The Curse of Knowledge and False Belief Reasoning
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Introduction

When adults are knowledgeable about an outcome of an event they are more likely to believe that others will predict that outcome (e.g., Fischhoff, 1975). This 'curse of knowledge' (the tendency to be biased by one's knowledge when inferring a more naive perspective) interferes with adults' ability to reason about other people's false beliefs (i.e., beliefs that are inconsistent with reality; e.g., Birch & Bloom, 2007).

Does the curse of knowledge affect children’s false belief performance?

Researchers suggest that classic false belief tasks are particularly difficult for young children because they pose an additional demand of having to ignore one's outcome knowledge (Birch & Bernstein, 2007).

This is especially problematic for young children because they are more susceptible to the curse of knowledge than older children and adults (e.g., Bernstein, Erdfelder, Meltzoff, Peria & Loftus, 2011; Birch & Bloom, 2003; Mitchell & Taylor, 1999).

Method (cont.)

The order of the Knowledgeable and Non-Knowledgeable trials was counterbalanced.

E.g., “This is Sally and this is Ryan.”

*Sally was playing with her ball, then she got hungry, so Sally put her ball right in here (e.g., pointed to purple container), and went home. When Sally was gone, Ryan hid Sally’s ball in a different spot! He may have hid it here, or here, or here” [e.g., pointed to yellow, red, and blue containers, respectively].

Knowledgeable Trials:

“But we know that he hid it here.”

[eg., pointed to blue container]

Non-Knowledgeable Trials:

“But, we don’t know where he hid it.”

Then, Sally came back.

Where will Sally look for the ball?

Results (cont.)

The graphs below show children’s performance on the false belief tasks across Knowledgeable and Non-Knowledgeable Trials. Scores reflect the number of trials that children passed across a total of two false belief tasks per trial type.

Results

Children were significantly more likely to pass the false belief tasks in the Non-Knowledgeable trials compared to the Knowledgeable trials, \( Z = -2.59, p = .010, \) non-directional, with a moderate effect size (\( r = .28 \)), Wilcoxon Signed-Ranks Test.

Examining the performance of 3- and 4-year-olds separately revealed:

- 3-year-olds were significantly more accurate in the Not-Knowledgeable than Knowledgeable trials, \( Z = -2.56, p = .011, \) non-directional, with a moderate to large effect size (\( r = .37 \)).

- 4-year-olds did not show a significant difference in performance across Knowledgeable and Non-Knowledgeable trials, \( Z = .37, p = .38, \) non-directional.

Conclusions

Young children are more accurate at making inferences about false beliefs when they do not have specific outcome information, compared to when they have specific outcome information.

That is, when young children are not required to ignore specific outcome information, they are more likely to pass false belief tasks.

We are not suggesting that the curse of knowledge is the only reason children find false belief tasks difficult.

But, we demonstrate that classic false belief tasks are unnecessarily difficult and therefore will mask children’s actual competence at false belief reasoning.

Questions? siba.ghrear@psych.ubc.ca

Method

Participants

\( N = 88 \) 3- & 4-year olds (55% male)

\( M = 3 \) years, 11 months; Range = 3, 0 - 4, 11

Method

In a within-subjects design, children were presented with four modified false belief tasks where a protagonist hid an object in one of four containers.

In the absence of the protagonist, another character placed the object in a different container.

In two tasks, children were told exactly where the object was hidden (Knowledgeable Trials).

In the other two tasks, children were not told where the object was hidden (Non-Knowledgeable Trials).

Percent of Participants

<table>
<thead>
<tr>
<th>Knowledgeable Trials</th>
<th>Non-Knowledgeable Trials</th>
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<tr>
<td>0</td>
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<td>1</td>
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<td>2</td>
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Performance of Three year olds

Performance of Four year olds

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