

## Only one *at least*: Refining the role of context in building alternatives

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**Introduction:** [6] observe that sentences with *at least* have two possible readings, (i) a CONCESSIVE reading (CON), and (ii) an EPISTEMIC reading (EP). [6] claim that these readings are usually linked to different syntactic positions: when *at least* is high (1b) CON is preferred, whereas in (1a) only EP is available. [6] claim that *at least* is a sentential operator and propose two different denotations in order to account for the different readings. In particular, [6] propose that epistemic *at least* indicate that in *at least*( $\alpha$ ), the proposition  $\alpha$  is part of a scale and that there are other alternatives ranked higher than  $\alpha$  that may be true (following [5], [4], [3]); on the other hand, [6] propose that the concessive *at least* truth conditions merely require that  $\alpha$  be true and additional meanings are the result of conventional implicatures. **Proposal at a glance:** I provide a more fine grained description of the data, (2), and argue that the different readings depend on the recognition of the speaker's intentions. This is cashed out by making use of the Q(uestion) U(nder) D(iscussion) ([7, 2, 1]). In unbiased contexts, the choice of reading depends on whether *at least* has discourse scope, propositional scope or DP scope. I follow [4] in considering that *at least* can take arguments of a wide range of semantic types. However, I depart from [4] (and other literature) regarding the claim that scales need to be induced by a lexical item under the scope of *at least*, and argue that scales can also be contextually provided, (3).

**Preliminaries:** [6] observe five differences between EP and CON: (i) EPS are odd when higher values in the scale are known to be false (4a); (ii) in non-entailment scales, EPS do not entail the truth of the target proposition, whereas CONS do (4b); (iii) CON indicates that higher values are preferred whereas in EPS this is not the case ((1a) could have been uttered by Mary's rival); (iv) in CON there is an inference that the prejacent falls short of the intended goal or standard ((4d) is not good, since (4d) goes against world knowledge that winning eight gold medals is outstanding); (v) the scalar implicature that upon uttering  $p$  no alternative higher than  $p$  is true isn't available in EP but is in CON.

**Proposal: One *at least*:** I follow [4] and much of the literature on scales in assuming that alternatives are focus alternatives, in particular, epistemic alternatives. The set of alternatives are the answers to the (implicit) QuD, hence sensitive the conversation goal. I propose the denotation of *at least* in (5), which establishes that the element associated with *at least* is either the lowest true element in the scale that leads to a true proposition (for non-entailment scales) or else is the highest that we can claim to be true, but there are higher alternatives whose actual truth-value we don't know. Crucially, in my proposal the scale according to which the alternatives are ordered can both be induced by a lexical item or be contextually provided, and different factors affect the ordering of the scale.

**Deriving EP vs CON:** According to the definition in (5), recognizing the speaker's intentions, i.e. identifying the QuD, is crucial to understanding the meaning of utterances containing *at least*. The presence of *at least* states that the possible answers to the QuD the utterance tries to answer are (partially) ordered according to a contextually provided scale (that is not necessarily the result of the presence of a scalar item). There are two constraints to obtain a CON: (i) it is necessary to have a *valorative* scale, i.e. a scale in which higher alternatives are taken to be better and (ii) participants need to know (or it has to be easily accommodated) that higher alternatives than the one uttered are false. When one of these requirements are not fulfilled the result is infelicitous. CON are thus not extrictly tied to syntactic positions (contra [6]) as (7), with a low *at least* illustrates. Imagine the coach of a track and field team defending the performance of an athlete (Mary) who overall did poorly but won a gold medal in one of the races. In this context, English speakers accept (7) with CON, illustrating that given the right context CON can be obtained when *at least* is low (contra [6]). EPS are compatible with *valorative* scales, but EPS arise only when it is not known whether higher alternatives are true. The proposal in (5) is compatible with CON and EP. This proposal also explains the properties observed by [6] and accounts for the 'it could have been worse' interpretation that arises with a *valorative* scale -there are lower alternatives. **Consequence of the proposal:** The necessary conditions for CON established above predict that CONS are impossible out of the blue (unless the addressee can accommodate all that information), and this is supported by speakers' intuitions. The proposal also accepts that contextual information affects the availability of one or the other reading hence explaining the impossibility of a CON in (4d) if we try to evaluate Phelps' performance alone, but it's available under different circumstances (see (6)). (6) also illustrates that scales do not depend on the presence of scalar items.

**Unbiased contexts and the distribution of *at least*:** Speakers' intuitions regarding the distribution of *at least* and the availability of EP and CON in contexts allowing both readings are reported in (2). Why is an EP reading preferred when *at least* associates with a DP (2a)? When *at least* is close to a lexical item inducing a scale it is easier to adopt the inherently triggered scale. Hence, the conditions are propitious

for an EP reading (which impose almost no constraint and is easily available when a scalar item is present). When there is no scalar item within the DP, a cardinality scale is also easily available, (8), whereas a CON requires further reasoning or contextual information biasing the interpretation towards a CON. However, the further *at least* is from the potential scale-trigger, the easier it appears to be to use a different and contextually provided (valorative) scale and to generate alternatives independent from the alternatives potentially generated by the lexical trigger. Hence, when no contextual information prevents CON, a valorative scale is contextually available (or can be easily accommodated), and the speaker's intentions are compatible with CON, it is still the case that a CON is easier when *at least* is higher, (2b). In the presence of a comma intonation, (2c), *at least* appears in the position of discourse particles (e.g. *frankly*) and is compatible with either interpretation.

- (1) a. Mary won at least a silver medal ( [6]: only EP )  
 b. At least Mary won a silver medal ( [6]: CON preferred )

[CON]: Although a gold medal is preferable, a silver medal is somehow satisfactory

[EP]: The speaker does not know whether Mary won a silver medal or whether she did better

(New) more fine grained data

- (2) a. Mary won at least a silver medal [DP scope] EP preferred  
 b. At least Mary won a silver medal [propositional scope] CON preferred  
 c. At least, Mary won a silver medal [discourse scope] both EP and CON equally available

- (3) (After a trauma, Mary is starting to have a normal social life. John is talking to Tim about her.)

John: Mary is getting better. At least she went out for breakfast yesterday morning.

- (4) a. Mary didn't win a gold medal, but she won at least a silver medal [#EP]  
 b. Mary is at least an associate professor [EP does not entail Mary is associate professor]  
 c. At least Mary is an associate professor [CON entails Mary is an associate professor]  
 d. At least Phelps won eight gold medals [#CON]

- (5) a. Let  $\alpha$  be a proposition,  $g$  an assignment function, and  $[\alpha]_{A,i}$  the set of alternatives of  $\alpha$  ordered according to  $\leq_i$ , where  $\leq_i$  is a contextually salient order amongst alternatives and  $\forall \gamma \in [\alpha], \gamma \in \text{QuD}$ .

$$[\text{at least } \alpha] = \lambda w. \alpha(w) \ \& \ \exists \beta, \gamma \in [\alpha]_{A,\leq_i} \text{ s.t. } \gamma <_i \alpha <_i \beta \ \& \ \forall \mu \in [\alpha]_{A,\leq_i}, \mu <_i \alpha$$

$$[\neg \mu(w) \vee \alpha \text{ entails } \mu] \ \& \ \exists \eta \in [\alpha]_{A,\leq_i}, \alpha \leq_i \eta$$

- b. If  $\alpha$  in  $[\text{at least } \alpha]$  is not a proposition,  $\alpha$  is of type  $\langle a, \langle s, t \rangle \rangle$ , where  $a$  is any type,

$$[\text{at least } \alpha] = \lambda X_{\langle a \rangle}. \lambda w. \alpha(X)(w) \ \& \ \exists \beta, \gamma \in [\alpha]_{A,\leq_i} \text{ such that } \gamma <_i \alpha <_i \beta \ \& \ \forall \mu \in [\alpha]_{A,\leq_i}, \mu <_i \alpha,$$

$$[\neg \mu(X)(w) \vee \alpha(X) \text{ entails } \mu(X)] \ \& \ \exists \eta \in [\alpha]_{A,\leq_i}, \alpha \leq_i \eta$$

- (6) At least Phelps won 8 medals

**A concessive reading for (6)**

(CG below stands for Common Ground)

CG: (i) Phelps was competing in 8 categories, 8 gold medals is the best possible outcome he could obtain (thus the scale associated with *at least* cannot be a numerical scale (see definition in (5))  
 (ii) winning 8 medals is amazingly good for an individual performance.

(In this context, (6) is only felicitous if the QuD is as below)

QuD: How did the USA swimming-team do in the olympics?

Explanation: Given world knowledge a CON regarding Phelps's performance alone isn't possible. A CON is possible considering the entire team's performance (using (6) to answer the indicated QuD) and with a valorative scale like *Phelps won 8 medals* < *Phelps won 5 medals* + *other team members performed well* < *all team members performed well* (scale not induced by any item).

- (7) Mary won at least that gold medal (I use *that* to avoid cardinality inferences)
- (8) a. John bought at least *Moby Dick*.  
 b. Sacale: No book < *Moby Dick* < *Moby Dick* + *War and Peace* < *Moby Dick* + *War and Peace* + *Hamlet* < ... (0 < 1 < 2 < ...)

[1] Beaver, David L., and Brady Z. Clark. 2008. *Sense and Sensitivity: How focus determines meaning*. Malden, MA: Wiley-Blackwell.

[2] Büring, Daniel. 2003. On D-Trees, Beans, and B-Accents. *Linguistics & Philosophy* 26:511–545.

[3] Büring, Daniel. 2008. The Least *at least* can do. In *Proceedings of WCCFL 26*, 114–120.

[4] Geurts, Bart, and Rick Nouwen. 2007. *At least* et al.: The Semantics of Scalar Modifiers. *Language* 83:533–559.

[5] Krifka, Manfred. 1999. At least some determiners aren't determiners. In *The Semantics/Pragmatics Interface from Different Points of View*, ed. K. Turner, 257–291. Oxford: Elsevier.

[6] Nakanishi, Kimiko, and Hotze Rullmann. 2009. Epistemic and Concessive Interpretation of *at least*. In *CLA 2009*, To appear.

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