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Preschoolers reason about mental states in drawing and pretense

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Introduction

Drawing and pretense are representational acts, dependent on the artist's or actor's mental representations. Do preschoolers understand the mental components of these acts? The two studies presented here explore children's sensitivity to an actor's mental states when interpreting the outcome of the representational acts of drawing and pretense.

Experiment 1: Knowledge

At a minimum, the artist or pretender must know about the object that they're drawing or pretending to be. Some researchers find that 4-year-olds do not consider the agent's knowledge: children say an artist is drawing a snake even though she's never seen one, or that an actor is pretending to be a monkey even though he doesn't know about monkeys (Richert & Lillard, 2002; German & Leslie, 2001). Others have found that children *are* sensitive to the pretender's knowledge state (e.g., Aronson & Golomb, 1999; Davis, Woolley & Bruell, 2002), though drawing has not been further studied.

Experiment 1 explores this question further, to examine whether children will take into account an actor's knowledge state in drawing and pretense.

Experiment 2: Belief

Do preschoolers consider an artist's false beliefs when interpreting her drawing? There is some evidence that they do: in Robinson, Riggs & Samuel (1996), children considered their own false belief when naming their own drawings based on that belief, and Peterson (2002) found that when given an unexpected contents false belief task, 4-year-olds could correctly identify which of two pictures (the expected or true contents) an ignorant artist would draw.

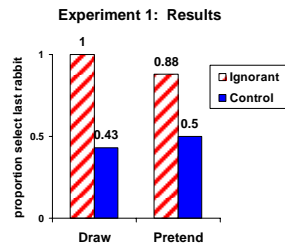
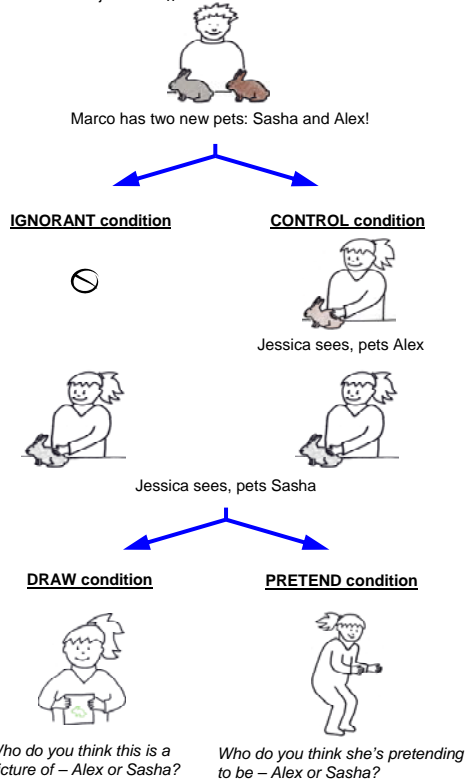
In these studies, children were given unambiguous drawings. Experiment 2 pursues this question further, by presenting 4-year-olds with the more difficult task of naming an ambiguous drawing based on a false belief generated by an unexpected contents situation.

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Experiment 1: Knowledge

Question: Will 4-year-olds use an actor's knowledge when naming a drawing or an act of pretense?

Participants: 32 preschoolers (mean = 4;2, range 3;6 - 4;8)
Between-subjects design:

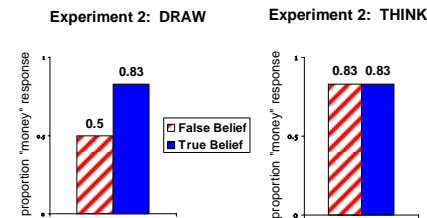
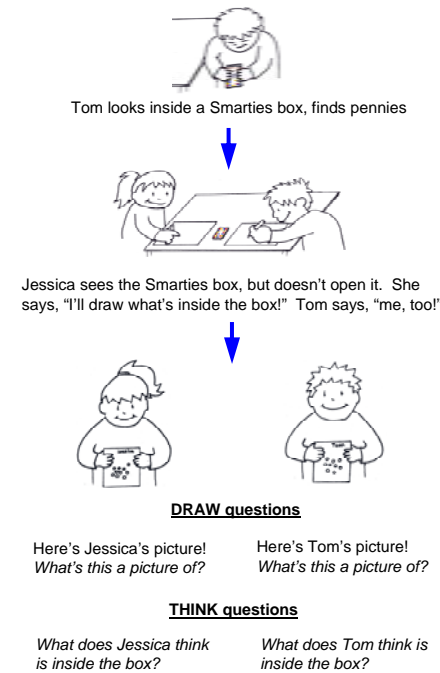


Results: In both *Draw* and *Pretend* conditions, children said that the ignorant actor drew or pretended to be the rabbit that she knew about; when she knew about both rabbits, children were at chance.

Experiment 2: Belief

Question: Will 4-year-olds use an artist's false belief when naming a drawing?

Participants: 12 preschoolers (mean = 3;10, range 3;0 - 4;7)



Results: When the artist had a true belief, children correctly named the drawing. When the artist had a false belief, children were at chance, but they did not attribute to her an intention to draw the true contents of the box.

They made more errors when asked about the artist's false belief itself than when asked to name her drawing based on that belief.

Conclusions

In Experiment 1, 4-year-olds were sensitive to the ignorance of the actor, naming her drawing or pretense according to her knowledge. These findings add to increasing evidence that studies such as Richert and Lillard (2002) underestimate preschoolers' abilities, not only in pretense but also in drawing.

In Experiment 2, preschoolers showed a sensitivity to the artist's false belief when naming a drawing based on that belief. Though they were not able to correctly identify the drawing better than chance, children did not systematically err by naming the picture according to the true contents.

In this experiment, children were better at naming the drawing based on a false belief than they were at identifying the false belief itself. Peterson (2002) found a similar difference with a group of older 4-year-olds: when asked to choose which drawing correctly reflected an artist's belief, children performed better than when asked in a standard false belief format. This incongruity requires further study. It may arise out of a difference between implicit and explicit measures of false belief understanding, or may be due to other factors.

Together, the findings from these two experiments indicate that 4-year-olds take into account the mental states of the artist or pretender, and suggest that they appreciate the mental underpinnings of these types of representational acts.

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