Young Children's Understanding of Different Types of Beliefs

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The purpose of this investigation was to see whether children's understandings of different types of beliefs develop concurrently. Children of 3, 4, and 5 years of age were told or shown that child story characters held beliefs different from their own or from one another, not only concerning matters of physical fact ("false beliefs"), but also concerning morality, social convention, value, and ownership of property. In contrast to the older subjects, most 3-year-olds had difficulty in attributing to others deviant beliefs of all types, except perhaps ownership, sometimes even after having been told repeatedly what the other child believed. In addition, intercorrelations among different belief tasks were positive and substantial. It was suggested that an emerging representational conception of the mind is what enables older preschoolers to understand the possibility of belief differences of all these types.

In trying to understand and predict people's mental states and behaviors, adults appear to make use of a commonsense "folk psychology" or "theory of mind" (e.g., Astington, Harris, & Olson, 1988; Churchland, 1984; D'Andrade, 1987; Wellman, 1990). Within this theory, they interpret their own and other people's behavior in terms of a network of interconnected beliefs, desires, intentions, and other mental states. For example, adults make sense of a fellow shopper's behavior by assuming that the shopper *wants* certain items, *believes* they can be found in this store, *intends* to buy them there, is presently *looking* for them, will have negative *feelings* if this intention cannot be carried out, and so on. A fundamental tenet of this folk theory is that beliefs and other mental states may vary from person to person and also may fail to accord with reality. In the case of beliefs, adults recognize that beliefs are people's mental representations of things and therefore can differ both from one another and from the things they represent.

The acquisition of this and other components of our commonsense theory of mind has recently been the subject of many developmental studies (for reviews, see Astington et al., 1988; Perner, 1991; Wellman, 1990). The concept of false belief has been of particular interest to investigators in this area, both because of its central role in the commonsense theory and because most studies show that, in contrast to 4- and 5-year-olds, 3-year-olds tend to find it surprisingly hard to understand (e.g., Astington et al., 1988; Gopnik & Astington, 1988; Johnson & Maratsos, 1977; Moses & Flavell, 1990; Perner, Leekam, & Wimmer, 1987; Wimmer & Perner, 1983; for a more generous estimate of 3-year-olds' understanding of false belief, see, e.g., Hala, Chandler, & Fritz, 1991). To illustrate, Perner et al. (1987) told 3–5-year-olds a story in which a boy leaves some chocolate in a drawer and then, while he is away, his mother removes it and puts it in a cupboard. The children were then asked either where the boy thinks the chocolate is or where he will look for it. Perner et al. (1987) found that the 4- and 5-year-olds correctly tended to indicate the drawer in response to both questions, whereas the 3-year-olds incorrectly tended to indicate the cupboard.

How general (widespread, robust, etc.) are the young child's difficulties in understanding beliefs? For example, do they appear in a variety of more and less demanding task conditions? Researchers have tried to make false belief tasks easier for young children by making them more engaging or more meaningful. Moses and Flavell (1990)

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presented false belief tasks in a movie format with real people involved in plots designed to be of great interest to young children. Although 3-year-olds did indeed find these tasks very interesting and easily remembered all the critical events, they were still largely unsuccessful in attributing false beliefs to the people. Investigators have also tried to situate the false belief task in a meaningful social context—that of deception. The question then becomes whether 3-year-olds understand that deceptive acts achieve their effects by engendering false beliefs in the deceived person's mind. There is no clear answer to this question as yet: some researchers find evidence that they do (Chandler, Fritz, & Hala, 1989; Hala, 1991; Hala et al., 1991; Lewis, Stanger, & Sullivan, 1989) and others find evidence that they do not (Barrett, Plefka, & Sniffen, 1991; Peskin, 1991; Ruffman, Olson, Ash, & Keenan, 1991; Russell, Mauthner, Sharpe, & Tidswell, 1991; Sodian, 1991; Sodian, Taylor, Harris, & Perner, 1991; Sullivan & Winner, 1991); for a recent review of this controversy, see Ruffman et al. (1991).

Investigators have also tested the possibility that the linguistic demands of the task are responsible for young children's failures. Perhaps they simply do not know the meaning of the word "think," for example. Moses (1990) has recently summarized the evidence against this possibility as follows: "Against this, however, if instead of asking them what the protagonist thinks, they are simply asked where the protagonist will look or go, what the protagonist will do, say, or want, how the protagonist will feel, or whether the protagonist will be surprised on discovering the truth, their performance does not improve. . . . Moreover, in several studies children have performed relatively well on control tasks roughly equivalent to the false belief tasks in their general linguistic demands" (pp. 10–11).

Researchers have also tried to help children perform correctly on false belief tasks by providing stronger, more explicit clues to the other person's false belief. Experimenters have shown the person behaving in accord with the false belief rather than reality, and acting very surprised on discovering the real state of affairs (Flavell, Flavell, Green, & Moses, 1990; Hartl & Wimmer, 1989; Moses & Flavell, 1990). In addition, they have attempted to make the false belief more salient by causing the children themselves to have that same false belief initially and then asking them about that initial belief (Gopnik & Astington, 1988; Gopnik & Slaughter, 1991; Wimmer & Hartl, 1991); the children could then solve the task simply by recalling their own prior belief. None of these intended aids have proven very helpful to 3-year-olds.

Experimenters have gone even further by actually *telling* the children what the person's false belief is, and then asking them either to say how the person will act (Flavell et al., 1990; Harris, Johnson, Hutton, Andrews, & Cooke, 1989; Wellman & Bartsch, 1988), or—easiest of all—to simply restate the person's belief (Flavell et al., 1990; Lillard & Flavell, in press; Sullivan & Winner, 1991; see also Ruffman et al., 1991). Even these extreme forms of assistance have not proven very helpful. The following study (Flavell et al., 1990, Study 3) illustrates their lack of efficacy. The subjects were 20 young 3-year-olds. The experimenter and the subject first agreed that a particular cup was not white. It was then positioned so that they could see it, but another adult (Ellie), who just entered the room, could not. The experimenter then asked Ellie whether she thought the hidden cup was white. Ellie replied: "I can't see the cup. Hmm, I *think* you have a white cup over there. I *think* you have a cup that *is* white." The experimenter then asked the child two questions in a whisper: first, "Do *you think* we have a white cup over here?" and then, "How about Ellie? She can't see this cup. Does *she think* we have a white cup over here?" Of the 20 subjects, 19 correctly said they themselves thought it was not white; but of these 19, only five then went on to say that Ellie thought it *was* white, despite the fact that she had just stated precisely that belief a moment ago.

In addition to generality across task conditions, there is also substantial generality over young subjects and over the individuals whose false beliefs these subjects need to identify. As to subjects, 3-year-olds from (at least) Austria, Cameroon, Canada, Germany, the United Kingdom, and the United States have shown similar difficulties in attributing false beliefs (Avis & Harris, 1991). As to individuals, young children seem about equally unable to attribute false beliefs to dolls, story or movie characters, themselves at an earlier point in time, and other "live" children and adults (Flavell et al., 1990; Gopnik & Astington, 1988; Johnson & Maratsos, 1977; Moses & Flavell, 1990; Perner et al., 1987; Wimmer & Perner, 1983).

The purpose of this investigation was to find out whether there is a similar kind of generality with respect to different *types* of beliefs. Almost all of the research to date has examined young children's understanding of "fact beliefs" only, that is, convictions regarding matters of perceptible and easily verifiable physical fact, such as the whereabouts of the boy's chocolate in Perner et al.'s (1987) story. We wondered whether understanding of other, different sorts of beliefs would show a similar and concurrent developmental course, that is, from little or no usable understanding at age 3 to moderate to good understanding at age 4–5. Five types of belief were investigated in one or more of four studies—fact beliefs plus four other types. The other types are listed below, together with examples: (*a*) value—"I think this is a pretty color"; (*b*) moral—"I think it is okay to break another child's toy"; (*c*) social-convention—"I think it is okay to wear pajamas to school"; (*d*) ownership—"I think this is my jacket." It was unclear to us how much developmental synchrony to expect across these five types. On the one hand, the fact that they are all beliefs would lead one to expect considerable synchrony a priori. Whatever skills or knowledge may be needed to attribute to another person one type of belief that the child does not hold should serve in attributing other types of beliefs that the child does not hold. On the other hand, Flavell et al. (1990) found that 3-year-olds, although not at ceiling on value-belief tasks, performed significantly better on them than on fact-belief tasks. The fact that the grounds for the "correct" belief tend to be less certain or less perceptible in the case of the non-fact beliefs might make them easier for children to manage. That is, if the truth of the matter is less perceptible, less concretely verifiable, it might be easier for young children to imagine that different people could have different beliefs concerning it. There is evidence that violations of social convention tend to be rated by preschoolers as less wrong, less generalizable, and more relativistic and alterable than moral transgressions (Smetana, 1981, 1985; Turiel, 1983). It seemed possible that preschoolers would find deviant social convention beliefs easier to understand than deviant moral beliefs because they may not seem so wrong, and because, like value beliefs, they seem more a matter of personal preference than objective reality.

The assessment methods used in Studies 1–3 were variants of the explicit-clues one described previously (e.g., Flavell et al., 1990, Study 3): first, verbalize the other person's belief and get the subject to verbalize his or her own belief, which always differed from the other person's; then, ask the subject which of those two beliefs that other person holds. The procedure used in Study 4 was slightly different, but also intended to be facilitative of correct responding. The purpose of using such easy-seeming, supportive tasks was to detect any minimal, beginning understanding of beliefs that young children might evince.

Study 1

Study 1 was a preliminary, exploratory study dealing with only one category of non-fact belief, namely, moral beliefs. Its purpose was to assess 3-, 4-, and 5-year-olds' understanding that another person's moral belief could differ from their own: specifically, their understanding that the other person could think it was "okay" to perform an action that they thought was "not okay" to perform.

Method

Subjects

Three groups of children were tested, with eight girls and eight boys in each group. The mean ages for the three groups were 3-3 years (range 3-1 to 3-5), 4-2 (range 4-0 to 4-5), and 5-0 (range 4-11 to 5-4). The children were drawn from a university laboratory preschool. They were mostly white children from upper-middle-class backgrounds, although exact demographic information was not available. Ten additional children were dropped from the study: three because they seemed insufficiently proficient in English, and seven (three 3-year-olds, three 4-year-olds, and one 5-year-old) because they stated on at least one Explicit task that they thought the aggressive acts were okay after being told that the story character held that belief. All testing was done by the same female experimenter.

Procedure

Subjects were told six stories about children's aggressive or destructive behavior toward other children and for each one were asked first whether *they* thought the behavior was okay and then whether *the aggressing child* thought it was okay. The two characters in each story, the aggressor and the victim, were always of the same sex. There were two pictures for each story: the first showed the two characters before the aggressive action took place; the second

showed the result of the aggressive act (but not the victim's face). These six stories were divided into three sets of two stories. Each set had one story that portrayed aggression toward another child's person and one that portrayed aggression toward another child's property. The *Nonexplicit* set, always given first, contained two stories in which the thoughts of the aggressor were never stated except to say that he or she was "mad at" the victim. The *Explicit* set, always given second, contained, in addition, explicit statements that the aggressor believed that the act was "okay" to perform. The *Inconsistent* set, always given last, contained two stories in which the stated belief of the aggressor did not coincide with his or her behavior. For example, "Teresa thinks it is *not* okay for her to push Henrietta down, but she pushes her anyway." (In this and the other three studies that followed, key words were stressed by the experimenter, e.g., "*not* okay," "*is* okay.")

There was a boy-pair and a girl-pair version of each story, and each subject heard three stories with a pair of girls and three stories with a pair of boys. Half the subjects of each sex heard stories about girls with aggression toward property and stories about boys with aggression toward children. The other half of the subjects received the other stories. The subject was then asked whether he or she thought this behavior was okay or not and then whether the aggressor thought this behavior was okay or not. The order of tasks within a set and the sex of the characters in each story were counterbalanced; choices within questions were unsystematically varied.

The experimenter introduced the procedure by saying, "Today I'm going to show you some pictures and tell you about some things some kids your age did. They are your age but they go to another school." Before the story began the children were shown the first picture and introduced to the two characters: "This is Agatha. This is Lillian." We chose names that were not represented in any of the classrooms. The experimenter continually pointed to the character being referred to, especially during the questioning, so that there could be no confusion about which character was meant.

Nonexplicit stories.—Story 1: "Agatha [Hank] is mad at Lillian [Ralph]. She hits Lillian in the face [pause]. So, Agatha hit Lillian in the face, didn't she?" The two test questions were: "Do you think it was okay or not okay to hit Lillian? Did Agatha think it was okay or not okay to hit Lillian?" Story 2 involved kicking down and ruining another child's tower.

Explicit stories.—Story 1: "Lydia [Lester] is mad at Judith [Hugh]. Lydia thinks it is okay for her to bite Judith. She bites her on the leg. So, Lydia thought it was okay to bite Judith on the leg, and she did it, didn't she?" The two test questions followed. Story 2 involved breaking another child's balloon. We thought that even very young children might find these Explicit tasks easy; hence the inclusion of a "young" 3-year-old group in this initial study.

Inconsistent stories.—Story 1: "Teresa [Ed] is mad at Henrietta [Wilbur]. Teresa thinks it is not okay for her to push Henrietta down, but she pushes her anyway and Henrietta falls down. So, Teresa thought it was not okay to push Henrietta but she did it anyway, didn't she?" The two test questions followed. Story 2: "Gilbert [Lucy] is mad at Sullivan [Carla]. Gilbert thinks it is okay for him to tear up Sullivan's painting and ruin it. He sees Sullivan's painting but he goes outside to play with a friend instead. So, Gilbert thought it would be okay to tear up Sullivan's painting, but he didn't do it, did he?" The two test questions, asked in conditional form, followed.

The Nonexplicit tasks have no clearly correct answers ("I don't know" would be correct but was not a response option). "Okay" was somewhat arbitrarily taken as the correct response to this task for purposes of data analyses. We included these tasks to see to what extent subjects would attribute to the aggressor a moral belief different from their own based, not on the aggressor's explicit statement of the different belief, but only on the information that the aggressor was "mad" at the victim and did commit the aggressive act. The Inconsistent tasks were added at the end of the session as a rough check for a possible tendency to base moral-belief attributions solely on the aggressor's action or lack of action. That is, children might have the implicit rule that the aggressor must think the act is okay if he or she carried it out and not okay if he or she did not carry it out, regardless of his or her stated moral belief on the matter. Notice that such a rule is "advanced" in that it presupposes acceptance of the possibility that another person's moral belief could be different from one's own. The Explicit tasks were the tasks of greatest interest. They were designed to test the extent to which preschoolers of different ages would attribute a moral belief

different from their own to another child under highly facilitative task conditions—namely, the other child's explicit endorsement of that morally deviant belief.

Results and Discussion

Inspection of the data in this and subsequent studies showed that whether the transgression was directed toward person or property had no significant effect on performance. Consequently, the two Nonexplicit tasks were collapsed to yield scores of 0, 1, or 2 correct per subject; the same was done with the two Explicit tasks. A 3 (age) × 2 (sex) × 2 (task: Nonexplicit vs. Explicit) repeated-measures analysis of variance performed on these scores revealed significant main effects for age, $F(2,42) = 5.45$, $p < .01$, and task, $F(1,42) = 7.94$, $p < .01$, with no significant interactions. As to age, post hoc Tukey tests showed that the 5-year-olds performed better ($p < .05$) on these tasks than the 3-year-olds did; the performance of the 4-year-olds was intermediate between the other two groups but not significantly different from either. As to tasks, subjects were more likely to attribute a moral belief different from their own on Explicit tasks than on Nonexplicit ones. Table 1 shows the performance of each age group on each type of task.

The right-most column of the table shows clearly that the 3-year-olds had great difficulty attributing to another person a moral belief different from their own. They were correct on only 19% of tasks in which the aggressor either acted in accordance with a deviant belief but did not state it (Nonexplicit tasks) or stated it but did not act in accordance with it (Inconsistent task 2). Even more striking, they were correct on only 31% of the Explicit tasks, the tasks in which the aggressor both explicitly stated the deviant belief and acted in accordance with it. Three-year-olds who erred on Explicit tasks were informally retested on an Explicit task at the end of the session. If on that retest they again incorrectly attributed a "not okay" belief to the aggressor, they were corrected (e.g., "*Actually,* she thinks it *is* okay to hit Lillian") and immediately asked the same question again ("Does she think it's okay to hit Lillian?"). Of the 12 3-year-olds receiving this corrective feedback and repeated question, 10 persisted in responding "not okay"; some even persisted through one or more additional cycles of corrective feedback and questioning. Thus, the 3-year-olds tended to respond throughout as

TABLE 1

Number of Subjects Passing 2, 1, or 0 Tasks and Percentage of Responses Correct in Each Age Group on Nonexplicit, Explicit, and Inconsistent Moral Tasks in Study 1

Task and Age	Tasks Correct			Percentage
	2	1	0	
Nonexplicit:				
3	3	0	13	19*
4	8	2	6	56
5	9	1	6	59
Explicit:				
3	4	2	10	31
4	9	1	6	59
5	12	3	1	84*
Inconsistent:				
1. Not okay–acts:				
3	. . .	15	1	94*
4	. . .	9	7	56
5	. . .	10	6	63
2. Okay–does not act:				
3	. . .	3	13	19*
4	. . .	5	11	31
5	. . .	7	9	44

Note.—"Okay" was considered correct for scoring purposes on the Nonexplicit tasks. Percentages significantly ($p < .05$) different from chance expectation of 50% by t test are marked with an asterisk. There are no entries in the "2" column for Inconsistent tasks because only one task of each Inconsistent type was administered.

if they had simply been asked whether the aggressive act *itself* was okay, intrinsically and absolutely, rather than whether someone *believed* it was.

In contrast, a number of the older subjects did attribute to the story characters moral beliefs to which they themselves did not subscribe. They even did so on 56%–59% of the Nonexplicit tasks, prior to any direct evidence, of the sort provided in the subsequent Explicit tasks, that other people might actually harbor such deviant beliefs. As Table 1 shows, 10 4-year-olds and 10 5-year-olds (vs. three 3-year-olds) made these attributions on at least one of the two Nonexplicit tasks; on the Explicit tasks the corresponding numbers were 10 and 15 versus 6. However, Table 1 also shows that the performance of the 4-year-olds as a group on the Explicit tasks was not significantly above chance, and that six of them were correct on neither Explicit task.

The behavior of the 3-year-olds on the two Inconsistent tasks is easy to interpret: they tended to get the "Not okay–acts" one right and the "Okay–does not act" one wrong because they tended to give a behavior-oriented rather than belief-oriented "not okay" response to both. The meaning of the older subjects' behavior is less clear. Seven of them (three 4-year-olds and four 5-year-olds) erred on both of the Inconsistent tasks, and five of these seven had correctly responded "okay" to the preceding four tasks. These children could have simply been consistently equating the aggressor's belief with his or her action—the response strategy these tasks were designed to detect. Although the other older subjects did not show this specific pattern, it is apparent from Table 1 that a number of them erred on at least one Inconsistent task, usually the second. Perhaps a belief and an action that are opposed to one another constituted an information-processing overload for them. Or perhaps the opposition simply confused them. Interestingly, the older children's incorrect answers on the Inconsistent tasks suggest that their correct answers on the Explicit tasks reflect some genuine understanding, rather than a mindless parroting of what the experimenter said the aggressor's belief was. Had they consistently followed a parroting strategy, they would have performed perfectly on the Inconsistent tasks because the aggressor's beliefs were explicitly stated in these tasks as well. The 3-year-olds' very strong resistance to repeating the aggressor's stated belief also suggests that a parroting strategy was not the natural response to lack of understanding in this task situation.

Whatever the explanation of the Inconsistent task findings, the main results of this study appear to be quite straightforward: they suggest that deviant moral beliefs are about as hard to comprehend for 3-year-olds as false fact beliefs are. In contrast, 5-year-olds, and to a lesser degree 4-year-olds, appear to have at least some understanding that people could have "wrong" moral beliefs as well as wrong fact beliefs.

Study 2

The results of Study 1 suggest that children's understanding of moral beliefs may have a developmental course very similar to that for fact beliefs, that is, one showing a considerable increase in understanding between 3 and 4–5 years of age. The evidence for this similarity is only indirect, however, inasmuch as it is based on a comparison of the moral-belief results of Study 1 with the fact-belief results of previous studies that used different subjects and somewhat different methods. The purpose of Study 2 was to make direct comparisons between fact and moral beliefs, using the same methods and the same subjects, and also to extend the comparison process to include value and social-convention beliefs. The method used was the Explicit-task procedure employed in Study 1.

Method

Subjects

Two groups of children were tested, with eight girls and eight boys in each group. The mean ages for the groups were 3–6 years (range 3-3 to 3-10) and 4-4 years (range 4-0 to 4-10). The children were drawn from the same university laboratory preschool as described in Study 1, but had not participated in that study. Five additional children (two 3-year-olds and three 4-year-olds) were dropped from the study because their own stated beliefs on one or more value or social-convention tasks were the same as the story character's. All testing was done by one female experimenter.

Procedure

Subjects were told two stories of each type, for a total of eight tasks. They were first asked about their own belief and then about the story character's belief. The latter was selected to be contrary to what we expected the child's belief to be. In each story, the character's belief was explicitly stated twice.

The fact stories concerned a story character's false belief about the contents of a box. The value stories were about a character's deviant belief about the prettiness of an object or color. The moral and social-convention stories concerned a character's deviant belief that a transgression was "okay." A set of three pictures depicting the characters and events of the story was presented with each story. For each set of stories, the character in one story was a girl and the character in the other was a boy. The moral-belief stories involved two characters, the aggressor and the victim. The two characters were the same sex. As in the previous study, the names of the characters were not represented in any of the classrooms.

The eight stories were blocked according to type, thus creating four sets of two stories each. The order of stories within a set was counterbalanced, as were the forced-choice responses for the test questions. A Latin square design was used to counterbalance the order in which the four sets were presented.

Before each story began, the children were shown the first picture and asked about their own belief. The experimenter then agreed with the child's response and introduced the story. In the fact stories, the child's belief was confirmed both by the experimenter and by the child's lifting the flap on the box and looking inside. The story character was not in view at this time and therefore could not "peek" in the box. An example from one of the moral tasks illustrates the general format of the discussion prior to the start of each story. "See this picture of a child playing with blocks." "Do you think that it is okay to steal other children's blocks or bad to steal other children's blocks?" "Me too. I think it's bad, too. But let me tell you a story about a child named Randy." All of the stories were constructed such that the child should be highly likely to have a different belief from the story character about the object or event in question. As the experimenter presented the story and asked the questions, she pointed to the character to whom she was referring.

Fact stories.—In this as in the other three task types there were three pictures for each story. The first consisted of a small box (candy or cereal) with a flap, the second showed the story character with either a handful of paper or an injured finger, and the third showed the character reaching for the box. Story 1: "Lydia wants to draw a picture. Lydia thinks there are markers in the candy box. Lydia reaches for the candy box. So Lydia thinks that there are markers in the candy box, and she reaches for the candy box." The two test questions were: "Do you think that there are candies in the box or markers in the box? Does Lydia think there are candies in the box or markers in the box?" Story 2 involved a child with a hurt finger who erroneously thought there were bandaids in a cereal box.

Value stories.—Story 1: "George wants to paint his room a pretty color. George thinks this [an ugly greenish-brown color] is a pretty color. George picks this color. So George thinks this is a pretty color and he picks it." The two test questions were: "Do you think that this is a pretty color or a yukky color? Does George think that this is a pretty color or a yukky color?" Story 2 involved an ugly dried flower that a story character thought was pretty.

Moral stories.—Story 1: "Randy wants to play with the blocks. Randy thinks it is okay to steal Aaron's blocks. Randy steals Aaron's blocks. So Randy thinks that it is okay to steal Aaron's blocks, and he steals them." The two test questions were: "Do you think that it is okay to steal Aaron's blocks or bad to steal Aaron's blocks? Does Randy think that it is okay to steal Aaron's blocks or bad to steal Aaron's blocks?" Story 2 involved a child who thought it was okay to hit another child.

Social-convention stories.—Story 1: "Robin wants to rest her feet. Robin thinks it is okay to put her feet on the dinner table. Robin puts her feet on the dinner table. So Robin thinks that it is okay to put her feet on the dinner table, and she puts them there." The two test questions were: "Do you think that it is okay to put your feet on the dinner table or bad to put your feet on the dinner table? Does Robin think that it is okay to put her feet on the dinner table or bad to put her feet on the dinner table?" Story 2 involved a child who thought it was okay to eat applesauce with his fingers.

Results and Discussion

As in Study 1, responses to the two tasks of each type were combined to yield scores of 0, 1, or 2. A 2 (age) × 2 (sex) × 4 (task type: fact vs. value vs. moral vs. social-convention) repeated-measures analysis of variance performed on these scores revealed significant main effects for age, $F(1,28) = 10.55$, $p < .01$, and task type, $F(3,84) = 4.29$,

TABLE 2

NUMBER OF SUBJECTS PASSING 2, 1, OR 0 TASKS AND PERCENTAGE OF RESPONSES CORRECT IN EACH AGE GROUP ON FACT, VALUE, MORAL, AND SOCIAL-CONVENTION TASKS IN STUDY 2

	TASKS CORRECT			
	2	1	0	PERCENTAGE
Fact tasks:				
3 years	10	2	4	69
4 years	13	2	1	88*
Value tasks:				
3 years	7	3	6	53
4 years	13	2	1	88*
Moral tasks:				
3 years	3	4	9	31
4 years	12	3	1	84*
Social-convention tasks:				
3 years	6	1	9	41
4 years	11	4	1	81*

NOTE.—Percentages significantly ($p < .05$) different from chance expectation of 50% by t test are marked with an asterisk.

$p < .01$. There was also a near-significant interaction between age and task type, $F(3,84) = 2.57$, $p < .06$: the task type differences occurred mainly in the 3-year-old group. Four-year-olds performed significantly better than 3-year-olds on these tasks. Post hoc Tukey tests showed that subjects performed significantly better on fact tasks than on moral ($p < .05$) and social-convention ($p < .05$) ones. The 3-year-olds did not perform significantly better than chance expectation of 50% correct even on the fact tasks, however, whereas the 4-year-olds did so on all four tasks. Seven of the 16 3-year-olds were correct on six or more of the eight tasks and seven were correct on two tasks or fewer; the corresponding numbers for the 4-year-olds were 14 and 1. Table 2 shows the performance of each age group on each type of task. Table 3 shows the inter-correlations among the four types of tasks for the 3-year-olds (those for the 4-year-olds are equally high, but are of doubtful meaningfulness given that group's near-ceiling performance).

As indicated previously, the main purpose of this investigation was to find out whether understanding of other sorts of beliefs would show a developmental course concurrent with that previously found for fact beliefs, namely, from little or no understanding at age 3 to moderate to good understanding at age 4–5. Two results of this study suggest that they do have similar developmental courses. First, performance on all four tasks improves with age between 3 and 4 years, as evidenced by (*a*) the significant age effect and (*b*) by the finding that performance was significantly better than chance

TABLE 3

PEARSON CORRELATION COEFFICIENTS AMONG TYPES OF BELIEF TASKS IN STUDIES 2 AND 3 FOR 3-YEAR-OLDS

	VALUE		MORAL		SOCIAL CONVENTION	
	Study 2	Study 3	Study 2	Study 3	Study 2	Study 3
Fact	.54*	.68**	.30	.75**	.47	.71**
Value			.57*	.69**	.75**	.64**
Moral					.75**	.63**

NOTE.—Degrees of freedom for these correlations are 14 for Study 2 and 22 for Study 3.
* $p < .05$.
** $p < .01$.

on all four tasks at age 4, but on none of the tasks at age 3. Second, the substantial positive correlations presented in Table 3 indicate that 3-year-olds who have developed the ability to attribute to another person a different-from-own belief of one type tend to have also developed the ability to do the same for different-from-own beliefs of other types. These two results constitute at least suggestive evidence that the same developing knowledge or ability may be mediating children's understanding of all four types of beliefs. The significant differences in difficulty among some of the tasks would appear to qualify this picture of developmental synchrony. However, we are not inclined to put much credence in them because no such differences were observed in Study 3, a better-controlled replication of the present study.

Study 3

Study 3 was designed to determine whether the pattern of results found in Study 2 would replicate using a different, better equated set of test items and a procedure modified to make the tasks even easier for the children. We reasoned that asking for the subject's point of view immediately prior to asking for the point of view of the other child, as was done in Studies 1 and 2, may have made the subject's own point of view so salient at the moment the other's view was requested that it may have masked any nascent understanding about perspectival differences on these tasks. Therefore, in Study 3 subjects were first asked for their own view, then told twice that the other possessed an opposing point of view, and then asked for that other's point of view.

Additional controls were also instituted. First, unlike Study 2, in which the fact and value tasks were about object properties and the moral and convention tasks about behaviors, all items in Study 3 were about behaviors. Second, the other's views were selected to be about equally deviant or strange across all four sets of tasks. They were less well equated in this regard in Study 2: in that study the story characters' fact beliefs, although false, seemed to us to be less peculiar than their other beliefs (e.g., boxes do sometimes end up with contents other than those they were designed to hold). Finally, at the end of the procedure children were given a test of their ability to recognize that an adult would like to drink coffee even though they would not. The results of a previous study (Flavell et al., 1990, Study 1) suggested that 3-year-olds could manage such a task, involving as it does people's likes or desires rather than beliefs. We included it only as a kind of control to show that any failures on the main tasks could not be due to an across-the-board inability or unwillingness to give different answers for self and other.

Method

Subjects

The subjects were 24 3-year-olds and 24 4-year-olds (12 girls, 12 boys in each group) from the same preschool used in the preceding two studies. None of the subjects had participated in Studies 1–2. The mean ages for the groups were 3-6 years (range 3-3 to 3-11) and 4-6 years (range 4-1 to 4-11). One female experimenter tested all the subjects. One additional child (a 3-year-old) was excluded from the study because she said she thought all the immoral acts described in the study were okay to do!

Procedure

As in Study 2, subjects were presented with two deviant beliefs for each of the four types for a total of eight tasks. The tasks were blocked according to task type, and the orders of the four blocks were counterbalanced. Half the subjects received the two tasks within each block in the order given below, and half in the reverse order.

The tasks were introduced to the subject much as in Study 2. The procedure will be illustrated using a moral task. The experimenter said: "This is about kicking another child. Do you think it is okay or not okay to kick another child?" The experimenter then selected randomly from a stack of photographs of four male and four female children of preschool age that had been cut from magazines. "This is [Suzy]. Suzy [experimenter points] thinks it is okay to kick another child. She thinks it is okay to do that. Does Suzy [experimenter points] think it is okay or not okay to kick another child?" If the experimenter selected a girl picture for a child's first task within a block, she chose a boy for the second task, and vice versa so that within each task type the subject was shown a child of each sex. No picture was used twice during the procedure. The stimulus items were as follows:

Fact tasks.—Task 1: "This is about reading. Do you think cats do or don't read books? This is [Hank]. Hank thinks cats do read books. He thinks cats do do that. Does Hank think that cats do or don't read books?"

Task 2: "This is about flying. Do you think dogs don't or do fly?"

Value tasks.—Task 1: "This is about eating grass. Do you think it is fun or not fun to eat grass?" Task 2: "This is about cleaning up your room all day. Do you think it is not fun or fun to clean up your room all day?"

Moral tasks.—Task 1: "This is about breaking another child's toy. Do you think it is okay or not okay to break another child's toy?" Task 2: "This is about kicking another child. Do you think it is not okay or okay to kick another child?"

Social-convention tasks.—Task 1: "This is about wearing pajamas to school. Do you think it is okay or not okay to wear pajamas to school?" Task 2: "This is about yelling during snack time. Do you think it is not okay or okay to yell at the snack table?"

Similar to what was done in Study 1, if the child was incorrect about the other's point of view on his or her eighth (last) task, whatever type of task it was, the experimenter gave corrective feedback and re-asked the question. She said, for example, "Actually, [Hank] thinks it is fun to eat grass. Does Hank [experimenter points] think it is fun to eat grass?" If the child was still incorrect, the experimenter repeated the feedback and test cycle once again.

Likes task.—At the end of the procedure each subject was asked: "Do you [like] to drink coffee or do you [hate] to drink coffee?" Girl subjects were then shown a picture of a woman, and boy subjects a picture of a man. "This is a grown-up named [Larry]. Larry [experimenter points] likes to drink coffee. He likes to do that. Does Larry [like] to drink coffee or [hate] to drink coffee?" Half of the subjects were given the like option first and half the hate option first. Three 3-year-olds and five 4-year-olds claiming they liked to drink coffee were given back-up items (salty lemonade, salty water, and brussels sprouts).

Results and Discussion

As in Study 2, the responses to the two tasks of each type were combined to yield scores of 0, 1, or 2. A 2 (age) × 2 (sex) × 4 (task type: fact vs. value vs. moral vs. social-convention) repeated-measures analysis of variance performed on these scores yielded a significant main effect for age only, $F(1,44) = 15.72$, $p < .001$. The 4-year-olds performed better than the 3-year-olds, as in Study 2. However, the task differences found in Study 2 were not found in this better-controlled replication. As expected, children performed well on the one-trial "likes" task given at the end of the session (83% correct and 100% correct for younger and older subjects, respectively), showing that they were willing to answer some questions differently for self and other. Table 4 shows the performance of each age group on each type of task. The intercorrelations

TABLE 4

Number of Subjects Passing 2, 1, or 0 Tasks and Percentage of Responses Correct in Each Age Group on Fact, Value, Moral, and Social-Convention Tasks in Study 3

	Tasks Correct			
	2	1	0	Percentage Correct
Fact tasks:				
3 years	6	7	11	40
4 years	17	2	5	75*
Value tasks:				
3 years	6	9	9	44
4 years	20	2	2	88*
Moral tasks:				
3 years	5	7	12	35
4 years	19	0	5	79*
Social-convention tasks:				
3 years	5	8	11	38
4 years	18	2	4	79*

Note.—Percentages significantly ($p < .05$) different from chance expectation of 50% by t test are marked with an asterisk.

among tasks for the 3-year-olds are given in Table 3.

Like those of Study 2, the results of this study suggest that children's understandings of these four types of belief develop concurrently. First, the four types of tasks show similar, marked increases in correct performance between 3 and 4 years of age (Table 4). Second, as in Study 2, the intercorrelations among the tasks were positive and quite high (Table 3). These findings suggest that children may be using the same set of developing competencies to solve the different tasks.

A striking result of this study was the failure once again of many 3-year-olds and even some 4-year-olds to identify the story character's belief, despite the fact that it was stated twice, and despite the fact that the subject's own belief was not verbalized just prior to the request for the story character's. Even though provided with these aids, only six of the 24 3-year-olds were correct on six or more of the eight tasks, whereas 12 were correct on two tasks or fewer; the corresponding numbers for the 4-year-olds are 19 and 4. As in Study 1, the questioning that followed an incorrect response on the last task provided additional evidence for their difficulties in attributing deviant beliefs. Thirteen 3-year-olds and five 4-year-olds were incorrect on this task. The experimenter then repeated the story character's beliefs and then asked once again what that belief was. Ten of the 13 and five of the five again reported their own belief, and when corrected and questioned once more, six of the 10 and three of the five persisted in responding with their own belief yet a third time. Siegal (1991) has recently argued that young children are apt to misinterpret repeated asking of the same question in an experimental setting as a tacit request to change their original answer, in hopes of telling the experimenter what he or she wants to hear or for some similar reason. The result is an underestimation of the child's conceptual competence, born of inadequate knowledge of conversational conventions. The very opposite seems to have happened in this study. That is, these children kept reiterating the same answer even when the nature of the questioning very clearly suggested a change of answer. The most likely reason they did so is that they were sure their answer was correct.

The results of Study 3 are thus consistent with those of Studies 1 and 2 in showing that 3-year-old subjects often persisted in responding as though they had been queried about whether the behaviors were in accordance with the way things are in reality, intrinsically and absolutely. There was very little evidence in any of the three studies that such subjects understood that the questions referred to beliefs about behaviors rather than to the behaviors themselves, even though the questions were very clearly stated.

Finally, both Studies 2 and 3 failed to replicate Flavell et al.'s (1990) finding that 3-year-olds find value beliefs easier than fact beliefs. In those studies, the other person whose belief was requested was a second experimenter known to the children rather than a depicted stranger; she was a physically present, live person who gave vivid, attentionally compelling evidence of her deviant fact and value beliefs. It is at least conceivable that her salient presence and behavior forcibly brought home to the children in those value tasks that she really did not like what they liked and therefore did not believe to be desirable ("yummy," "pretty," etc.) what they thought was desirable (value beliefs). The evidence that she also had different beliefs than they did about matters of physical fact (fact beliefs) may not have been so salient for them. Whether there is anything to this line of explanation can only be decided by future research.

Study 4

Part of the difficulty that 3-year-olds had with the tasks used in Studies 1–3 may have stemmed from the fact that the particular beliefs they had to attribute to the story characters seemed so bizarre and inexplicable. Perhaps the children really did generally understand what beliefs are and that different people can hold conflicting ones—the understanding we were trying to test—but simply could not understand how and why anyone could possibly hold those extremely deviant ones. Accordingly, in Study 4 we used conflicting moral and moral-related beliefs that were more plausible, better justified, and presumably more familiar to young children from their everyday experience, namely, beliefs concerning disputed ownership and property rights.

Three scenarios were presented to 3- and 5-year-old subjects in which a boy doll and a girl doll were first shown struggling for possession of an object, each claiming that it was "mine." At this point the subject was

asked who each character thought the object belonged to (ownership task). The scenario continued with one of the characters (the girl, say) taking sole possession of the object and saying that she had to take it home—it was hers. The boy objected, saying that the object belonged to him and that she couldn't take it home. At this point the subject was asked whether each character thought it was okay or not okay for the girl to take the object home (moral task). Because these scenarios seemed a little more complex than those presented in Studies 1–3, we decided to use somewhat older 3-year-olds as our younger group. Complexity aside, several features of these tasks should make them easy for subjects who possess an elementary understanding of beliefs. First, the subjects were given abundant evidence for the protagonists' opposing ownership and moral beliefs. Second, the subjects themselves were not parties to the dispute, and their own beliefs on the matter, if any, were not made salient by being solicited by the experimenter. Third, both of the opposing beliefs in each pair were reasonable in the circumstances; there was no clear truth of the matter (see Wellman, 1990, Not-own-belief task). Finally, conflicting beliefs of these kinds should seem familiar to the subjects from their own experiences with disputes over ownership and property rights (Shantz, 1987).

Method

Subjects

The subjects were 12 female and 12 male 3-year-olds (mean age = 3-8; range 3-5 to 3-11) and 12 female and 12 male 5-year-olds (mean age = 5-0; range 4-6 to 5-5). They were drawn from the same university laboratory preschool used in Studies 1–3 but had not participated in any of those studies. One female experimenter activated the dolls and questioned the subjects. A second recorded responses. No subjects needed to be excluded from the study.

Pretraining.—The experimenter attempted to sensitize the subject to the rights of ownership by stating conditions under which it was okay or not okay to take a toy home. She said: "When you are playing with a friend, it's nice to share your things, isn't it? But when you go home for dinner it's okay to take home a toy that belongs to you. Is it okay or not okay to take home a toy that belongs to you?" The experimenter continued "That's right/actually it *is* okay to take it home if it's yours. But when it's *not* yours, when it belongs to someone else, it's *not* okay to take it home, is it?" The child was then asked whether it was okay or not okay to take home a toy that belongs to somebody else and given feedback as before. If a child erred (five 3-year-olds and one 5-year-old did), feedback was given and the question reasked. These subjects were subsequently correct.

Test.—Children were told three stories in counterbalanced orders concerning disputes over property and for each story were asked ownership questions followed by moral questions. Male and female doll children standing 9 cm tall were the disputing protagonists for each story; their names and appearances varied across tasks. There were no dollhouses or other props to indicate where the dispute took place. The items for which ownership was disputed were a jacket, a toothbrush, and a blanket. We chose these items to highlight the notion of long-term personal ownership as opposed to temporary possession such as the use of a toy in a preschool setting. Pilot work with alternative stimuli and procedures indicated that young subjects confronted with feuding protagonists often suggested, very sensibly, that they should share. Therefore, stimuli were also selected on the basis of not being readily shareable. The procedure is illustrated below for the jacket task. The experimenter spoke for each doll character, shaking each doll to indicate which was speaking.

The experimenter said: "I have two children here, Jane and Peter." Jane comes in and is made to say: "I've been looking all over for my jacket. Here it is. At last I found it. It's *mine*." The jacket was affixed to Jane's hand via silly putty. Next, Peter enters and is made to say: "Oh Jane. You have *my* jacket. That's *mine*!" Peter's hand is also affixed to the jacket and the debate continues: "No, it's *my* jacket [Jane]. No, it's *my* jacket [Peter]. It's *mine* [Jane]! It's *mine* [Peter]!" At this point, the experimenter asked in unsystematically randomized orders the two ownership questions: "Who does Jane [the experimenter points] think this jacket belongs to, her or Peter?" and "Who does Peter [the experimenter points] think this jacket belongs to, him or Jane?" Incorrect answers to these ownership questions were not corrected. As Jane took sole possession of the jacket and started moving away from Peter, she was made to say: "I have to take this

jacket home. It's mine." Peter objected, saying, "You can't take that jacket home. It belongs to me." The experimenter commented, "So, Jane is taking the jacket, isn't she?" and asked the two moral questions: "What does Jane [experimenter points] think about that? Does she think it's okay or not okay for her to take the jacket home?" and "What does Peter [experimenter points] think about that? Does he think it's okay or not okay for Jane to take the jacket home?" Half of the subjects were always queried first about the winner's (e.g., Jane's) perspective for all three scenarios, and half about the loser's first. Also counterbalanced across subjects were orders of choices within questions ("not okay" always asked before "okay," or the reverse). The blanket and toothbrush tasks were almost identical to this jacket task. Subjects were scored as responding correctly on a given pair of questions only if they correctly identified both dolls' beliefs.

At the end of the session, the experimenter administered a fourth task of the same kind to the 5-year-old subjects only. This time, however, she proceeded directly to the moral questions without asking the ownership questions and asked the subjects to justify their responses to the moral questions, for example, "*Why* did he think it was okay for him to take it home?" The purpose of this probe was to find out to what extent the older subjects understood that the protagonists' differing moral beliefs in this situation were explained by their differing ownership beliefs.

Results and Discussion

Subjects were given scores of 0 to 3 pairs of questions correct by combining the three tasks of each type. A 2 (age) × 2 (sex) × 2 (task type: pairs of ownership questions vs. pairs of moral questions) repeated-measures analysis of variance performed on these scores revealed significant main effects for age, $F(1,44) = 21.59$, $p < .001$, and task type, $F(1,44) = 7.72$, $p < .01$. No other significant main effects or interactions were found. Ownership questions were significantly easier than the moral questions.

Table 5 shows the performance of each age group on each type of task. As the table shows, the 5-year-olds performed at ceiling on the ownership tasks. Interestingly, the 3-year-olds also performed moderately well on them: 60% correct pairs of answers, which was significantly ($p < .01$) better than chance expectation of 25% by t test. This suggests that conflicting beliefs about ownership might be somewhat easier for 3-year-olds to comprehend than conflicting beliefs of the other types tested. One reason they might be easier is that young children often experience similar disagreements about ownership with peers and siblings (Shantz, 1987). Another reason may be that in the ownership tasks the subjects formed no salient and definite conviction as to which child was the rightful owner; recall that no evidence as to the rightful owner was provided in the task. Consequently, they did not construe either child's ownership claim as being clearly false. Consistent with this possibility is evidence that 3-year-olds can accept conflicting claims about reality provided that the truth or falsity of these claims is not yet evident; what they are unwilling to attribute to anyone are claims that seem clearly false to them (Ruffman et al., 1991; Wellman & Bartsch, 1988; Zaitchik, 1991). In Zaitchik's words, "when the child is certain of the truth, he or she will reject all con-

TABLE 5

Number of Subjects Passing 3, 2, 1, or 0 Tasks and Percentage of Responses Correct in Each Age Group on Ownership and Moral Tasks in Study 4

	Tasks Correct				
	3	2	1	0	Percentage
Ownership tasks:					
3 years	11	4	2	7	60*
5 years	23	1	0	0	99*
Moral tasks:					
3 years	7	3	6	8	46*
5 years	16	5	1	2	82*

Note.—A correct response was defined as a correct identification of both dolls' beliefs. Percentages significantly different ($p < .05$) from chance expectation of 25% by t test are marked with an asterisk.

flicting beliefs" (1991, p. 100). The ceiling performance of the older children suggests that the ownership questions were clear and unambiguous, at least for subjects capable of understanding that they referred to beliefs about reality rather than to reality itself. The most frequent error pattern (76% of all errors) for the younger subjects was to attribute to both dolls the same belief, namely, that the object belonged to one or the other of the dolls (there was no systematic preference for one vs. another in any of the three stories); thus, in only 24% of the cases did they err twice by saying that A thought the doll belonged to B and B thought it belonged to A. This error pattern suggests that, as in Studies 1–3, some of the 3-year-olds were misconstruing the subjective ownership-belief question "Who does he think it belongs to?" as the objective ownership question "Who does it belong to?"

Both groups performed somewhat more poorly on the moral questions. The 5-year-olds still did quite well (82% correct pairs), but the performance of the 3-year-olds was relatively poor (46% correct pairs), although again significantly ($p < .02$) better than chance by t test. Once again, subjects' errors were revealing. On 79% of the occasions when subjects erred on moral tasks, their error took the specific form of answering "not okay" to both questions. This error, like those on the ownership task and previous moral tasks, suggests that the erring subject is simply evaluating the absolute rightness-wrongness of the behavior itself rather than inferring the protagonist's beliefs as to its rightness-wrongness. It might be objected that one should expect this moral task to be difficult for 3-year-olds because it requires that they understand how beliefs about property lead to or justify beliefs about morality; for example, A believes that it is morally right for him to take the object home *because* he believes that it is his property. Actually, however, subjects could have performed well on these tasks by simply equating "thinks it is okay to" with being in favor of the taking-home action and "thinks it is not okay to" with being against it, and then noting from the very clear evidence provided which attitude toward the action each protagonist expressed. Had subjects really understood that the task was about opposing beliefs, they could surely have shown it simply by attributing *different* beliefs to the two dolls, whether correctly or not. However, the 3-year-olds attributed different beliefs on only 47% of the moral tasks—not significantly more often than chance expectation of 50%. The corresponding figure for the ownership tasks was 69%—not at ceiling but significantly ($p < .02$) better than chance expectation of 50% by t test. Thus, the results of this study suggest that young children may even have difficulty in representing beliefs and belief differences when the beliefs are clearly evident, nondeviant and reasonable, and grounded in familiar social interactions. On the other hand, the results also suggest that they may have some grasp of conflicting ownership beliefs.

Recall that the 5-year-olds were given a fourth task to see if they understood why the two protagonists had opposing views about the rightness-wrongness of one of them taking the object home. Of the 24 5-year-olds, 21 correctly identified each protagonist's moral belief, and 17 of these 21 correctly cited for at least one of the protagonists a belief about ownership as grounds for that protagonist's moral belief. Thus, they seemed to some degree capable, not only of understanding that one person could think something was okay to do and another person not, but also of understanding why they might hold these different moral views.

Finally, although the ownership tasks were easier than the moral ones, performance on the two was significantly correlated within the younger group: $r(22) = .45$, $p < .05$ (the correlation for the older group has little meaning because of that group's near-ceiling performance). As in Studies 2 and 3, this suggests that the same developing competency may be engendering good performance on both types of belief task.

General Discussion

The main purpose of this investigation was to find out whether the courses of development of children's understanding of value, moral, social-convention, and ownership beliefs would parallel that for fact beliefs, namely, a developmental change from little or no understanding at age 3 to moderate to good understanding at age 4 to 5. The results suggest that all five developments follow roughly this course and may proceed synchronously in individual children.

In Studies 1–3, despite being told clearly and repeatedly that, say, a child in a picture story thought it was "okay" to steal another child's blocks (moral beliefs—all three studies) or to put her feet on the table (social-convention beliefs—Studies 2 and 3),

3-year-olds tended to attribute to that child their own belief that it was "not okay." They also incorrectly attributed their own belief that a certain color was not pretty to a depicted child who, they were told, believed that it was pretty (value belief—Studies 2 and 3). Even more striking, some 3-year-old subjects could not be gotten to attribute to the other child beliefs opposed to their own even when they were repeatedly corrected by the experimenter (Studies 1 and 3). A number of 3-year-olds also had similar difficulties even in tasks in which their own beliefs were not solicited and in which none of the conflicting beliefs to be attributed were unusual. Thus, in Study 4 they sometimes had trouble appreciating that a girl could think an object belonged to her whereas a boy could think it belonged to him, although they understood these ownership beliefs better than the four other types. They also had difficulty appreciating that the girl would think it was okay for her to take the object home whereas the boy would think it was not okay for her to do that. As in Studies 1–3, they had these difficulties even though they were provided with very clear evidence that the two protagonists had these conflicting ownership and moral beliefs. More generally, the 3-year-old subjects in these studies often tended to respond to belief tasks of all types tested—fact, value, moral, social-convention, and ownership—as if they had been asked what was really the case rather than what someone believed to be the case. They often seemed not to understand that subjective beliefs rather than objective realities were what was asked for, even though the request for beliefs was very clearly made and the beliefs requested had actually been told to the children just previously.

Although these results are consistent with most of the existing research evidence, they are not consistent with all of it. There have recently been reports of good performance by 3-year-olds on some measures of belief understanding (Bartsch & Wellman, 1989; Chandler et al., 1989; Freeman, Lewis, & Doherty, 1991; Hala et al., 1991; Lewis & Osborne, 1990; Lewis et al., 1989; Mitchell & Lacohée, 1991; Siegal & Beattie, 1991; Wellman, 1990; Wellman & Banerjee, 1991; Wellman & Bartsch, 1988). To our knowledge, no one yet has a theory about what children of this age do and do not understand about belief that adequately accounts for all the evidence, positive and negative. There are currently three main views regarding children's state of knowledge at this age. The majority view is that most 3-year-olds do not yet possess a representational conception of the mind and consequently really do not know what beliefs are—either false beliefs or true ones (e.g., Perner, 1991). The minority view is that they do possess this knowledge but that the tasks commonly used do not elicit it; that is, the children do have the basic competence, but performance problems and task insensitivities often prevent its expression (e.g., Hala et al., 1991). Finally, Wellman (1990, chap. 9) and perhaps others (e.g., Mitchell & Lacohée, 1991) subscribe to a variant of the minority view: Children of this age do have some genuine understanding of mental representation. For example, they know that beliefs refer to and represent external realities and that people act on the basis of them. However, they do not yet realize that beliefs can misrepresent reality as well as represent it correctly. According to Wellman (1990), they have a "copy-container" model of the mind that leads them to assume that beliefs always copy reality accurately. Thus, whereas 3-year-olds do have some understanding of what true beliefs are (namely, internal, mental representations of reality), they do not yet understand false beliefs. Our findings and our reading of the literature suggest to us that the majority view, or conveivably Wellman's (1990), will prove to be correct. Our results suggest that if the 3-year-olds who fail our tasks do know anything about beliefs, they certainly do not know very much about them, and may not readily access and use what they do know. It is hard for us to see how children who cannot even bring themselves to repeat a belief attribution they have just been explicitly given by an adult authority figure (Studies 1–3; Flavell et al., 1990, Study 3) can be credited with anything like a genuine understanding of belief.

In contrast, most of the 4- and 5-year-old subjects performed well, not only on fact tasks, as previous studies have found, but also on value, ownership, social-convention, and moral tasks. They gave clear evidence of understanding that all these tasks called for belief attributions rather than reality descriptions. Particularly interesting in this regard was their ability to accept the possibility that another person might think it right to do things that they themselves definitely did not (Studies 1–3), and that two other people could disagree about what was right to do (Study 4). There was even some evi-

dence that they understood why the two protagonists in Study 4 had opposing beliefs about whether it was right for one of them to take home the disputed possession—namely, because the two had different beliefs about who owned it. How much these older preschoolers actually understood about belief conflicts in the moral sphere cannot be determined from these studies, however. There are three reasons for caution here. First, the evidence for the other person's or persons' beliefs could hardly have been more plain in these tasks; indeed, this is our reason for crediting the 3-year-olds who failed them with so little knowledge about beliefs. Second, the 4- and 5-year-olds in Study 1 had trouble reporting another child's belief when it was inconsistent with that child's action. Finally, the vast literature showing that the majority of developmental changes in children's moral judgments occur during middle childhood and adolescence makes us wary about attributing too much knowledge about differences in moral perspectives to preschoolers.

The correlational data suggest that these five parallel developments also proceed concurrently within individual children. The intercorrelations among the different types of belief tasks within 3-year-old samples ranged from .30 to .75 (Studies 2–4). Likewise, in Study 3 of Flavell et al. (1990), the one most similar in method to those reported here, the correlation between fact and value beliefs for 3-year-olds was .69. Similarly, previous studies have found substantial age-held-constant intercorrelations among fact-belief, representational-change, appearance-reality, and Level 2 perceptual perspective-taking tasks (Flavell, Green, & Flavell, 1986; Gopnik & Astington, 1988; Moore, Pure, & Furrow, 1990). These results suggest that good performance on all of these perspective-taking tasks may be mediated by some new conceptual advance that begins its development at about 3 years of age. What might this advance be? Most researchers in this area (see, e.g., Astington et al., 1988; Forguson, 1989; Perner, 1991; Wellman, 1990) currently believe that it is some sort of representational conception of the mind, according to which people's experiences and actions are seen as governed by their mental representations or construals of reality. Children acquiring this conception begin to understand that the same reality may be mentally represented in more than one way, both within the same person (e.g., as how it appears to the person vs. how it really is) and between different people (e.g., as how it appears or what it is believed to be from their different perspectives). Clearly, such a conception would allow children to manage successfully all of the belief tasks studied in this investigation.

Finally, children's developing understanding of beliefs other than the physical-fact types seems interesting in its own right, apart from the issues just discussed. For example, coming to understand that people can differ in their beliefs as to what is right (ethical, proper, wise, etc.) to do is surely an ecologically significant development. Children would do well to learn, for example, that their parents and other adults often deny them objects or behaviors they feel they are entitled to, not mindlessly or out of sheer perversity, but because the adults sincerely believe that it is the right thing to do. They need to distinguish between, and evaluate differently, a person who does something they believe is wrong because that person honestly believes it is right—that is, someone who is acting "in good conscience"—and a person who shares their belief that it is wrong but does it anyway, out of some baser motive. There is also the subtler but frequent case of the baser motive causing both the unethical behavior and the belief that it is ethical. In short, in their moral development children not only need to learn all the reasons why the Heinz of Kohlberg's famous story (1969) could believe it is morally right to steal the drug for his sick wife; they also need to understand that the druggist could conceivably take a different moral view of the matter.

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