

Modal adverbs

Christopher Piñón* (Budapest)

The class of modal adverbs includes adverbs such as *probably*, *possibly*, *evidently*, *certainly*, *surely*, etc. Bellert (1977, pp. 343–347) was the first to point out two intriguing distributional facts about these adverbs. The one is they cannot be negated:

- (1) a. Probably, the socialists won the elections.
b. #Improbably, the socialists won the elections.
- (2) a. Possibly, the socialists won the elections.
b. #Impossibly, the socialists won the elections.
- (3) a. Evidently, the socialists won the elections.
b. #Not evidently, the socialists won the elections.

More generally, they do not occur in the scope of negation (putting aside the case of metalinguistic negation, where the modal adverb receives a focal stress):

- (4) a. The conservatives probably did not win the elections.
b. #The conservatives did not probably win the elections.
- (5) a. The conservatives possibly did not win the elections.
b. #The conservatives did not possibly win the elections.
- (6) a. The conservatives evidently did not win the elections.
b. #The conservatives did not evidently win the elections.

The other observation is that these adverbs do not occur in questions:

- (7) #Did the socialists $\left\{ \begin{array}{l} \text{probably} \\ \text{possibly} \\ \text{evidently} \end{array} \right\}$ win the elections?

Bellert notes that if modal adverbs were synonymous with the corresponding modal adjectives (*probable*, *possible*, *evident*, *certain*, *sure*, etc.), the standard view since Jackendoff (1972) (see also Ernst 2002), then these distributional facts would be unexpected, for the modal adjectives do not exhibit these restrictions:

- (8) a. It is probable that the socialists won the elections.
b. It is improbable that the socialists won the elections.
- (9) a. It is possible that the socialists won the elections.
b. It is impossible that the socialists won the elections.
- (10) a. It is evident that the socialists won the elections.
b. It is not evident that the socialists won the elections.
- (11) Is it $\left\{ \begin{array}{l} \text{probable} \\ \text{possible} \\ \text{evident} \end{array} \right\}$ that the socialists won the elections?

*Thanks to Fabienne Martin for useful discussion of this topic.

Bellert claims (p. 345) that modal adverbs differ in meaning from the corresponding modal adjectives in that “modal adverbs should be interpreted as predicates over the truth of the proposition expressed by the respective sentence, and that sentences with modal adverbs express two propositions; whereas the corresponding modal adjectives are predicates over the fact, event, or state of affairs referred to by the sentence, and sentences with modal adjectives express one complex proposition.” She cites the following kind of contrast in support of this particular difference:

- (12) a. It is $\left\{ \begin{array}{l} \text{probably} \\ \text{possibly} \\ \text{evidently} \end{array} \right\}$ true that the socialists won the elections.
- b. #The truth that the socialists won the elections is $\left\{ \begin{array}{l} \text{probable} \\ \text{possible} \\ \text{evident} \end{array} \right\}$.

For Bellert, then, modal adverbs are metalinguistic because they qualify the truth of a proposition, in contrast to the corresponding modal adjectives, which do not.

Although Bellert’s proposal is initially intuitively appealing, it is not worked out and suffers from a few problems. The first is that although (12b) is indeed awkward, replacing *truth* with *fact*, *event*, or *state of affairs* does not help, although it should (other things being equal) if her proposal were correct:

- (13) #The $\left\{ \begin{array}{l} \text{fact} \\ \text{event} \\ \text{state of affairs} \end{array} \right\}$ that the socialists won the elections is $\left\{ \begin{array}{l} \text{probable} \\ \text{possible} \\ \text{evident} \end{array} \right\}$.

The second worry is that a variation on (12b) does improve things, as shown in (14).

- (14) It is a $\left\{ \begin{array}{l} \text{probable} \\ \text{possible} \\ \text{evident} \end{array} \right\}$ truth that the socialists won the elections.

Here it would be odd to claim, as Bellert would presumably be forced to, that the modal adjectives do not qualify the truth of the proposition expressed by the embedded sentence. Finally, the third issue is that it is not so clear what it means for “two propositions” to be expressed in sentences with modal adverbs (as opposed to “one complex proposition” in sentences with modal adjectives).

Nilsen (2004) offers a more explicit analysis of modal adverbs, which he regards as positive polarity items. Concentrating on *possibly* vs *possible*, he takes (p. 823) the following kind of contrast to be indicative of the semantic difference between modal adverbs and the corresponding modal adjectives:

- (15) a. #The socialists will possibly win, even though they certainly won’t.
- b. It’s possible that the socialists will win, even though they certainly won’t.

Whereas (15a) is contradictory, (15b) is not. Nilsen concludes from this that *The socialists will possibly win* expresses a stronger statement than *It’s possible that the socialists will win*.

Although Nilsen’s formal analysis is technically involved (and thus cannot be discussed here for the lack of space), the basic idea—simplifying things a bit—is to treat belief states relative to an agent as being divided into a set of strongly believed (or highly plausible) propositions and a set of weakly believed (or lowly plausible) propositions. In particular, if a proposition *p* is highly plausible in a given belief state, then $\neg p$ (its negation) is lowly plausible, and vice versa, which entails that no proposition and its negation is at once either highly or lowly plausible. The strategy is then to analyze (the epistemic sense of) *possible* when applied to a proposition *p* as stating that *p* is either highly or lowly plausible and to treat the corresponding sense of *possibly* as saying that *p* is highly plausible. Assuming that *certainly* only applies to highly plausible propositions, the result is that (15a) expresses a contradiction, whereas (15b) does not. This is because (15a) asserts of the proposition that the socialists will win that it is at once highly and lowly plausible, which is a contradiction, whereas (15b) effectively states that

it is lowly plausible. Technically, the meaning of *possibly* is derived from that of *possible* by a specific kind of *domain narrowing* (see Kadmon and Landman 1993 and Chierchia 2001 for the related notion of *domain widening*), which is intended to account for the observation that *possibly* (in contrast to *possible*) is a positive polarity item.

Although Nilsen's proposal is intriguing, the empirical justification for distinguishing *possibly* from *possible* (and, more generally, modal adverbs from the corresponding modal adjectives) in terms of semantic strength is rather weak. First of all, it is not entirely obvious that *possible* in (15b) is relativized in the same way as *possibly* in (15a) (even granting that *possible* is used epistemically in (15b)), and yet Nilsen assumes that it is. Consider the following sentence, which is consistent and makes explicit that the epistemic modal base of *possible* is relativized to us, whereas that of *certain* is relativized to me:

(16) It's possible, given what we know, that the socialists will win, but I'm certain that they won't.

Second, it seems fair to say that *possibly*, according to Nilsen, means 'highly possible'. If so, then (17a) should be contradictory and *highly possible* should behave as a positive polarity item (other things being equal), i.e., it should not appear in the scope of negation (see (17b)) or in questions (see (17c)). However, neither of these expectations is borne out:

- (17) a. It's highly possible that the socialists will win, but they certainly won't.
b. It's not highly possible that the socialists will win.
c. Is it highly possible that the socialists will win?

Third and finally, if the claim that *possibly* means 'highly possible' is not obvious, similar claims about other modal adverbs seem even less so. For example, does *certainly* really express a higher degree of certainty than *certain*? If Nilsen were right, it would have to, for otherwise it would be unclear how *certainly* (in contrast to *certain*) could be a positive polarity item in his framework. Moreover, he would predict that (18a), in contrast to (18b), should be contradictory, but betting on this may be risky (even if it is admitted that (18b) is more natural, presumably due to the parallel use of adjectives).

- (18) a. The socialists certainly will win, but it's not highly certain.
b. It is certain that the socialists will win, but it's not highly certain.

If the proposals of Bellert and Nilsen are not adopted, the next step would be to consider other approaches. Krifka (1995) presents a theory of polarity items that makes crucial use of (focus) alternatives introduced by polarity items and ordering relations of semantic specificity induced by such alternatives, but he does not discuss modal adverbs. However, not all modal adverbs are clearly positive polarity items in his sense (pp. 240–241), because they are not all "exhaustive" in the sense of denoting the union of the set of their alternatives. Whereas *certainly* would be a good candidate for a positive polarity item in Krifka's analysis, *possibly* would be less so, but the issue deserves a closer look.

References

- Bellert, Irena. 1977. On semantic and distributional properties of sentential adverbs. *Linguistic Inquiry* 8, 337–351.
- Chierchia, Gennaro. 2001. Scalar implicatures, polarity phenomena, and the syntax/pragmatics interface. Manuscript, University of Milan-Biocca.
- Ernst, Thomas. 2002. *The syntax of adjuncts*. Cambridge University Press.
- Jackendoff, Ray S. 1972. *Semantic interpretation in generative grammar*. The MIT Press.
- Kadmon, Nirit and Fred Landman. 1993. *Any*. *Linguistics and Philosophy* 16, 353–422.
- Krifka, Manfred. 1995. The semantics and pragmatics of polarity items. *Linguistic Analysis* 25, 209–257.
- Nilsen, Øystein. 2004. Domains for adverbs. *Lingua* 114, 809–847.