

Theory In Context and Out

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Chapter 9

Explaining the Connection: Pretend Play and Theory of Mind

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Mindreading is an activity most of us engage in so frequently that some have called it ubiquitous, “fundamental to human intellectual functioning” (Mitchell & Lewis, 1994, p. 1). Consider how frequently we actively contemplate others’ minds. An obvious, institutionalized case is serving on juries, when we need to decide if someone did something on purpose: is it murder or manslaughter? National news agenda items are another obvious case: What was Monica Lewinsky thinking? Does Hillary really believe what Bill is saying? In our day-to-day social interactions, we also consider minds: Why did Sue look at me that way, is she out of sorts? How can I convince Charlie to get the beveled mirror? Why is the baby crying—is she tired or hungry? Mentalizing does seem ubiquitous. Although I have argued that frequency and content of mentalizing may vary across cultures, it does seem that everyone, everywhere, must at times consider others’ mental states (Lillard, 1998a).

When and how do humans take this leap into considering the mental worlds of others? Some argue that we are born with a mechanism specialized for mindreading (Fodor, 1992; Leslie, 1994) and others argue that mindreading stems largely from more general cognitive processes (Gopnik & Meltzoff, 1997). But regardless of how, most would agree that by the end of the first year there are important developments that constitute a foundation for, if not the rudiments of, mindreading. These are the activities of social referencing and joint attention (Baldwin & Moses, 1996; Mumme, Fernald, & Herrera, 1996; Wellman, 1993). But these activities, in which infants appear to understand that an adult’s response to an object conveys information about that object, are questionable. They may constitute only the foundation, not the true beginning. Reading someone’s signals does not definitively indicate the realization that the person has a mind, and mental life.

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This realization is often referred to as having a theory of mind (Premack & Woodruff, 1978), for two major reasons (Lillard, 1998b). First, mental states are unobservable entities, hence their existence is theoretical rather than empirical. Second, our knowledge about the mind takes the form of a theory, being causal-explanatory in nature and fairly coherent (Gopnik & Meltzoff, 1997; Wellman, 1990). When Premack and Woodruff posed the question, in a 1978 *Behavioural and Brain Sciences* article, of whether a chimpanzee has a theory of mind, they were asking, essentially, does the chimpanzee attribute intentions to others? As Dennett (1978) and others noted in their commentaries on that article, the true test of whether a chimpanzee or anyone has a theory of mind is not whether or not they attribute intentions to others, because one could do that simply by reading behavior patterns. One can guess that someone walking to the refrigerator is about to get something to eat because that is the usual result after such an approach. The best test, they argued, is whether one admits to the existence of false beliefs: of inaccurate representations of the world. If one realizes that someone might act in a way that does not correspond to reality, then one probably realizes that one represents the world in unique ways.

And so was born the first official test of when children come to understand false beliefs (Wimmer & Perner, 1983), and the current tide of theory of mind research (for an excellent review, see Flavell & Miller, 1998). In the original "false belief" paradigm, children were introduced to a doll, Maxi, who put some chocolate in a drawer then went out to play. While Maxi was out, his mother arrived on the scene, noted the chocolate, and moved it to a cupboard. When Maxi returned, ignorant about the chocolate moving, children were asked, "Where is he going to look for his chocolate? Will he look in the drawer or the cupboard?" Four-year-olds have no trouble on such tasks: they claim that Maxi, being ignorant, will search where he left it. The very surprising finding is that 3-year-olds usually reply that he will look in the new location, despite his ignorance. The conclusion many have drawn from this data is that 3-year-olds do not understand false beliefs.

But there is another out: perhaps 3-year-olds simply do not understand the story. It places a heavy cognitive load to follow all the ins and outs of Maxi and moving chocolate, and 3-year-olds may not be up to this aspect of the task, although they perfectly well understand that people can believe things that are not true. To circumvent this, control procedures were developed in which one had to follow the same sequence of movements and answer similar questions, but mental state issues were removed (Gopnik & Astington, 1988; Lillard & Flavell, 1992). For example, a hat was placed on a bed, and then was moved to a cupboard. A pencil was placed on the bed, and children were asked, "What was on the bed first, the pencil or the hat?" The identical question was asked in a later task, but instead concerned what someone else thought was in a given location. Most 3-year-olds had no trouble with the control, but failed the belief question. Furthermore,

when the exact same stimuli were used but the question concerned what a character wanted rather than thought had been in a location, 3-year-olds performed significantly better (Lillard & Flavell, 1992). Hence, there does seem to be a specific deficit regarding belief.

Second, a simpler procedure was developed, in which children were shown a common box, like a crayon box, and asked what was inside. On their claiming "crayons," the experimenter showed them that in fact there were matches inside, and then closed the box and asked, "When you first saw this box, all closed up, what did you think was inside?" Even under such simple conditions, children under 4 tend to fail this task. They truly do not seem to realize that beliefs can be false. But further, this seems to be part of a more general misconception. Evidence for this comes from two other types of task, both developed by Flavell and his colleagues: appearance-reality (Flavell, Flavell, & Green, 1983) and visual perspective-taking tasks (Flavell, Flavell, Green, & Wilcox, 1980).

In visual perspective-taking tasks, children are shown a picture of, say, a turtle. It is placed on the table between the child and the experimenter, facing one of them. The child is asked, "Do you see this right side up or upside down? And how about me, do I see this right side up or upside down?" As on false-belief tasks, 4-year-olds do well, and 3-year-olds tend to answer incorrectly on one—usually the question about the other person's perspective. In appearance-reality tasks, children are shown a deceptive object, like a candle that looks like an apple. The object's true identity is pointed out and its appearance is discussed, and children are asked, "What is this really and truly, an apple or a candle? And what does this look like to your eyes right now, an apple or a candle?" Again, whereas 4-year-olds do well, 3-year-olds tend to answer both questions in the same way (usually claiming it both is and looks like a candle). As in false-belief tasks, young children do not seem able to maintain that two people can have different takes on one reality, or (looked at from the opposite angle) that one reality might be viewed in two different ways. Further, performance on all these tasks tends to be intercorrelated (Flavell, Flavell, & Green, 1983; Taylor & Carlson, 1997). These intercorrelations point to a single underlying cognitive deficit. Many suppose that deficit is an inability to conceive of mental representations, which are at the crux of diverse interpretation.

But there is a puzzle here. If 3-year-olds do not understand that one object can be interpreted in diverse ways, how in the world do they engage in pretend play, which they usually do a full half-life time earlier (18 months)? In pretend play one routinely considers one object as another. If I pretend a banana is a telephone (a classic example from Leslie, 1987), then I am representing a banana as a telephone. Yet all the while, children appear to bear the real identity of the object in mind (Lillard, 1994; Woolley, 1997). Pretending certainly involves mental representation (for an analysis, see Lillard, 1993). And it would seem that pretense also involves understanding

that one is mentally representing, as Leslie (1987) and others have argued. So how is it that young children can engage in pretense so long before they understand mental representation? Exactly how are these activities related? They certainly are related: several studies have shown that early or more frequent pretenders pass false belief tasks early (Astington & Jenkins, 1995; Lalonde & Chandler, 1995; Youngblade & Dunn, 1995). Exactly what is the nature of this relationship is the goal of these articles.

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