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Brief Report

Early sensitivity to arguments: How preschoolers weight circular arguments

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ABSTRACT

Observational studies suggest that children as young as 2 years can evaluate some of the arguments people offer them. However, experimental studies of sensitivity to different arguments have not yet targeted children younger than 5 years. The current study aimed at bridging this gap by testing the ability of preschoolers (3-, 4-, and 5-year-olds) to weight arguments. To do so, it focused on a common type of fallacy—circularity—to which 5-year-olds are sensitive. The current experiment asked children—and, as a group control, adults—to choose between the contradictory opinions of two speakers. In the first task, participants of all age groups favored an opinion supported by a strong argument over an opinion supported by a circular argument. In the second task, 4- and 5-year-olds, but not 3-year-olds or adults, favored the opinion supported by a circular argument over an unsupported opinion. We suggest that the results of these tasks in 3- to 5-year-olds are best interpreted as resulting from the combination of two mechanisms: (a) basic skills of argument evaluations that process the content of arguments, allowing children as young as 3 years to favor non-circular arguments over circular arguments, and (b) a heuristic that leads older children (4- and 5-year-olds) to give some weight to circular arguments, possibly by interpreting these arguments as a cue to speaker dominance.

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Introduction

To avoid being deceived and cheated at every turn, humans must be able to evaluate communicated information. It has been suggested that to solve this problem they possess cognitive

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mechanisms of *epistemic vigilance* that rely on a variety of cues to gauge the reliability of speakers and the plausibility of information received through communication (Sperber et al., 2010). The development of these mechanisms has been the topic of intense work that has shown, for instance, that 4-year-olds and, under certain conditions, 3-year-olds select sources of information based on their benevolence (Mascaro & Sperber, 2009), their reliability (Corriveau & Harris, 2009b), their emotions (Clément, Bernard, Grandjean, & Sander, 2013) and their familiarity (Corriveau & Harris, 2009a) (for reviews, see Clément, 2010; Harris, 2012). This work has focused on testimony, and the outcome studied was whether children accept a character's testimony or not or which character's testimony they accept.

However, in children's everyday lives, testimony is often only a part of a larger interaction. For instance, if a child rejects an adult's testimony, the adult is likely to provide reasons to support his or her testimony. Observational studies have shown that parents use reasons to convince their children (although there is substantial variability in how much they do so) and that these reasons can be effective (see Grusec & Goodnow, 1994). Moreover, reason giving by parents can push even very young children (18- to 24-month-olds) to provide reasons of their own (Kuczynski & Kochanska, 1990; Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987; Perلمان & Ross, 2005). Children also exchange arguments with each other, a skill critical to conflict resolution (Ram & Ross, 2001, 2008; Ross, Ross, Stein, & Trabasso, 2006).

Besides demonstrating the importance of argumentation in children's interactions, these observational studies suggest that young children can evaluate arguments—that is, accept sound arguments and reject weak arguments. Experimental studies have also tested these skills (for a review, see Mercier, 2011). In the moral domain, 8-year-olds are more sensitive to empathic arguments than to normative arguments (Eisenberg-Berg & Geisheker, 1979; see also Kuczynski, 1982). In conservation tasks, 7-year-olds are more likely to be swayed by arguments supporting the correct answer than by those supporting one of the wrong answers (Miller & Brownell, 1975). As detailed below, Baum, Danovitch, and Keil (2008) showed that 6-year-olds prefer non-circular explanations over circular explanations (as this article was going to press, a study was accepted that extends Baum et al's results to 3- to 5-year-olds (Corriveau & Kurkul, *in press*)—its results, which we cannot do more than briefly mention now, are in overall accord with the present conclusions).

Although the observational and experimental studies converge in demonstrating children's argumentative skills, there is a gap of several years between the earliest observations of argumentative interactions (in 18-month-olds) and the earliest experimental demonstrations of argument evaluation (in 6-year-olds). To bridge this gap, we tested the ability of young children (3- to 5-year-olds) to weigh simple arguments.

Circular arguments provide a good tool to study young children's ability to weigh arguments. Despite being, with a few exceptions (Walton, 1985), fallacious, circular arguments are found in the production of both adults and children, so that children are likely to have already been exposed to such arguments (see Baum et al., 2008). Previous work has shown that adults can generally spot and reject circular arguments (Hahn & Oaksford, 2007; Rips, 2002) and that 6-year-old children favor non-circular explanations over circular explanations (Baum et al., 2008). In this latter study, the experimenters devised two circular explanations and one non-circular explanation for various facts such as the whiteness of polar bears' fur. One circular explanation was short, making it blatantly circular (“They have white fur because their fur is always white”). The younger children (kindergartners with a mean age of 5 years 8 months) were less likely than chance to pick this short circular explanation as most felicitous among the three explanations. However, when children were provided only with a choice of a long, less obviously circular explanation and a non-circular explanation, only second graders (with a mean age of 8 years 3 months) reliably selected the non-circular explanation.

These results suggest that young children might be sensitive to circular arguments in some circumstances. Given that the current study was concerned with even younger children, blatant circular arguments were used (by contrast, in Baum et al.'s (2008) study, not all of the explanations were as blatantly circular; e.g., “[Dishwashers] work because they make things that you put in them clean”). The mode of reason giving was also shifted from explanation to argument. In an explanation the conclusion is agreed on (e.g., polar bears have white fur), whereas in an argument the conclusion is disputed. In the current experiment, children needed to help someone find a pet by deciding which of

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