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Describing and Comprehending Change in Quantitative Information

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Abstract

We investigate how people understand English text that describes changes in a numeric quantity over time. We hypothesize that people find it easier to comprehend text that specifies the starting quantity and ending quantity in chronological order, in contrast to how some news media tend to report this type of information, stating the ending quantity first, presumably because the ending quantity is the "news". Our hypothesis is that it is more difficult for readers to comprehend a sentence presenting quantities in reverse chronological order, requiring more processing time by the reader and leading to reduced accuracy in answering follow-up questions about the quantities. The results of an experiment supported the hypothesis. This finding has theoretical implications for models of text comprehension, and practical implications for how to communicate technical material in newspapers, educational texts teaching or requiring the use of quantitative information, and tests and assessments based on reading passages.