

## ON COMBINING NEGATION AND MODALITY

**Johan van der Auwera**

*University of Antwerp (UIA), Linguistics (GER), B-2610 Antwerp,  
Belgium, auwera@uia.ua.ac.be*

**Abstract:** The author discusses the lexicalization of the combination of modality and negation from a Gricean perspective, more particularly the occurrence of specialized negative modal expressions. Most perspicuous are expressions with negation having scope over modality.

**Keywords:** modality, negation, lexicalization, implicature.

### 1. COGNITIVE AND LEXICAL SEMANTICS

Possibly Aristotle was the first to put forward the idea that the notions of possibility and necessity are interdefinable with the help with negation. His ideas have been formulated in terms of a so-called “Square of Oppositions”. The modal square necessarily involves 4 four concepts. There is an alternative way of mapping the essential modal concepts, found e.g. in (Jespersen, 1917), which posits only three such concepts. It could be argued that both the quadripartite and the tripartite analyses are correct and one way of integrating both views is found in van der Auwera’s (1996) “three-layered modal square”, represented in (1).

(1)

## Modality's three-layered scalar square

①	$\Box p, \neg \Diamond \neg p$	$\rightarrow$	$\Diamond p, \neg \Box \neg p$
②		$\leftarrow \Diamond p, \Diamond \neg p \rightarrow$	
③	$\neg \Box p, \Diamond \neg p$	$\leftarrow$	$\Box \neg p, \neg \Diamond p$

' $\Box$ ' = 'necessary', ' $\neg$ ' = 'not', ' $\Diamond$ ' = 'possible' in the sense of 'at least possible',  
 ' $\Diamond$ ' = 'possible' in the sense of 'only possible', sometimes called 'contingent',  
 the sense in which ' $\Diamond p$ ' = ' $\Diamond \neg p$ ', ' $\rightarrow$ ' = 'entailment'

Like the Aristotelian square (1) has four corners and it represents the interdefinability of necessity and possibility. But (1) also has three layers, thus conforming with Jespersen's (1917) tripartition of the modal field. And (1) is also scalar, and as such it allows some of Horn's (1989) insights on the scalar nature of modal concepts and of scale-induced implicatures.

(1) is like a map. But it is a very abstract one. For one thing, it does not distinguish between what could be called "levels" or "dimensions" of modality, such as dynamic, deontic or epistemic modality. For another, it could be said to involve "cognitive" (or "logical") rather than directly "lexical" semantics. In cognitive semantics one studies concepts, i.e. meanings that are in some way related to expressions, but the exact relation is of no concern. One can study e.g. what it means to say that it is not necessary that not  $p$ . In what could be called "lexical semantics", on the other hand, one studies meanings in as far as they are expressed directly in lexical items or conventionalized phrases. Relevant are in this context the existence of the English items *must* and *need* and the idiomatic phrases *must not* and *need not*, but one does not look at the phrase it *is not necessary that not*. The latter is English, but it has not been conventionalized into an idiomatic phrase. Or — another illustration — cognitively, the two basic modals, possibility and necessity, are interdefinable. However, languages can be found to exploit the Aristotelian equivalence in the construction of conventionalized expressions for ' $\Box p$ ', as in (2) but not for ' $\Diamond p$ '. That is to say that languages regularly express 'necessary' as 'not possible not' but perhaps they never express 'possible' as 'not necessary not'.

(2) BENGALI

o na hese parlo na.

he not laughing could not

"He couldn't not laugh."

'He couldn't help laughing.' / 'He had to laugh.'

We can now state the question: how do languages lexicalize the cognitive map of modality, or, since every region is seen to involve negation: how do languages lexicalize the combination of negation and modality.

## 2. SPECIALIZED NEGATIVE MODALS

An analysis of some 30 European and Indian languages reveals that languages may contain modal

expressions that are specialized for negative uses, i.e. that lack a corresponding positive use. The type that is most widespread, at least in the convenience cluster of languages studied, is the modal that is specialized for ' $\neg \Diamond p$ ', as exemplified with Hindi (3) (van der Auwera, in print) or Russian (4).

- (3) HINDI  
 maim banaras \*(nahīm) jāne pāyā  
 I Banaras not go get  
 'I could (not) go to Banaras.'

- (4) RUSSIAN  
 Mne nel'zja igrat'.  
 to.me not.possible play  
 'I may not play.'

The availability of a separate negative modal for ' $\neg \Diamond p$ ' makes straightforward cognitive sense. With a specialized ' $\neg \Diamond p$ ' marker a language can be said to focus on the layers of the square rather than the corners.

But specialized negative modals are found elsewhere too, in particular for the expression of ' $\neg \Box p$ ', as with English *need not*, as in (5).

- (5) Fred *need* \*(not) go to Paris.

From the point of view of Horn (1989) this is a problem: the absence of necessity is taken to be a quantity-1 'only possible' implicature and languages are not supposed to lexicalize quantity-1 implicatures. However, as shown in (1), the absence of necessity is wider than the presumed quantity-1 'only possible' implicature, it is better characterized as 'at most possible' (either 'only possible' or 'impossible'). Hence it does not fall under the ban against the separate lexicalizability of quantity-1 implicatures.

Note that (5) exemplifies not merely a fully unmarked expression of the absence of necessity. This much we also find with a negated *have to*, for example.

- (6) Fred *does not have to* go to Paris.

The special feature of *need not* is that the corresponding positive use is bad. Why should that be so? Here, we take Horn (1989) to have discovered at least a part of the explanation. Horn (e.g. 1989: 261-262) has convincingly shown that ' $\neg \Box p$ ' expressions may get ' $\Box \neg p$ ' quantity-2 implicatures, which process either renders them vague or gives them a new meaning, with the implicature ousting the original meaning. Particularly in case of a full semantic change, there is a certain need for a new ' $\neg \Box p$ ' expression. Of course, this need may not be very strong. A modal system may well function without any specialized ' $\neg \Box p$ ' expression. Still, the least one can say is that the relative need for renewal is higher for a ' $\neg \Box p$ ' meaning than for e.g. a ' $\Box \neg p$ ' meaning. Note that with this scenario we can also explain the existence of modals specialized for ' $\Box \neg p$ ', as with Bengali *nei*, arguably the conventionalization of a quantity-2 implicature (van der Auwera, in print) as well as the existence of negative modals that are vague between ' $\neg \Box p$ ' and ' $\Box \neg p$ ',

as with Tamil *veñam* (Asher 1982: 168), arguably a case of ongoing implicature conventionalization.

- (7) BENGALI  
 dāriye khe-te nei.  
 standing eat not.is  
 'One shouldn't eat standing up.'
- (8) TAMIL  
 nii ate ceyya veeñam.  
 you that do must.not/need.not  
 'You mustn't do that.' or 'You needn't do that.'

As there is no corresponding Gricean scenario for possibility markers, we can also explain why no corresponding specialized possibility markers (that would only express ' $\Diamond \neg p$ ' or that would be vague between ' $\Diamond \neg p$ ' and ' $\Diamond p$ ') have been attested.

#### REFERENCES

- Asher, R.E. (1982) *Tamil*, Amsterdam, North-Holland.
- Horn, L.R. (1989) *A natural history of negation*, Chicago & London, The University of Chicago Press.
- Jespersen, O. (1917) *Negation in English and other languages*, Copenhagen, Høst.
- van der Auwera, J. (1996) Modality: the three-layered scalar square. *Journal of Semantics* 13, 181-195.
- (in print) Negating dynamic and deontic modality in Hindi-Urdu and Bangla. In: *Proceedings Eighteenth South Asian Language Analysis Roundtable* (A. Abbi (ed.)). New Delhi.