Effects of Prior Context on Lexical Access During Sentence Comprehension: A Replication and Reinterpretation

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In a phoneme monitoring task, prior biasing context eliminates the effect of lexical ambiguity, replicating and extending the results of Swinney and Hakes (1976). It is argued, however, that the conclusions drawn by Swinney and Hakes are not justified by the data and that a different model of the effects of context on lexical processing is more theoretically plausible than theirs.

INTRODUCTION

It is intuitively obvious that the ambiguity rampant in natural language does not cause difficulty for participants in discourse because most utterances occur in some context and that context determines the intended meaning of structurally or lexically ambiguous constituents. Thus it was surprising to hear from Foss and Jenkins in 1973 (Foss and Jenkins, 1973) that the effects of lexical ambiguity in sentences as measured by phoneme monitor latency (the time required for a subject to push a button in response to a word beginning with a specified target

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phoneme) (Foss, 1970) did not in fact disappear when the ambiguous item was preceded by biasing prior context within the sentence. While Foss and Jenkins admittedly preferred the "prior decision model" of the effects of biasing context, whereby the context operates to activate, hence facilitate, retrieval of only one meaning of an ambiguous item, they felt that their data instead confirmed the "choice point decision model," which says that prior context has its effect after lexical retrieval. On that account, all meanings of an ambiguous item are transferred to working memory despite context, so that an ambiguous item is not rendered functionally unambiguous by prior context.

Recently, however, Swinney and Hakes (1976) report success (where Foss and Jenkins failed) in eliminating the effects of ambiguity in sentence processing, as measured by phoneme monitoring latencies, with the introduction of prior context. Furthermore, the context worked whether it was in the same clause with the ambiguous item or in a previous clause. While the data conflict with those of Foss and Jenkins, Swinney and Hakes claim to have shown what Foss and Jenkins had hoped to show, i.e., that prior context affects the processing of lexical ambiguities prior to their retrieval from the lexicon, prejudicing the retrieval of only the contextually appropriate reading and allowing the ambiguous item to be processed as though it were unambiguous. However, one's interpretation of their findings turns on the hypothesis one accepts to account for the existence of increased monitor latencies following ambiguous items in neutral contexts. This is true because while the failure to eliminate ambiguity effects with context surely falsifies the prior-retrieval hypothesis, success confirms a number of hypotheses, only one of which is the prior-retrieval one. The theses of this article are (1) that data such as those of Swinney and Hakes, replicated in the experiment reported here, cannot choose between the prior- and post-retrieval hypotheses, but (2) that, by hypothesis, context must have its effect in a post-retrieval decision process.

An article by Cairns and Kamerman (1975) addressed the source of increased phoneme monitoring latencies following ambiguous lexical items in neutral contexts. An experiment reported in that article showed that the effects of ambiguity on monitor latencies have a short time course, hence are attributable to a decision process which intervenes between the retrieval of multiple meanings for an ambiguous item and the transference of one of those meanings to working memory. Their data were taken to falsify Foss's (1970) hypothesis that the source of increased monitor latencies was the carrying of dual meanings for some time