The consequences of number agreement on number interpretation

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Agreement attraction in comprehension: independence of combinatorial operations?

• A plural noun can interfere with singular subject-verb agreement, even though it does not head the subject projection:

  The key to the cabinets were on the table.

• These errors are common in production (Bock & Miller, 1991) and elicit an illusion of grammaticality in comprehension (Pearlmutter, Garnsey, & Bock, 1999).

• We have argued that such ‘agreement attraction’ in comprehension is due to errors in the cue-based retrieval of number features from memory (Wagers, Lau, & Phillips, in press; Badecker & Lewis, 2007).

Agreement attraction provides an opportunity to investigate questions about the independence of the multiple processes necessary to combine new material with the prior sentence context.

CUNY 2008: Is agreement independent from the analysis of grammatical roles?

• CUNY 2008 (Lau, Wagers, Stroud & Phillips): Does the incorrect analysis of agreement result in an incorrect analysis of subjecthood?

• Production studies show that thematic and conceptual-semantic factors can produce agreement of function words (e.g. Thornton & MacDonald, 2003; Vigliocco et al., 1995)

• If agreement attraction reflects a retrieval error, this retrieval error could result in reassignment of the subject.

[The phone by the toilets] were what Patrick used.

• In fact, reading time results suggested that agreement attraction does NOT result in re-analysis of the subject.

• This result suggests that the formal number features can be retrieved independently of the computation of grammatical roles.

Current Study: Is agreement independent from the conceptual interpretation of subject number?

• Does the incorrect analysis of agreement result in an incorrect interpretation of the number of the subject?

The key to the cabinets were...

Design & Predictions

Complete complex-NP attraction sentences with plural predicates:

Control:
The defect in the appliance was surprisingly numerous.

Attraction:
The defect in the appliances were surprisingly numerous.

Predictions:
• If the erroneous retrieval of a plural feature in attraction also results in a revised interpretation of the subject as plural, readers should incorrectly accept a plural predicate like ‘numerous’
• If computing the formal agreement relationship is carried out independently of the subject’s conceptual interpretation, readers should correctly reject the plural predicate at the same rate.

Experiment 1: Controlling for noun number

Perhaps just the presence of an embedded plural noun will improve acceptability of plural predicates, regardless of whether a plural verb was present to induce agreement attraction:

The defect in the appliances appeared to be surprisingly numerous

If comprehenders are sloppy in this way, our manipulation won’t tell us much about agreement computation. Therefore, we began with a control experiment with non-number marked verbs.

Methods:
• Speeded acceptability task, following RSVP: 350 ms/word, 2 s for judgment.
• 114 items: 30 experimental items, 84 fillers. 54% gram.; 46% ungram.
• Participants: 24 native speakers; Analysis: Logistic mixed-effect regression

Experiment 2: Agreement attraction

• Experiment 1 showed that a plural embedded NP by itself does not improve acceptability.

• Critical question: when combined in an attraction configuration with a plural verb, does the agreement attraction result in a plural subject interpretation?

The defect in the appliances were surprisingly numerous.

Methods: Same as Exp. 1, with number-marked verbs.

Conclusions

• The grammatical illusion of the plural verb being acceptable is not linked to a plural interpretation of the subject.

• Previous work suggests agreement attraction is also not linked to misinterpretation of the subject role.

• Under the view that agreement attraction in comprehension is due to errors in cue-based retrieval at the verb, these findings converge in suggesting that single features of a constituent can be retrieved to satisfy licensing requirements without forcing realignment of tightly linked relationships.

• However, thematic, conceptual, and agreement information likely can interact when they are simultaneously available, as in production.

References