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Effects of what is expected on the focussing properties of quantifiers: A test of the presupposition-denial account

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Abstract

This paper reports three experiments that test the Presupposition-Denial account of complement set reference. According to the theory, complement set focus arises when focus is on the difference between the amount conveyed by a natural language quantifier and a large presupposed amount. We call this difference the shortfall. In this paper, what is expected is explicitly manipulated in a production study to test the theory in two ways. First it is shown that when the quantity expected by a character is much larger than that denoted by a *positive* quantifier, some participants refer anaphorically to the complement set. Thus, even without a negative natural language quantifier the existence of a shortfall leads to complement set focus. Second, it is shown that when the quantity expected by a character is none, the production of complement set reference is reduced for *negative* quantifiers. This provides strong support for shortfall as the key mechanism in the presupposition denial account.

Keywords: Quantifiers; Focus; Denial of presupposition

A much studied and obvious aspect of natural language quantifier (NLQ) meaning is the quantity information conveyed by such expressions. For example, the use of *many* in *many of the children were watching TV* indicates that a large number of the children were watching TV. The relationship between such terms and numbers or proportions has been shown to be vague (e.g. Bass, Cascio, & O'Connor, 1974; Moxey & Sanford, 1993a, 1993b; Pepper & Prytulak, 1974; Renooij & Witteman, 1999; Wallsten, Budescu, Rapoport, Zwick, & Forsyth, 1986). It is also modified in systematic ways by the context (e.g Hormann, 1983; Moxey & Sanford, 1993b; Newstead, Pollard, & Reizbos, 1987).

This paper concerns a different function of NLQs. Moxey and Sanford (1987) described a property of certain NLQs which affects the normal focus pattern for readers or listeners. Compare (1) and (2):

(1) A few of the football fans were at the match.
(2) Few of the football fans were at the match.

Both of these describe a similar situation in which a small number of football fans are at the match. However, Moxey and Sanford have shown in several papers using several methodologies that (3) follows naturally from (2) but is difficult, if not impossible, after (1), while (4) is much better after (1) (Moxey & Sanford, 1997, 1993a, 2000; Paterson, Sanford, Moxey, & Dawydiak, 1998).

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(3) They decided to stay at home and watch it on television instead.
(4) They cheered loudly when the player scored.

They in (3) appears to refer to the set of fans who were not at the match, a set we shall call the complement set, or compset, as it is in some sense a complement of the set of fans picked out by the quantified noun phrase (fans who were at the match). *They* in (4) appears to refer to those fans who were at the match, which we shall call the reference set, or refset, since it is a set standardly singled out by positive NLQs.

This complement set focus pattern for certain NLQs such as *few* is of theoretical interest to those aiming to explain linguistic focus or anaphoric reference, as the plural pronoun in (3) refers to something which has not been explicitly mentioned and which is difficult to define formally. The pattern is also noteworthy because it explains inferences which go far beyond the text such as those involved in the interpretation of (5) and (6):

(5) A few of the passengers were killed in the accident, which is awful.
(6) Few of the passengers were killed in the accident, which is good news.

Again, both (5) and (6) indicate that a small number of passengers were killed. However (5) clearly focuses on the passengers who were killed, while (6) focuses on the large number of passengers who survived (Sanford, Fay, Stewart, & Moxey, 2002). The difference in focus means that the sentence endings are not interchangeable. It is also likely that inferences about the nature of the crash will differ between (5) and (6) as (5) seems more consistent with a bus accident while (6) is more consistent with a plane crash. This pattern of focus is also apparent with terms other than NLQs. For example, Teigen and colleagues (Teigen, 2001; Teigen & Brun, 2000, 2003) have shown that similar patterns of inference are associated with positive and negative probability terms (for example, *it is possible* versus *it is doubtful*). Positive probability terms lead people to focus on the occurrence of a predicted event, while negative terms such as *doubtful* lead people to focus on it's non occurrence.

In summary, the use of a negative NLQ allows us to refer to the complement set with anaphoric pronouns, indicating the salience of the complement set. This is a fact to be taken into account in the development of semantic theories and theories of language understanding.

There have been a few attempts to explain the difference in focus pattern, all of which have linked the complement set focussing property with formal linguistic properties of NLQs. In particular, NLQs that can lead to complement set focus also tend to be categorised as negative NLQs, or to be associated with negative properties such as downward monotonicity (see Kibble, 1997; Moxey & Sanford, 1993a; Nouwen, 2003). While logical negation is relatively well understood, linguistic negation is more difficult to explain. However, one observation is that certain expressions, known as negative polarity items, can only appear in negative linguistic environments (of simple declarative sentences, e.g. Van der Wouden, 1994; Zwarts, 1994). Examples include *any*, *anymore*, or *give a damn*. Their acceptability can be used as a diagnostic for negativity. Thus, one can say *I don't know any linguists*, but not *I know any linguists*. Likewise *few of the children read any books* is acceptable, while *a few of the children read any books* is not.

Downward monotonicity is a mathematical property that can be associated with some linguistic expressions, and that has been linked with compset focussing NLQs. If an expression is monotone decreasing (mondec) it means that if a statement containing that expression is true of a whole set, then the same statement containing that expression must also be true of any proper subset of that set. For example, the set of children who come to a party early is a subset of the set of children who came to the party. We know that *Less than 10* is mondec because the following is true:

(7) Less than 10 children came to the party, and therefore less than 10 children came to the party early.

Substituting *more than* for *less than* or simply removing *less than* renders (7) untrue because *more than 10* and *10* are not mondec. What seems to be crucial for natural language expressions to be judged mondec, is that the expression can mean some value *or less* including the possibility that none is the case (see Sanford and Moxey (2004) for a more detailed argument).

Lexical feature based accounts such as those provided by Kibble (1997) and Nouwen (2003) have associated the mondec feature with complement set reference. Certain NLQs have this feature in their lexical entries, and for these an additional set is available for subsequent pronominal reference. Normally it is possible to refer to the whole set following a quantified statement (the whole set of children) or to the reference set (less than 10 children—who came to the party). Following a mondec NLQ, it is also possible to refer to the whole set minus the reference set, which is Kibble's (1997) definition for the compset.

We have argued elsewhere (Moxey, Sanford, & Dawydiak, 2001) that such accounts fail because we have shown that (a) there are mondec NLQs which do not lead to many compsets, and (b) there are some expressions which do lead to compset reference despite the fact that they do not have the mondec feature.