Sufficiency Reading of Anankastic Modals

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1. Background

Ambiguity of examples (1a) and (1b) remains a challenge for contemporary theories of comparatives since Stateva (2002) and Heim (2001). Heim (2001) proposes a (S)tructural (A)mbiguity account. In her analysis two readings result from the availability of two scope sites for the comparative morpheme relative to 'need', see (2) – (3). The crucial assumption of a SA account is a quantificational meaning of '–er'. Heim (2007) argues that 'less'-comparatives with embedded 'need' additionally require a decomposition of 'less' into a scopally mobile 'little' and '–er' to rule out 'asymmetrical' readings (4b) and (4c).

(1) a. Bill got 90 points. John needs to get exactly 5 points more than that to win.
b. Bill got 90 points. John needs to get less than that to win.

(2) need > –er
a. 'John can only win if he gets exactly 95 points.'
b. 'John can only win if he gets less than 90 (penalty) points.'

(3) –er > need
a. 'The score minimally required for John to win is exactly 95 points.'
b. 'The score minimally required for John to win is less than 90 points.'

(4) a. John needs to get less than Bill needs to get.
b. #'John can only win if he gets less than what Bill is minimally required to get.'
c. #'John is minimally required to get less than the score that Bill can only win with.'

2. Against SA

A known limitation of an SA analysis is that it predicts ambiguity with any intensional predicate, which is not borne out, cf. (5).

(5) a. Bill got 90 points. John should get less than that to win.
b. #'The score minimally required for John to win is less than 90 points.'

Though able to ban the asymmetrical readings of 'less' comparatives, a SA account has no means to ban them in comparatives with 'exactly' differentials, see (6).

(6) a. John needs to get exactly 5 points more than Bill needs to get.
b. #'John can only win if he gets exactly 5 points more than what Bill is minimally required to get.'
c. #'John's minimally required score exceeds the score Bill can only win with by exactly 5 points.'

Finally, 'need' and some other necessity modals trigger the same kind of ambiguity outside of comparatives. A SA account cannot treat ambiguity (7) and (1) uniformly, despite their striking parallelism.

(7) John needs to get exactly 5 points
a. … and he is the winner. / b. … no more and no less.

3. Sufficiency Reading

This paper argues that ambiguity in (1) stems from the interpretation of the so called anankastic (i.e. goal-oriented) modals to which 'need' belongs. Two assumptions that account for Stateva-Heim ambiguity are independently motivated.

First, following von Stechow et al. (2006), I assume that anankastic 'need' requires a totally realistic ordering source, i.e. it selects its accessible worlds according to their similarity to the actual one. In effect, I apply Kratzer's (1981) analysis of counterfactual conditionals to anankastic sentences. Following von Stechow et al. (2006), I treat 'in order to' clauses as antecedents.

Second, 'need' is sensitive to the focus structure of its propositional complement. The analysis of (7) proceeds along the following lines:

(8) For all contextually salient propositions *k*, s.t. *k* ≠ that John gets exactly 5 points: that John achieves the relevant goal and gets exactly 5 points is more possible relative to a totally realistic ordering source than that John achieves the relevant goal and *k*

'More possible' is defined as in Kratzer (1981) and 'the relevant goal' is usually a proposition expressed by an 'in order to' clause. Contextually salient alternatives are determined by the focus structure of the proposition under 'need', i.e. they would normally have the form 'that John gets exactly *n* points'.

I suggest that the relative possibility scale is sensitive to an effort scale that can be made prominent if an anankastic conditional occurs in a scalar context. Naturally, the use of 'exactly' is appropriate in a context, in which precision counts most, e.g. (7b). In such a context, (7) is understood to convey that, in view of the importance of precision, getting exactly 5 points is the best possibility among the relevant alternatives given the goal. If, however, getting a high score counts as difficult, (7) conveys that getting exactly 5 points is the best possibility given the goal, implying that it is minimally sufficient. In that case, getting more than 5 points is understood to be a remote possibility due to the unnecessary effort that it involves. This is the reading of (7a). I call this reading (S)ufficiency (R)eading.

4. New Account of Ambiguity

SR is a hallmark of anankastic modals like 'need' in scalar contexts, see (9).

(9) a. John got more points than he needed to.
b. John only needs to get 5 points to win.

However, since it hinges on the pragmatic setting, it may be unavailable in certain contexts, e.g. in the presence of 'exactly' as in (7) or (1a), whose analysis runs analogously. In (1b) SR can be lifted by the focus on 'less'. If the focus is on 'less' the alternative to the complement of 'need' has the form 'that John does not get less than that', see (10a). Otherwise, alternatives may vary in the position of the degree term corresponding to John's score.

(10) a. $g(C) = \{\lambda w\ \text{SCORE}_w(\text{John}) < 90 \text{ points}, \lambda w\ \text{SCORE}_w(\text{John}) \geq 90 \text{ points}\}$
b. $g(C) = \{\lambda w\ \text{SCORE}_w(\text{John}) = d \wedge d < 90 \text{ points}: d \in D_d\}$

If the alternative set is fixed as in (10a), (1b) is predicted true iff John's winning with a score of less than 90 points is more possible in view of what is the case than his winning with a score of 90 points or more, which corresponds to the reading in (2b). If we opt for the alternative set in (10b), (1b) is predicted true iff the fact that Sean wins with a score *d* that is under 90 points is a better possibility given the facts than that he wins with a score *d'* different from *d* that is under 90 points. If a context in which getting a high score counts as difficult, the necessary score is understood to be minimally sufficient, in view of John's intention to win with the minimum effort. This derives the reading in (3b) which corresponds to SR.

References

Heim, Irene. 2001. Degree operators and scope. In Audiatur Vox Sapientiae. A Festschrift for Arnim von Stechow, eds. Caroline Féry and Wolfgang Sternefeld, 214 - 239; Kratzer, Angelika. 1981. The notional category of modality. In Words, Worlds, and Contexts, eds. H. J. Eikmeyer and H. Rieser, 38-74. Berlin: de Gruyter; Stateva, Penka. 2002. How different are different degree constructions?, University of Connecticut: PhD Dissertation; von Stechow, Arnim , Krasikova, Sveta, and Penka, Doris. 2006. Anankastic conditionals again. In A Festschrift for Kjell Johan Sæbø eds. Torgrim Solstad, Altle Grønn and Dag Haug. Oslo.