *really* in declaratives gives rise to the intuition that the negative alternative is salient in the context. Indeed, (2) would be used in a context in which the proposition that Jill is tall has been disputed.

Barker 2002 The dynamics of vagueness *L&P* 25 • Cresswell 1976 The semantics of degree *Montague Grammar* • Kennedy & McNally 2005 Scale structure, degree modification, and the semantics of gradable predicates *Language* 81 • Klein 1980 A semantics for positive and comparative adjectives *L&P* 4 • Krifka 2015 Bias in Commitment Space Semantics: declarative questions, negated questions, and question tags *SALT* 25 • Morzycki 2016 *Modification* CUP • Partee 2004 Comments on Jason Stanley's "On the linguistic basis for contextualism" *Phil Studies* 119 • Romero & Han 2004 On negative yes/no questions *L&P* 27 • Rooth 1992 A theory of focus interpretation *NLS* 1