What was the Cause? Children's Ability to Categorize Inferences

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Inferences have been utilized in a number of studies to further investigate the dynamics of comprehension in children (e. g., Casteel, 1993). An inference can be defined as the processing of information that extends beyond the initial processing of text (Inman & Dickerson, 1995). An inference is usually made when information is not specifically indicated in the text (McKoon & Ratcliff, 1992). An inference is a critical part of comprehension (e.g., Oakhill, 1984; Phillips, 1988). Often causal relations are not specified and an inference is needed. Children draw inferences with relative ease and the study of inferences has helped researchers understand the dynamics of comprehension in children. In previous research children have been able to generate their own responses from ambiguous text (e.g., Bonitatibus & Beal, 1996; Casteel, 1993). The current study examines children's ability to classify inferential statements.

Nineteen fourth-grade participants (9 males and 10 females) between the ages of 9 and 10, read stories with ambiguous endings. Each story was followed by 6 statements that elicited either an unlikely, neutral, or likely inference. After each statement, the children indicated, using a "Yes" or "No" key, whether they thought the statement could fit into the context of the story.

Responses and reaction time data were collected from each participant. There was a main effect of sentence type (F (2, 36) = 5.43, $p < .05$). Reaction times were significantly faster to the unlikely statements compared to both the likely (F (1,38) = 10.28, $p < .01$) and neutral statements (F (1, 36) = 5.13, $p < .05$).

Overall, children correctly classified unlikely inferences as not appropriate for the story (87%). Most children also rated the neutral inferences as not fitting into the story. Children were reluctant to classify likely inferences as fitting into the story. Overall, only 2/3 of the likely statements were classified as fitting into the story. The lower classification rate for the likely sentences was significant (F (2, 87) = 173.32, $p < .001$). The children's reluctance to classify likely sentences as fitting into the story is reflected by significant difference in reaction time between the "Yes" and the "No" responses (F (1, 88) = 16.73, $p < .001$).

The results indicated that children rejected unlikely inferences much faster than they accepted likely or neutral inferences. The children may have generated their own inferences during the story. After the story they had to compare their prior expectations with the likely, neutral, and unlikely inferences. If children have generated correct inferences than unexpected statements like those in the unlikely condition may have been quickly rejected. The additional time used to classify the neutral statements may have been necessary because the statement could have happened, but often did not fit with the context of the story. The likely statements may have been close to the children's expectations and would require additional processing to be sure that they really did fit with the story. Children were reluctant to respond "Yes", which might have been a strategy to ensure their accuracy. This research indicates that further work is necessary for a better understanding of how children process ambiguous information.

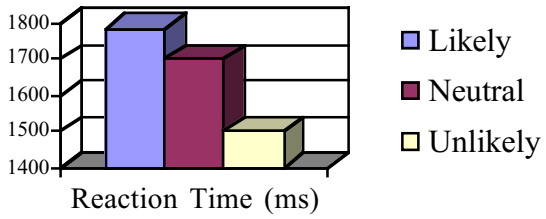

Figure 1. Reaction time (ms) for classification of Likely, Neutral, and Unlikely inferences.

References

Bonitatibus, G. J., & Beal, C. R. (1996). Finding new meanings: Children's recognition of interpretive ambiguity in text. *J. of Exper. Child Psych.*, *62*, 131-150.

Casteel, M. A. (1993). Effects of inference necessity and reading goal on children's inferential generation. *Devel. Psych.*, *29*, 346-357.

Inman, T., & Dickerson, D. (1995). Children's inferences of causal events during story understanding. *J. of Genetic Psych.*, *156*, 265-277.

McKoon, G., & Ratcliff, R. (1992). Inference during reading. *Psych Rev, 99*, 440-466.

Oakhill, J. (1984). Inferential and memory skills in children's comprehension of stories. *Brit J of Educ Psych, 54*, 31-39.

Phillips, L. M. (1988). Young readers' inference strategies in reading comprehension. *Cognition and Instruction*, *5*, 193-222.