

REPORT

Lion Kings or puppies: the influence of fantasy on children's understanding of pretense

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Abstract

Many have thought that children have an early appreciation of the mind in the case of pretend play. Results from several experiments are against this. However, an experiment by Lillard (Body or mind: children's categorizing of pretense, Child Development, 67 (1996), 1717–1734, Experiment 4) suggested that when a pretense is about a fantasy character, instead of a real entity, children might have a better understanding of the mind's involvement. The present experiment tested this, and found that indeed, when pretending to be a fantasy character is at issue, 4-year-olds are significantly more apt to indicate the mind's involvement. Several possible reasons for this result are discussed.

The field of early social cognition has been re-energized in recent years by the study of how children develop an understanding of minds (Flavell & Miller, 1998). Particularly central has been the issue of when children understand that minds represent the world. Minds are not simply mirrors of reality; they represent reality, and can do so in a variety of ways. One person might represent something as an apple when in fact it is a candle. Another might represent his keys as being in a drawer when someone else knows the keys have been moved to a door. People's ability to see one and the same situation in myriad ways seems obvious to adults, but often seems unappreciated by most children under the age of 4.

Evidence often credited with suggesting that this ability develops in early childhood is from Wimmer and Perner (1983). They showed children a doll named Maxi, who hid his chocolate in a cupboard and then went out to play. While he was out, his mother moved the chocolate to a new location. Children were asked, when Maxi returned, where he would look for his chocolate. Surprisingly, many children under 5 claimed he would look in the new location. Later experiments using more refined methods usually find that 4-year-olds respond correctly on such tasks, but most 3-year-olds do not

(Astington, Harris & Olson, 1988; Moses & Flavell, 1990; Wellman, 1990; Flavell & Miller, 1998). This result is very solid; other methods, like those in which the child hides an object herself, sometimes show better performance and sometimes do not (e.g. the discrepancy of Chandler, Fritz & Hala, 1989, versus Sodian, Taylor, Harris & Perner, 1991). Anecdotally as well, younger children sometimes seem to show evidence of understanding false belief (Dunn, 1988; Reddy, 1991), but the apparent understanding may not be reliable or even valid. In sum, young children appear to lack understanding that minds represent, rather than mirror, reality.

Pretend play is of particular interest in this regard (Leslie, 1987). When one pretends, one mentally represents the pretend situation or object, and projects it onto the existing, real one (Lillard, 1993a). Children pretend as early as 18 months of age, and they appear to understand pretense in others by 28 months (Harris & Kavanaugh, 1993). For example, they understand that if someone pretends to spill pretend tea, the location is 'wet'. Many have assumed that engaging in pretense requires not only having mental representations, but also knowing that one has them (Flavell, 1988; Forguson & Gopnik, 1988; Leslie, 1988; Taylor &

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Carlson, 1997). If it were the case that pretenders know that they mentally represent the pretend situation, then this would constitute an early appreciation of mental representation in the pretense domain. Several theorists (those just cited, except Leslie) have suggested that this decalage does occur. (Leslie, in contrast, believes that there is no decalage because younger children understand representation in belief contexts as well.)

Against the speculation that pretense entails precocious mental representation understanding, some work suggests that young children actually do not understand that pretense involves mental representation (Lillard, 1993b; Rosen, Schwebel & Singer, 1997), or even involves the mind at all (Lillard, 1996). For example, when asked if various events could occur using only one's body, or only one's mind, or whether they required both a body and a mind, 4-year-olds correctly placed think events (like 'Think about your teacher') in the mind box, but placed pretend events (like 'Pretend you are a rabbit') along with physical events (like 'Get wet in the rain') in the body box. This categorizing of pretend events with purely physical, mindless events suggests young children do not perceive mental involvement in pretense. (For discussion of other work that seems to run contrary to this view, see General Discussion in Lillard, 1998.)

Interestingly, though, one experiment in the study by Lillard (1996, Experiment 4) suggested that, for certain types of pretense, children might have somewhat more understanding that the mind is involved: namely, for pretending to be fantasy characters. Sixteen 4- and 5-year-olds (mean age 4;11) were asked to place cards naming various events in the mind, body or both boxes just mentioned. Several items focused on pretense: pretend you are a puppy, a hippopotamus, the Lion King, a mommy/daddy, in your bedroom, in an airplane, and in the jungle. The control items were usually put in their proper boxes, and of the pretense items, 13% were placed in the both box, 34% were placed in the body box, and 53% were placed in the mind box. Because using the both box implies that the child knows that the event requires the mind, this amounts to children claiming that 66% of pretense events required a mind. This was the best performance seen in any experiment in this line, for this age group; in other experiments, performance has hovered around 40% (Lillard, 1996). What might be the reason for this better performance?

Children did particularly well on two items, 'Pretend to be the Lion King' and 'Pretend you are in the jungle', averaging 81% mind and both box designations (hereafter simply 'mind boxes') for each. Closer inspection of the results (see Table 1) suggested particularly strong performance for one group in which the Lion

Table 1 Percentage of mind and both box choices, by group/order in Lillard (1996, Experiment 4)

Group 1	plane	LionK	puppy	jungle	bedrm	hippo	mom
	63	100	100	100	75	100	88
Group 2	puppy	mom	hippo	plane	bedrm	LionK	jungle
	38	25	38	50	25	63	63

King and jungle items were early in the item order; perhaps better performance on these items carried over to other pretense items.

It is also possible, of course, that the groups were somewhat different due to random sample variation: other experiments (cited earlier) have shown that about 40% of 4-year-olds do understand that pretending involves the mind, and probably that more competent subset was over-represented in Group 1. The experiment described here aimed (1) to see if the possible fantasy character effect would replicate with another sample, and (2), if it did, whether the order effect, in which considering fantasy or exotic characters first leads to more insight about other types of entities, would also replicate.

Method

This experiment employs the method of Lillard (1996). Children were shown boxes designating mental and physical activities, and were essentially asked to categorize pretense and other activities by placing them in one of the boxes.

Participants

Twenty-four children from two urban area preschools were tested. Participants ranged in age from 4;1 to 5;7, with a mean age of 4;8, and there were 8 boys and 16 girls. Participants were from middle-class families in a metropolitan area of the United States, spoke English as or as if it were their native language (as judged by the experimenter) and were mostly white, although a range of ethnic backgrounds was represented. Eight additional 4-year-olds were dropped from the experiment because they failed control items (explained later). Several of these were tested under noisy conditions and appeared to be distracted.

Materials

Three large matchboxes (7 × 12 × 4 cm), each with a slot on top into which index cards (4 × 6 cm) could be placed, were used. On the front of each box was a

picture and a label. One box was labeled 'Mind' and had a picture of a light bulb. One box was labeled 'Body' and had a picture of a body. The third (the both box) was labeled 'Mind and Body' and had both pictures. Twenty-nine index cards were used, each with a short phrase written on it. Twelve of these were training cards, nine were controls, and eight were test items. The test and control stimuli are listed in Table 2.

Procedure

Children were brought into a private game room or area of their school. They were given the same introduction to the boxes as children in Lillard (1996, Experiments 3–5). Children were first asked if they knew where their mind and body were. They were then told that their mind was used for certain things like dreaming and remembering and that their body was used for other things like being under a bed. Children were then told that the game was about choosing what went inside each of the boxes. The mind box was described as being for things that you can do with your mind, things that do not require a body at all, and the body box as being for things that you can do with just your body and that do not require a mind at all. The both box was described as being for things that absolutely needed both your mind and body.

Children then received up to 12 training phrases, one on each index card, and were asked in which box each card belonged. Two examples are 'Imagine an ice-cream

cone' and 'Get blown over by the wind'. During the training phase, if children chose the wrong box, they were given feedback on which was the right box. Words like 'think' and 'pretend' that were crucial to the test phase were not used in the training phase. The training phase ended when children correctly responded on five training trials in a row or when all 12 cards had been used.

The test phase consisted of 17 phrases (four ordinary pretend, four exotic pretend, three thinking, three body, and three both). Children received the 17 phrases in one of four quasi-random orders. Half of the subjects received the four ordinary pretend cards before any of the exotic pretend cards. The other half received the exotic pretense items in the opposite order. A further stipulation was that, for each of these two groups, half had the Lion King early in the group of exotic items, and half had it late. This allowed for assurance that a category of items, not the Lion King alone, was responsible for any effect exotic items might have. A final stipulation was that there were never more than two consecutive items from a single category (no more than two physical event controls in a row, for example). Only children who placed at least five of the six think and physical event control cards in the correct box (mind or body, respectively) were included in the final set of 24 children.

Results

The number of choices for each box, for each category, are shown in Table 3. As is apparent from the table, children were not choosing randomly between the three boxes: the both box was chosen on only 14 of 192 trials, or 7% of trials. In contrast, the mind box was chosen on 43% of trials, and the body box on 50%. Because both box choices imply understanding that one needs a mind, for the analysis both box choices and mind box choices were both scored as correct and assigned one point each; body box choices were scored zero. Scores were then summed for each type.

Table 2 Stimulus items

Ordinary

Pretend to be a puppy
Pretend to be a bunny rabbit
Pretend to be a king/queen
Pretend to be a mommy/daddy

Exotic

Pretend to be Pocahantus
Pretend to be Ariel, The Little Mermaid
Pretend to be Batman
Pretend to be the Lion King

Both

Write your name
Sing a song
Bake a cake

Think control

Think about a flower
Think about a cat
Think about your teacher

Physical event control

Fall over if you were pushed
Slide down a slippery hill
Get wet in the rain

Table 3 Number of choices for each box for each type of stimulus

Type	Box choice		
	Both	Mind	Body
Mundane	5	36	55
Exotic	9	47	40
Total	14	83	95

Note: There were 96 choices made for each type, so the numbers in the first two rows approximate percentages as well.

Children chose the mind boxes for an average of 2.3 out of 4 (58% of) exotic items and for 1.7 out of 4 (43% of) ordinary items. Since these numbers are close to 50%, χ^2 goodness-of-fit tests (Siegel & Castellan, 1988) were conducted on the pattern of children's responses, to check that children were not responding haphazardly. These indicated systematic responding for both the ordinary items, $\chi^2(4) = 26.85$, and the exotic items, $\chi^2(4) = 40.67$, both $p < 0.01$.

A preliminary *t* test showed that having the Lion King item early or late within the group of exotic items had no effect. A repeated measures analysis of variance was performed, with item type order (ordinary or exotic first) as the between-subjects factor and item type (ordinary or exotic) as the within-subjects factor. Unlike in the prior experiment, there was no significant effect for item order. Considering exotic items first was not associated with better performance on mundane items. However, as in the prior study, the effect of item type was highly significant: $F(1, 22) = 11.35$, $p < 0.005$. Exotic items went into the mind boxes significantly more often than did ordinary items. Indeed, the ranges for the two types of item were nonoverlapping: 54%–58% mind box choices for exotic items, and 37%–46% for ordinary items.

Looked at another way, whereas 14 children scored the same on exotic and ordinary items, every one of the remaining 10 children performed better on exotic than ordinary items ($p = 0.001$, binomial distribution). No specific exotic item appeared to carry this effect; instead it was simply that many children made one or two more mind or both box choices for the exotic items than they made for the ordinary items. There was a marked tendency to view pretending to be the exotic items as more dependent on a mind.

Discussion

As these data show, young children tend to claim that the mind is involved in pretending to be certain types of fantasy characters more often than they make such claims for pretending to be more ordinary characters. Unlike the prior experiment, considering exotic items first did not immediately extend to mundane items. In the prior experiment, the apparent order influence is probably carried by prior group differences. Still, there was a consistent tendency to heed mental involvement more often when pretending to be fantasy characters was at stake.

Results from other studies are consistent with these. Saltz, Dixon and Johnson (1977) found that disadvantaged preschoolers who were trained over the course of a year to enact fairy tales performed better at year-end on

tests of language, empathy, inhibitory control and other skills than did a second group which was trained to enact ordinary routines like grocery shopping. Fantasy involvement led to improved performance. Taylor and her colleagues found that children who have imaginary companions (and are therefore presumed higher in fantasy) perform better on measures of understanding minds (Taylor, Cartwright & Carlson, 1993; Taylor & Carlson, 1997). Dias and Harris (1988) showed that when logical syllogisms are set in a fantasy context, young children's performance at arriving at their conclusions improves (but see Leavers & Harris, 1997, for indications that this was perhaps not only due to fantasy). This finding could also explain a result by Holmes, Black and Miller (1996), who found that children performed better on false belief tasks concerning locations than those concerning contents of boxes: their locations tasks were enacted by fantasy characters like Big Bird. Taken together, these studies may suggest improvement in reasoning when fantasy is employed.

In addition to being consistent with earlier work, the present study breaks new ground in showing that children have early insight into pretense's mental qualities via certain types of pretense. The insight that pretending involves the mind does not occur for all fantasy characters for all children, but there is a consistent bias towards better insight. Perhaps it is via pretending to be fantasy characters that children come to appreciate pretense's mental qualities, and children who pretend about fantasy most often also come earliest to the insight that pretending is mental. Future research is needed to investigate that possibility.

One question that arises from this research is just how children conceptualize the exotic fantasy stimuli. The fact that children show better insight about such stimuli suggests that at some level children categorize those items differently from the ordinary stimuli. Exactly how they are categorizing them is an important question for future research.

Whereas we considered certain items to be examples of exotic fantasy characters, perhaps another feature like emotional content was actually what caused children to categorize them differently. Children might not even be aware that the fantasy characters are not real. Samuels and Taylor (1992) showed that children are more likely to correctly categorize events as real when those events are emotionally charged (see discussion in Lillard, 1994; Woolley, 1997), and one could argue that the big-screen characters used in this experiment are emotionally charged for young children. A related possibility is that the effect is due to associating the characters with a specific emotional plot. Emotional stories are involving: one must follow the intricacies of a character's evalua-

tions of events to engage in such a story. Perhaps children clue in early to the fact that these more emotionally involved stories would require a mind to act out, whereas simply being a cat, they suppose, could be done on 'automatic pilot'.

A related possibility has to do with the exotic characters in this experiment having a specific identity. The exotic characters are all referred to by name rather than simply by their object type ('a cat'), as the ordinary items are. Perhaps once something has a name, it becomes specific and a standard script will no longer serve for emulating it. One would need a mind to pretend a custom, nonscripted event, and having a name makes one an individual whose life is custom. This would seem to fit with the Saltz *et al.* (1977) data as well, since the fairy tale group was enacting stories about specific characters whereas the other group was enacting daily routines not involving any particular characters.

As another possibility, perhaps a stimulus being cast as a cartoon rather than a realistic-looking figure (reality type) leads children to consider the mind's involvement in pretense. Because one has to imagine cartoons, children are better able to appreciate that a mind would be needed to pretend to be one. One must project the pretense mentally since it does not exist in the world. Perhaps children consider from whence the inspiration to carry out a given pretense, and they assume that if the character exists in the world the inspiration for how to pretend it must come from the world, whereas if it is imagined, the inspiration must come from one's own mind. A less generous interpretation in this line is that children are not answering the pretense question at all, but put the exotic items in the mind box only because the items (like Batman) need to be imagined. However, this does not sit well with children's good performance on the control items: 'Think about your teacher/a cat/a flower' are about real things, and yet they were placed in the mind box as well. Perhaps because children understand think as mental, returning to the first interpretation, they often believe that pretending to be entities that must be imagined is mental as well. This would be consistent with the Woolley findings (Woolley & Wellman, 1990; Woolley, 1995).

Future work should further specify what sorts of pretense enable early insight into pretense's mental aspects. What the present experiment establishes, building on Lillard (1996, Experiment 4), is that when the pretense concerns certain types of fantasy characters, 4-year-olds do appear to be more cognizant of pretense's mental qualities. Perhaps pretending of this sort serves as a bridge to understanding that minds are always involved in pretense.

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