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Overrated adults: 4-year-olds' false belief understanding is influenced by the believer's age

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ABSTRACT

Children perceive adults as more knowledgeable than peers. We tested whether this general preconception influences preschoolers' performance in a false-belief task. Children (4- and 5-year-olds; $N = 146$) watched videos showing a peer protagonist or an adult protagonist experiencing events that should lead the protagonist to hold a false belief. Then children were asked to infer the protagonist's perception of the situation. Age of the protagonist influenced 4-year-olds' judgments but not 5-year-olds' judgments. Specifically, 4-year-olds' performance was at chance when presented with a peer protagonist. Their performance dropped further when presented with an adult protagonist and was significantly below chance. Children aged around 5 years performed above chance level regardless of whether they were presented with an adult or peer protagonist. This suggests that in the younger age group, children's tendency to regard adults as experts in general knowledge undermined their ability to accurately judge the possibility that an adult could hold a false belief.

Introduction

Social group membership is one of the first pieces of information that is available about other people. It can influence our thoughts and behaviors in future interactions. For example, depending on

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whether a newly introduced counterpart is young or old, male or female, and speaks our language or a different language, we might rapidly form expectations about various areas of his or her life such as hobbies, eating habits, educational background, and taste in music. Not surprisingly, another person's social group membership is a powerful influence on the behavior of children as well. For example, 14-month-old infants preferentially imitate novel actions from a model who speaks their native language compared with a model who speaks a foreign language (Buttelmann, Zmyj, Daum, & Carpenter, 2013). Similarly, preschoolers selectively learn nonlinguistic information from a speaker with a native accent versus a foreign accent (Kinzler, Corriveau, & Harris, 2011). Furthermore, with no additional cues on these informants available, preschoolers are less likely to endorse information provided by obese or physically disabled informants compared with nonobese and able-bodied informants (Jaffer & Ma, 2014). Thus, social group membership might influence who infants and young children are more likely to learn from. In the current study, we explored whether social group membership of a protagonist might cause preschoolers to reason in different ways about this protagonist's mind. Specifically, we tested whether 4- and 5-year-old children would differ in their understanding of a peer's mind compared with an adult's mind in false-belief tasks.

The ability to infer beliefs in other people has been described as "theory of mind" (Premack & Woodruff, 1978). One way to test children's theory of mind is by so-called false-belief tasks. False-belief tasks require children to infer that another person holds a misconception about reality (Wimmer & Perner, 1983). The *unexpected transfer scenario* is a typical false-belief task. Here, children observe how a protagonist places an object at one location and then leaves the scene. During the protagonist's absence, children see how the object is relocated to a different place. Children's task is then to indicate where the protagonist will look for the object on his or her return. The *unexpected content scenario* is another widely used false-belief task (Gopnik & Astington, 1988). Children first see a box (e.g., a Smarties box), and then its unexpected content (e.g., pencils) is revealed. Children's task is to indicate what another person will think is inside the box. In the unexpected transfer scenario, children express a theory of mind if they state that the protagonist will look for the object at the location where he or she placed it originally, that is, a place that children know to be wrong. In the unexpected content scenario, children express a theory of mind if they state that another person will think that the box contains the depicted content, again an assumption that children know to be wrong.

False-belief understanding develops during the preschool years. Between 3 and 5 years of age, children move from below-chance performance to above-chance performance (Wellman, Cross, & Watson, 2001). In addition to age, some aspects directly related to the setup of a false-belief task influence preschoolers' performance. For example, if the motive for moving the object in the unexpected location scenario was to deceive the protagonist, children are more likely to identify the protagonist's false belief compared with the absence of a deceptive motive (Wellman et al., 2001). Similarly, if the participants actively contribute to moving the props from one location to another rather than just watch, they are subsequently more likely to identify the protagonist's false belief (Wellman et al., 2001).

The effects of such manipulations are plausible because they are directly relevant to the procedure. But do children take into account only those cues that are immediately task relevant when thinking about false-belief scenarios? In other words, are they able to ignore social cues that are arguably less task relevant but that could cloud their judgment such as whether the protagonist is a peer or an adult? Strictly speaking, solving a false-belief task solely relies on the analysis of the presented scenario on the basis of children's knowledge about fundamental human abilities. That is, children need to appreciate that any human protagonist cannot know something that he or she has not witnessed even though the child has got this particular knowledge. From this perspective, the social group membership of a person should be of little immediate relevance when solving the task; social cues such as the protagonist's language, appearance, and age should not change children's reasoning about their beliefs. However, the assumption that protagonists are perceived as "clean slates," and their beliefs are inferred in an unbiased way, would be false if children take into account that adult protagonists know the world better than do peer protagonists when responding in false-belief tasks.

In fact, preschoolers are well known to take into account the age of a social partner when making knowledge attributions. For example, children are more likely to learn novel words for novel objects from adults than from peers when no other cues of the model's reliability are available (Jaswal &