Evidence from Sentence Processing for the Semantic-Pragmatic Properties of Approximative Adverbs

Patrícia Amaral

The Ohio State University

`amaral.2@osu.edu`

Previous research on approximative adverbs (AA) has argued convincingly for the existence of two components in their meaning (a "polar" and a "proximal" component), and for the different role they play in interpretation and textual coherence (Horn, 2002). In particular, experimental research on French, Danish and Finish counterparts of *almost* and *barely* has shown that the adverbs control possible inference patterns and induce a scalar interpretation (Champaud and Bassano, 1987, Lundquist and Jarvella, 1994). However, in these studies the contexts of use of the adverbs were not sufficiently controlled, thus allowing for the interference of contextual inferences that may bias the results.

The experimental design of the present study builds on an analogy with research on quantifiers like *few*, *not many, a few*, *most* (Moxey and Sanford, 1993, Moxey and Sanford, 1998, Paterson et al., 1998). These studies show that the meaning of quantifiers is differentiated by the inference patterns that they license. In production and comprehension experiments, speakers tend to agree about the possible continuations that are felicitous after a sentence with a quantified expression, as in (1)-(3) (Moxey and Sanford, 1993: 60):

(1)   ***Not many** of the lecturers are fast talkers.*

(2)   *They should slow down for the introductory classes.* [?]

(3)   *They should speed up to be less boring.* [OK]

While (3) is a felicitous continuation of (1), (2) is less acceptable. The use of "negative" or "positive" quantifiers seems to involve a "focal bias" in that the set of entities being the focus of attention in interpretation is either the set of which the predicate in (1) is false (the complement subset), as in (3), or the set of which it is true (the reference subset), as in (2).

In the present study, a similar methodology is used in reading and judgement tasks to test the interpretation of sequences of sentences, the former containing an AA, the latter containing a connective that retrieves one of the meaning components of the AA. This contextual manipulation makes it possible to target the inferential patterns licensed by the adverb and their role in textual coherence, as exemplified in (4) and (5):

(4)   *John can **almost** swim. Therefore he'll enjoy a day at the pool with his friends./ #Therefore he's afraid of drowning.*

(5)   *John can **barely** swim. #Therefore he'll enjoy a day at the pool with his friends. / Therefore he's afraid of drowning.*

Despite the fact that *almost* modification entails the negation of the modified predicate, and *barely* modification entails the truth of the predicate (Sevi, 1998, Rapp and Von Stechow, 1999), the felicitous continuation in (4) and (5) is not the sentence that would coherently follow the respective entailment (i.e. the "polar" component), as shown in (6) and (7):

(6)   *John cannot swim. #Therefore he'll enjoy a day at the pool with his friends. / Therefore he's afraid of drowning.*

(7)   John can swim. Therefore he'll enjoy a day at the pool with his friends. / #Therefore he's afraid of drowning.

In the first experiment, reading times (RT) of pairs of sentences containing AA were measured in different contexts, involving coherent and incoherent continuations. Then "make sense" judgements were elicited from native speakers about those pairs of sentences. In the second experiment, subjects provided true/false judgements about sentences with AA taken in isolation.

As in the experiments with quantifiers mentioned above, the results strongly show a "focal bias" in the interpretation of AA in the cases of contextual integration. The RTs obtained at the end of the second sentence in each pair show that sentences which are felicitous continuations of the first sentence take less to read than sentences that are infelicitous continuations, despite the entailment patterns observed in isolation. Moreover, the predictions concerning the coherence of the pairs are significantly confirmed by the ratings assigned by the subjects in the "make sense" task. The results from the second experiment provide further evidence for the robustness of the entailment patterns when the sentences containing AA are interpreted in isolation.

The theoretical contribution of this study is twofold. First, it provides empirical data that can be used to test the validity of theoretical claims about the meaning of AA. Second, the study raises important issues concerning the semantics/pragmatics interface, pertaining both to the salience of meaning components and to the complex interplay between word meaning and context.

References

Champaud, C. and D. Bassano (1987). Argumentative and Informative Functions of French Intensity Modifiers "presque" (almost), "à peine" (just, barely) and "à peu près" (about): an Experimental Study of Children and Adults. Cahiers de Psychologie Cognitive/European Bulletin of Cognitive Psychology, **7(2)**: 605-631.

Horn, L.R. (2002). Assertoric inertia and NPI licensing. In M. Andronis, E. Debenport, A. Pycha and K. Yoshimura, eds., Proceedings of CLS 38-2: The Panels, pp. 55-82.

Lundquist, L. and R.J. Jarvella (1994). Ups and downs in scalar inferences. Journal of Semantics **11:** 33-53.

Moxey, L.M. and A.J. Sanford (1993). Communicating Quantities. A Psychological Perspective. Lawrence Erlbaum, Hillsdale, NJ.

Moxey, L.M. and A.J. Sanford (1998). Complement Set Reference and Quantifiers. In M.A. Gernsbacher, and S.J. Derry, eds., Proceedings of the 20th annual meeting of the Cognitive Science Society 1998, pp. 734-739.

Paterson, K.B., A.J. Sanford, L.M. Moxey, and E. Dawydiak (1998). Quantifier Polarity and Referential Focus during Reading. Journal of Memory and Language, **39**: 290-306.

Rapp, I. and A. von Stechow (1999). Fast 'Almost' and the Visibility Parameter for Functional Adverbs. Journal of Semantics, **16**: 149-204.

Sadock, J.M. (1981). Almost. In P. Cole, ed., Radical Pragmatics, pp. 257-271.

Sevi, A. (1998). A semantics for almost and barely. Unpublished M.A. thesis, Tel-Aviv University.