Monotone Decreasing Quantifiers and Polarity

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In this paper we report the results from two pilot studies on the negative behaviour of a small number of monotone decreasing quantifying expressions (QEs) in English and Swedish. As is well-known, monotone decreasing QEs, also known as negative QEs, (1a), differ from monotone increasing, positive, QEs, (1b), in their entailment patterns (Barwise & Cooper, 1981).

(1) a. Not all kids wore socks. → Not all kids wore yellow socks.
Not all kids wore yellow socks. ↛ Not all kids wore socks.

b. Almost all kids wore yellow socks. → Almost all kids wore socks.
Almost all kids wore socks. ↛ Almost all kids wore yellow socks.

However, when it comes to tests for negativity, not all monotone decreasing QEs behave the same (Klima, 1964; van der Wouden, 1997). While they are all claimed to allow for *weak* NPIs, they are not all well-formed with *strong* NPIs. In addition, they behave differently in tests for negativity at the sentence level, for instance *tag* questions and co-ordination structures (Klima, 1964; Moxey, Sanford & Dawydiak, 2001). While there seems to be a lot of overlap between QEs that are well-formed with strong NPIs and diagnosed as negative in sentence level tests (and vice versa for QEs only allowing weak NPIs), there seems to be more variation in the English data than reported by Moxey et al. (2001). To get an initial view of what needs to be investigated in more detail, we have therefore conducted two pilot studies; one on English QEs, to complement existing research, and one on Swedish QEs, for which very little has been done in this area.

For each pilot, native speakers of English or Swedish were instructed to rate 36 sentences as either OK or BAD. The sentences were statements with quantified subjects and polarity sensitive material. In the study on English, the material was manipulated in a 3x6 design: Test type (**NPI** (*any*, *anymore*), **Tag question** (*were they*, *weren't they*), **Co-ordination** (*and so*, *and neither*)) x QE (*not many*, *not more than five*, *at most five*, *few*, *many*, *at least five*), (2). The four monotone decreasing QEs differed in whether or not they include overt negation (*not many*, *not more than five* vs. *at most five*, *few*) and whether they had been associated with denial in previous research (*not many*, *few* vs. *not more than five*, *at most five*). The two monotone increasing QEs (*many*, *at least five*) were included as a control. All participants saw all sentences.

(2) a. Not many students come here anymore.
b. Not many students have read any of those books.
c. Not many teachers were late, were they?
d. Not many students were late, weren't they?
e. Not many participants were late, and so were the organisers.
f. Not many organisers were late, and neither were the participants.

The pilot study on Swedish was similar to the English one, but did not include tag questions as these are not used in Swedish in the same way. Instead both weak and strong NPIs were tested. As in the English study, the material was manipulated in a 3x6 design: Test type (**strong NPI** (*pjåkig* 'bad', *förrän* 'until'), **weak NPI** (*ens* 'even', *längre* 'anymore'), **Co-ordination** (*inte heller* 'not either', *också* 'also')) x QE (*inte många* 'not many', *inte mer än fem* 'not more than five', *högst fem* 'at most five', *få* 'few', *många* 'many', *minst fem* 'at least five').

The results from the English pilot study were the following: *not many*, *not more than five* and *few* were all well-formed with NPIs, while *at most five* showed more variation. Regarding tag questions, *not many* and *not more than five* behaved as expected of negative statements (*were they* well-formed, *weren't they* ill-formed). In the co-ordination condition, both these QEs also behaved as negatives (*and neither* well-formed, *and so* ill-formed), although the pattern was somewhat weaker for *not many*. *At most five*, in contrast, showed a *non*-negative pattern in co-ordination (*and so* well-formed, *and neither* ill-formed). Other than that, there were no clear patterns for *at most five* or *few*. We interpret the results as an indication that overt negation plays a crucial role for sentence negativity in English; although *at most five* and *not more than five* are semantically very close, only the latter passes the tests for sentence negativity and the former actually seems to give rise to positive polarity at all levels. *Few*, which also lacks overt negation, shows very varied behaviour, suggesting that it is at least not a clear negative at the sentence level. This is interesting, not least for analyses that take *few* to correspond to *not many* (e.g. Barwise & Cooper, 1981). Our findings show that these have very different behaviour.

The results from the Swedish pilot were as follows: while the strong NPI *pjåkig* ('bad') was not accepted in any condition, the other strong NPI, *förrän* ('until'), was acceptable to some extent with *inte många* ('not many') and *inte mer än fem* ('not more than five'), but totally unacceptable with *högst fem* ('at most five') and *få* ('few'). Regarding the weak NPIs, *ens* ('even') was well-formed with *inte mer än*, *högst* and *få*, but not with *inte många*, and *längre* ('anymore') was well-formed with all of them, although a little bit less with *högst*. In the co-ordination condition, *inte många, inte mer än, få* behaved as expected of negatives (*inte heller* 'not either' well-formed, *också* 'also' ill-formed), while *högst* showed more variation, patterning neither as a negative or a positive. We take these results to indicate that *få* and *högst* are weaker quantifiers (in the sense of van der Wouden, 1997) than the quantifiers with overt negation, *inte många* and *inte mer än*. However, the fact that *inte många* was rated as ill-formed with one of the the weak NPIs (*ens*) is a clear indication that a larger study is needed. As in the study on English, we note that the semantically very similar QEs *högst* and *inte mer än* do not behave in the same way.

All our results are of course tentative and should be followed up by more extensive investigations to see how the different monotone decreasing QEs distribute into groups. The somewhat unexpected finding that some of the monotone decreasing QEs are not acceptable to everyone even with weak NPIs needs to be substantiated in both languages. If robust, it would have implications for the connection between downward monotonicity and negative polarity. The indication that overt negation makes a major difference to downward monotone QEs that are otherwise very similar in meaning should also be investigated more broadly.

References

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