



Stepping Outside of One's Own Perspective: The Older One is, the Further One Can Step?

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Introduction

Children experience a number of limitations in reasoning about their own and others' knowledge states, particularly in early childhood.

e.g., difficulty with false belief reasoning, problems recalling the source of their own knowledge, 'egocentric' reasoning (e.g., Robinson, 2000; Taylor, Esbensen, & Bennett, 1994; Wellman, Cross, & Watson, 2001).

Do developmental changes in children's susceptibility to the '**curse of knowledge**' bias partially account for some of these difficulties?

The **curse of knowledge** bias is a tendency to be biased by one's own knowledge when trying to reason about a more naïve perspective—either one's own *earlier* more naïve perspective or *someone else's naïve perspective* a.k.a. 'hindsight bias', 'reality bias', 'knew-it-all-along' effect

(see, Bernstein, Atance, Loftus & Meltzoff; 2004; Birch & Bloom, 2003; 2004; Birch, 2005; Birch & Bloom, 2007; Birch & Bernstein, 2007; Taylor, Esbensen, & Bennett, 1994; Lagattuta, Sayfan, & Harvey, 2013; Mitchell & Taylor, 1999).

We tested the efficacy of a **novel method** to assess how *widely known* children think their knowledge is—a measure that can be used to assess both *individual* and *developmental* differences across development.

Method

Participants

$N = 101$, ages 4-10 ($M = 7.23$ years).

Measure

Each child was shown pictures of 10 children "about your age".



Children were asked 6 trivia questions.

e.g., "Do you know what a baby fish is called?"

For half of these questions, children were also provided with the answers (i.e. "cursed" with knowledge.)

e.g., "A baby fish is called a fry"

Method (cont.)

Children were asked to decide how many of the 10 children would know the answer to the question.

They answered by placing the pictures of those who "know" (✓) and "don't know" (?) on a poster board following a training phase to ensure they understood the task.



Calculating COK:

child said knew when *told* answer

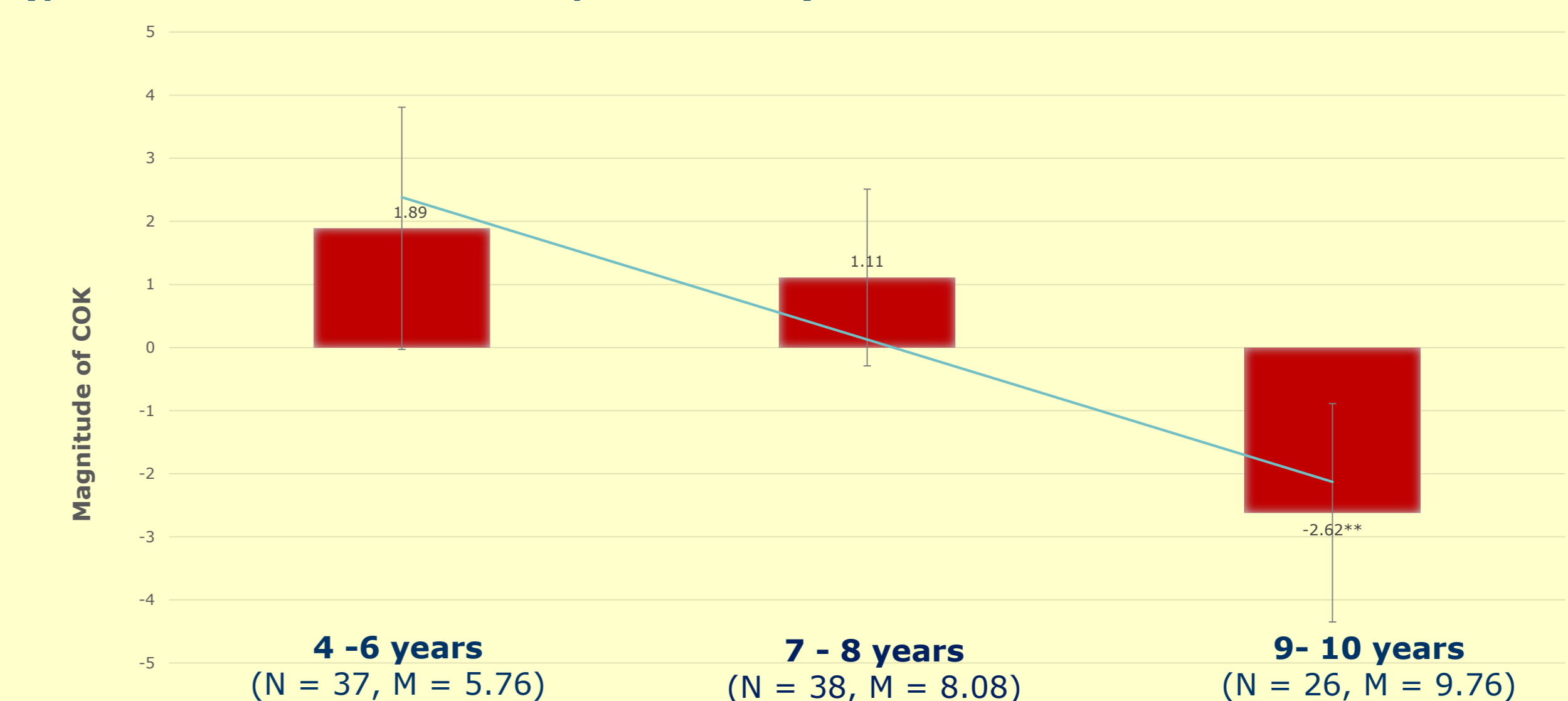
MINUS # child said knew when *not told* answer

EQUALS Magnitude of Curse of Knowledge

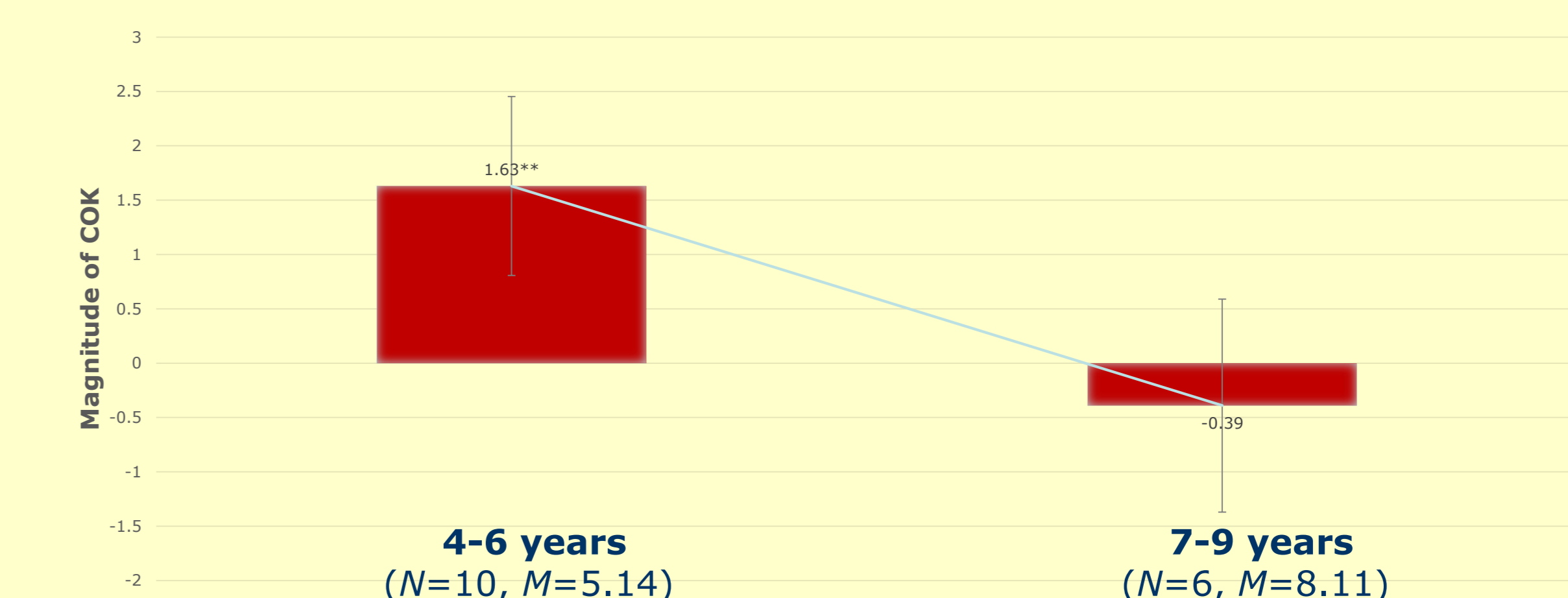


Results

Magnitude of the curse changed with age ($\Delta R^2 = .10$, $F(1, 99) = 10.86$, $p = .001$). Specifically, children became **less biased by their knowledge with age** ($\beta = -.31$, $t = -3.30$, $p = .001$).



In a *preliminary* replication study, we compared the magnitude of COK among **younger** and **older** children. As expected, the magnitude changed with age ($\Delta R^2 = .45$, $F(1, 12) = 9.63$, $p = .009$). That is, again, the bias significantly decreased with age ($\beta = -.67$, $t = -3.10$, $p = .009$).



Conclusions & Future Directions

Children use their own knowledge of facts to gauge how widely known that information is—a useful heuristic that sometimes leads them awry.

This curse of knowledge bias tends to decline with age. We also found an unexpected reversal of this bias in the oldest children. Future research will see if this replicates in a new sample with different items.

Individual differences exist in the magnitude of this bias even within children of the same age. Do these differences correlate with children's performance on other theory of mind tasks? Can they predict children's social-emotional functioning?

How much of this bias is due to inhibitory control versus fluency misattribution versus source monitoring difficulties?

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