Complement set references vary with implicit expectation in story and brief contexts

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It is well established that a negatively quantified noun phrase (see A) may act as an antecedent for pronominal reference to the complement set (compset). Compset anaphora are available, or preferable, for reference after noun phrases involving negative natural language quantifiers (NLQs; Moxey & Sanford, 1987; Paterson et al., 1998). Consider A) – C):

A) Few of the journalists attended the press conference in person.
B) They watched on the live stream and worked on other stories.
C) They watched the speaker closely and asked questions.

After A), B) seems to follow naturally. B) refers to the complement of the set identified by the quantified noun phrase (journalists who did attend) or the compset. C) refers to the set picked out by the noun phrase (the reference set or refset) but is a less natural follow-on from A).

Nouwen (2003) and Kibble (1997) offered semantic explanations for complement anaphora, highlighting the relationship between downwards monotonicity and compset reference. In these accounts, while the refset is always the default referent, if a quantifier is monotone decreasing, it may license the compset, but only where the true compset exists as a subtraction of the refset from the maximal set, and only when reference to the compset is a last resort.

Moxey et al. (2001) showed that incidence of compset reference varied dependent on whether the monotone decreasing quantifier combined with a tag question (Klima, 1964) to form an affirmation or a denial. Moxey (2006) put forward an account focusing on denial of a (pre)supposition (Clark, 1976). The account asserts that by using the negative NLQ "*few*" in A) the speaker is denying a presupposition that more journalists would attend. Moxey (2006) provided evidence by increasing, then denying the expectation of the reader, as in D):

D) The policeman expected *all/none* of the witnesses to make a statement. *A few/Few* of them came forward. They….

Moxey found that references to the compset were less common when an expectation was for a low amount (*none*) and most common where an expectation was for a high amount (*all*) was later denied by a negative NLQ. The difference between the expected amount and the amount denoted by the negative NLQ was termed the "*shortfall*"; and according to the presupposition denial account (PDA) it is focus on the shortfall which leads to compset reference.

Recently, Upadhyay et al. (2019) manipulated probabilistic, rather than salient, expectations within story contexts to examine if a preference for compset reference could be found using longer naturalistic passages. Their sentence acceptability ratings suggested that where an expectation for a small amount was implied, that is, where the shortfall has been reduced, there was a preference for refset reference, even after a negative NLQ. This provides evidence for the PDA as manipulating the shortfall varied the acceptability of refset reference. Evidence of a corresponding decrease in acceptability of a compset reference after the shortfall has been reduced was implied rather than demonstrated.

We built Upadhyay et al. by examining story-based materials using a sentence production task. This paradigm allowed examination of possible as well as preferred referents and established if longer contexts led to production of compset references. We also contrasted the pattern of reference after stories with those found after brief, single sentence, materials where an expectation is implicit and grounded in readers' knowledge about the world. The contrast

of story to brief materials allows us to consider the level of context needed for an expectation, which is not explicit, to manipulate the shortfall. The negative NLQ "*Few*" was used in all 48 materials which were counterbalanced for length and expectation. Participants provided a suitable next sentence beginning with the pronoun "They". Example materials (E – H) below:

E) **Story/High Expectation:** Newtonglen Tennis Club is a competitive club which gives membership to only highly skilled amateur tennis players. Each year a lot of club players do well in the national league. The club offers a selective improvement course taught by a professional tennis player. This year a lot of good players applied to the course. Few of the members were accepted onto the course. They …

F) **Story/Low Expectation:** Newtonglen Tennis Club is a community club which gives membership to local people who want to get into sport. The club has never had a member compete in the national league. The club offers a selective improvement course taught by a professional tennis player. This year a lot of poor players applied to the course. Few of the members were accepted onto the course. They…

G) **Brief/High Expectation:** Few of the children were excited about Christmas. They …

H) **Brief/Low Expectation:** Few of the children were excited about doing chores. They …

A logit binomial generalised linear mixed effects model was fit to all responses which were coded as having compset or refset focus. Overall likelihood of compset focus was estimated to be .9; compset focus was more likely for brief (.92) rather than story (.86) materials. After brief materials, compset references were more likely when the expectation was high (.95) rather than low (.88). After story materials more compset references were found when expectation was low (.89) rather than high (.83), although the difference in likelihood was non-significant.

Results support the PDA, as the likelihood of compset reference after brief materials varied in relation to expectation suggesting focus on the shortfall. Results from story materials did not replicate those of Upadhyay et al. (2019). This may relate to differences in the nature of the tasks or the saliency of expectations conveyed within the story materials. This study adds weight to the assertion that a complete account of complement anaphora must consider contextual factors such as expectation and denial, rather than rely solely on lexical-semantic properties of the NLQ.

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