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Connectives and anaphoric reference patterns to negative quantifiers

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Moxey and Sanford (1987, 1993a; Sanford, Moxey & Paterson, 1996) observed that negative or monotone decreasing quantifiers appear to allow a broader range of possibilities for prominal reference than do monotone increasing or nonmonotone quantifiers. In particular, a pattern emerges in which reference to the Complement Set is possible, as shown in (1):

(1) Not quite all of the fans went to the game.
They watched it on TV instead.

Here the reference *They* is to those fans who did not go the match. It is clearly not a reference to the fans who went to the match, and it is not a reference to fans in general, since *not quite all* denotes a proportion which is nearly 100% of the fans (or alternatively, just short of 100%). Such reference patterns appear to be almost if not completely impossible for positive and nonmonotone quantifiers (as is attested by the effect of substituting nearly all in example (1):

(2) Nearly all of the fans went to the game.
*They watched it on TV instead.

The possibility of complement set reference has met with resistance by some theorists because it has been suggested that there is no operation in the formation of a discourse representation corresponding to subbtracting the set over which which the predicate is true from its superset (in the present case, *The fans who went to the game from fans in general.* (Corblin, 1997; Kamp & Reyle, 1993). However, examples like (1) cannot be explained any other way (Sanford et al., 1996), and attempts have been made to accomodate complement set anaphora into linguistic descriptions (e.g. Devlin, 1997).

Subsequent studies of on-line comprehension during reading suggest that the focus patterns underlying anaphoric reference to negative quantifiers are late relative to the pattern underlying positive quantifiers (Paterson, Sanford, Moxey & Dawydiak, 1998). This observation appears to support an account in which the reference patterns set up by negative quantifiers result from inferences based on negatives denying suppositions: for instance, *Not many fans went to the game* denying the supposition that Many might have gone (;see Moxey & Sanford, 1993b for empirical evidence on this). Positive quantifiers create no such denial. The assumption behind the Inference Theory of complement set reference (sanford et al., 1996) further supposes that the processor is set to find evidence as to why the denial is being made (i.e., why fans did not go to the match, and part of this is why fans

wouldn't go - these fans constituting the Complement Set).

Additional support for this explanation comes from a body of evidence showing that connectives serve to modulate the incidence of Complement Set references. Results of three continuation studies show that *because* amplifies Compset incidence, while *but* and *and* tend to decrease it. Furthermore, in the case of some nonmonotone quantifiers, such as *only a few X*, and *Only X% of the X*, *because* can lead to a very dramatic increase.

The effects can be thought of in terms of influences on the process of inference in the wake of encountering quantifiers which stimulate searches for reasons and consequences of the numbers and proportions which they denote, which is consistent with the Inference Model.

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