Complexity Effects in A- and A'-dependencies

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The fact that D-linking ameliorates island violations has traditionally been analyzed as a grammatical effect (e.g., Pesetsky 1987; Cinque 1990; Rizzi 1990) but others have proposed that it is a working memory effect (e.g., Kluender 1998; Hofmeister 2007; Hofmeister & Vasishth 2014), in that more complex fillers (including D-linked fillers) are easier to retrieve at the gap site, thus resulting in higher acceptability. This working memory account predicts that we should find such complexity effects across all types of dependencies, but it is far from clear if this prediction is correct. D-linking effects with A'-dependencies in island environments are well documented, but there is conflicting evidence regarding non-island environments (e.g., Alexopoulou & Keller 2013; Goodall 2015). Moreover, A-dependencies have never been tested, to our knowledge. Here we test this prediction directly by searching for complexity effects in a broader spectrum of dependencies.

We designed a sentence acceptability experiment (7-point scale) in English with three factors: distance of the dependency (long vs. short), dependency type (A, A' and none) and complexity of filler (simple vs. complex). "Simple fillers" consist of a determiner and a noun, while "complex fillers" contain two modifiers as well. Participants see 6 tokens of each condition (=72 experimental items) and 90 filler items with varying degree of acceptability (=162 items total). 72 lexical sets were created for the experiment and distributed into 12 lists using a Latin square design. 12 additional lists were created by reversing the order. The A' conditions were tested using relative clauses and the A conditions used passive constructions. In addition, baseline ("No gap") conditions were included to test for the effect of simple and complex noun phrases when no dependency is involved**.** A sample set of experimental sentences is provided here, showing both simple ("the director") and complex ("the famous movie director") noun phrases:

(1) A'-gap (Relative Clause)
   a. **The (famous movie) director** who ___ hugged the actress received the award.
   b. **The (famous movie) director** who the actress hugged ___ received the award.
(2) A-gap (Passive)
   a. **The (famous movie) director** was hugged ___ by the actress in the theater.
   b. **The (famous movie) director** is believed to have been hugged ___ by the actress in the theater.
(3) No gap (Active)
   a. **The (famous movie) director** hugged the actress in the theater.
   b. **The (famous movie) director** thinks that Paul hugged the actress in the theater.

The experiment is now in progress; 48 native speakers of English will have participated by the time it concludes. If the amelioration induced by the complex filler in (1b) is significantly greater than that in (3b), it will provide further evidence for a complexity effect in non-island environments, as the memory account predicts. Similarly, greater amelioration due to complexity in (2b) than in (3b) will also support the working memory analysis and will provide first-time evidence of a complexity effect in an A-dependency, analogous to a D-linking effect in an A'-dependency. On the other hand, if the amelioration in (1b) or (2b) is not greater than in (3b), this suggests that perhaps complexity of the filler affects (A') island environments only, in line with what much of the literature on D-linking has traditionally assumed, but counter to the prediction of the working memory analysis. If greater amelioration is found in (1b), but not in (2b), this might suggest that the working memory analysis is correct, but that retrieval at the gap site in A-dependencies is fundamentally different than in A'-dependencies. Although the results of the experiment are not yet complete, they promise to offer very interesting implications no matter how they turn out.

References

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