What does *really* really mean?: Prosody and gradience in dialogue

Catherine Lai, University of Pennsylvania,
laic@babel.ling.upenn.edu

Introduction. This paper provides a unified analysis of epistemic, actuality, intensifier and cue word *really* as exemplified in (1) (c.f. Romero and Han (2004)). I argue that, like other intensifiers, *really* has the effect of raising standards on the scale projected by its argument. When the argument of *really* is a proposition, the relevant scale is one of subjective probability. This allows us to treat gradability of beliefs within the same framework used to treat other forms of semantic gradability (Kennedy and McNally, 2005).

Background. Dialogue participants need to maintain the structures that utterances are evaluated against (Barker, 2009; Gunlogson, 2008). In particular, speakers need to be able to signal different levels of certainty with respect to the evidence at hand. Cue words like *yeah*, *okay*, *right*, and *really* are frequently used to do just this. However, the strength of belief expressed by these discourse particles appears to vary with prosody (Lai, 2009). This suggests a link between prosodic gradience and gradability of beliefs (2). However, it is not clear how this propositional gradability should be formalized. *Really* provides an important test case given its intensifier use (1-d). Moreover, Romero and Han (2004) equate epistemic *really* with VERUM focus in their analysis of Negative Polar Questions. However, (3) shows that *really* questions give rise to a different type of bias than NPQs. A more articulated notion of evidence in dialogue seems necessary to tease their uses apart.

***Really* tightens the kernel.** von Fintel and Gillies (2009) argue that epistemic modals signal inference via the kernel: the 'direct information' subset of the modal base. However, it seems this notion of evidential privilege is required beyond the somewhat fuzzy direct/indirect categorization. That is, utterances are generally evaluated with respect to a generalized kernel K. This subset is induced from the conversational background based on rankings of reliability and relevance. I argue that *really* marks evaluation with respect to a smaller kernel, $K_r \subset K$. Dropping propositions from the kernel means that degree evaluations are performed over a more general domain. For example, evaluating 'This tree is tall' with respect to trees in the USA is more general than evaluation considering just trees in Philadelphia. Expanding the evaluation domain reduces the likelihood of a random object having a degree that exceeds the standard (e.g. tree height, (6)). Thus, tightening the kernel has the effect of raising standards. As in Kennedy and McNally (2005), a gradable adjective G projects a scale S_G. So, as an intensifier, *really* says that the degree of x with respect to S_G surpasses the standard with respect to K_r, as shown in (4).

***Really* and probabilities.** Following Davis et al. (2007), proposition p, uttered by X, projects X's subjective probability of p: $C_{X,K}(p)$ evaluated with respect to K. Assertion of p requires $C_{X,K}(p) > c_\tau$, the quality threshold, i.e. the minimum standard for assertability. (5) shows how (4) applies to propositions. We can take K_r as containing only evidence that surpasses a certain probability. For example, kernel tightening may have the effect of dropping indirect evidence, parallel to epistemic modals. This probability based approach helps explain how *really* seems to express increased likelihood in modal sentences (7-b). Define $C_{X,K}(\text{MIGHT}(p))$ as be the probability of drawing a p world from $\cap K$ in N attempts. Now, $\cap K \subset \cap K_r$, so to assert $\text{MIGHT}(p)$, p must be true in a signficant number of worlds in this expanded set must.

Prosodic gradience and VERUM. Pitch excursion size on *really* seems proportional to how credible p is to the speaker in terms of probabilities. Emphatic H^* accents associated with VERUM focus seem to signal credibility in the same way. However, VERUM does not seem to provide the same domain expansion capability as *really*. Instead, VERUM appears to have mulitdimensional semantics (Gutzmann and Castroviejo Miró, 2009) which foregrounds propositions as being in K (9). This interpretation of VERUM, as a prosodic marker, extends to affirmative cue words: e.g. *yeah*, *right*, *okay*. Here, VERUM prosody indicates that the speaker not only accepts p as passing the quality threshold, but that it is also highly ranked in terms of credibility and relevance for the current discussion.

Implications. This approach indicates how to a map modalized propositions to probabilities, and more generally induce rankings from such degree evaluations. Connecting probability to credibility makes the connection to prosodic gradience clearer. However, many details remain to worked out, e.g. interaction with final rises and other dialogue moves, the dimensionality of VERUM and how the evidential ranking are used in evaluating utterances.

(1) a. John really did steal the money. (epistemic)
b. John did really steal the money. (actuality)
c. A: John stole the money.
B: really? (cue word/interjection)
d. John is really rich. (intensifier)

(2) a. John really/REALLY finished on time.
b. A: John really/REALLY likes apples.
B: right/RIGHT!

(3) a. A: Are there really some vegan restaurants here?
$\rightsquigarrow$ A has some evidence for the existence of vegan restaurants, but doesn't believe it, or is at least surprised by this.
b. A: Aren't there some vegan restaurants here? (bias yes)
$\rightsquigarrow$ A has some evidence that there are vegan restaurants and believes this.
c. A: Aren't there any vegan restaurants here? (bias no)
$\rightsquigarrow$ A has evidence that there are no vegan restaurants around, contrary to belief.
d. A: Aren't there really (some/no/*any) vegan restaurants here?

(4) $[\![\text{really}]\!](\text{G})(\text{x}) = \exists d[d > std(S_G) \wedge G(d)(x)]$ w.r.t $K_r \subset K$, a 'tightened' kernel.

(5) $[\![\text{really}]\!](C_{X,K_r})(p) = \exists d[d > c_\tau \wedge C_{X,K_r}(p) = d]$ w.r.t $K_r \subset K$,
i.e. $C_{X,K_r}(p) > c_\tau$ for $K_r \subset K$.

(6) a. A: That tree is tall.
b. B: It's tall, but it isn't really tall, that Giant Sequoia in Cali was really tall.
$\rightsquigarrow$ The tree isn't tall in the widened domain, i.e. *really* scopes under negation.

(7) John is the underdog in a bike race.
a. A: John might win.
(John over takes Lance near the finish line)
b. B: John really might win.

(8) a. Gore DID win the election (VERUM focus)
$\rightsquigarrow$ It is observed Gore won according to normal standards of evidence.
b. Gore DID really win the election.
$\rightsquigarrow$ Gore won considering a higher standard of evidence than usual (i.e. discard the supreme court ruling).

(9) $[\![\text{VERUM}]\!](\text{p}) =$
a. at-issue: p,
b. CI: $p \in K$,
i.e. p is highly ranked in the CB.

(10) VERUM is manifested as a H* accent.
$|\,\text{pitch excursion}\,| \propto |\,d_G - Std(S_G)\,|$.

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