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Taking Decisions Seriously: Young Children's Understanding of Conventional Truth

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Research suggests that young children may see a direct and one-way connection between facts about the world and epistemic mental states (e.g., belief). Conventions represent instances of active constructions of the mind that change facts about the world. As such, a mature understanding of convention would seem to present a strong challenge to children's simplified notions of epistemic relations. Three experiments assessed young children's abilities to track behavioral, representational, and truth aspects of conventions. In Experiment 1, 3- and 4-year-old children ($N = 30$) recognized that conventional stipulations would change people's behaviors. However, participants generally failed to understand how stipulations might affect representations. In Experiment 2, 3-, 5-, and 7-year-old children ($N = 53$) were asked to reason about the truth values of statements about pretenses and conventions. The two younger groups of children often confused the two types of states, whereas older children consistently judged that conventions, but not pretenses, changed reality. In Experiment 3, the same 3- and 5-year-olds ($N = 42$) participated in tasks assessing their understanding of representational diversity (e.g., false belief). In general, children's performance on false-belief and "false-convention" tasks did not differ, which suggests that conventions were understood as involving truth claims (as akin to beliefs about physical reality). Children's difficulties with the idea of conventional truth seems consistent with current accounts of developing theories of mind.

INTRODUCTION

Many of the facts and practices that children encounter in their daily lives have a conventional basis. Rather than reflecting objective features of the world, conventions have their origins in human decision making and mental activity. Researchers have pointed out the important role that an understanding of convention plays in children's and adults' thinking. For example, evaluations of behaviors (Turiel, 1983, 1989), conceptions of school subject domains (Laupa, 1997), and expectations for pedagogical practices (Nicholls & Thorkildsen, 1988) all involve distinctions between conventional and nonconventional phenomena. Considerable attention in the area of social cognition has been devoted to exploring children's conceptions of convention (e.g., Komatsu & Galloti, 1986; Smetana, 1981; Turiel, 1983, 1989). Yet, because convention involves relations between decision-making, belief, and truth, it would seem that children's developing conceptions of mental representation (their theories of mind) must be intimately related to their understandings of conventions. The purpose of the current study is to explore children's understanding of conventions in the context of their ideas about epistemic mental states. Given what we know about children's views of the connection between reality and mental representation, conventional truth may present something of a complication or an anomaly.

The conventions of interest in the current study are stipulations of fact. Prime examples of such conventions are linguistic labels and names for things (e.g., that a pet is named "Fido"), facts about ownership, rules of games, and nominal kind definitions. Clearly there are many types of conventions (e.g., from implicit norms of dress and behavior to explicitly codified laws); however, it is the characteristic connection between mental state and truth that is our focus. In particular, conventions are constructed truths. The construction or establishment of a convention may not always be deliberate nor identifiable as the action of some particular person (e.g., a custom). Nonetheless, in identifying a practice as conventional we assert that it arose from people's intentional behavior. Although all conventions share a constructed basis, for the purposes of this study we will focus on a set of conventions that are clearly chosen and decided upon. Examples include naming and ownership decisions and rules for novel games. Although conventions established by the deliberate decision of an individual may be the exception rather than the rule, we believe they provide an appropriate starting point for an investigation of young children's understanding. Most importantly, for "individual" conventions there is no mistaking the constructed origins; more "social" conventions may not be recognized as conventional at all (e.g., do norms of gender-appropriate behavior have a conventional or natural basis?), especially by young children.

In the terms outlined above, convention is a relatively atypical type of mental state. A mature understanding of convention requires the recognition that epistemic states may have a mind-to-world direction of causality (and fit—Searle, 1983). With conventions, beliefs and knowledge result from activity of the mind rather than as reflections of the world. This view of convention would seem to run counter to the relations between mind and world embodied in children's commonsense realism.

For the purposes of this discussion, it is important to note that, strictly speaking, it is the decisions and beliefs about conventions that are representational states. Thus, in this discussion of conventions we will be focusing on the mental state verb "decide." Not all decisions involve conventions, however. What is missing is a verb of convention: Belief has "believe," pretense has "pretend." "Stipulate" may be the closest term available. To avoid prejudging the issue of how children understand the mental states involved in conventions, we will often use "convention" to refer to the act of establishing a convention as well as to refer to the content. This usage is similar to "pretense," which encompasses both the attitude and the object of a mental state.

Commonsense Realism, Belief, and Pretense

One of the underpinnings of our adult understanding of representation and mental states is the idea of commonsense realism (Forguson, 1989; Forguson & Gopnik, 1988). Commonsense realism posits an objective, external world of facts and a subjective, internal world of representations. Many have suggested that young children grasp this basic notion but have difficulty with some complexities (see, e.g., Gopnik & Wellman, 1994). One simplification that children make is to see epistemic mental states (representations evaluated as true or false, such as belief) as solely dependent on reality, with no mental or cognitive mediation. For young children (before age 4) beliefs are simple copies of reality (Wellman, 1990) or are nonrepresentational connections (Flavell, 1988; Perner, 1991). In either case, the direction of causality of belief runs from the world to the mind (Searle, 1983); encounters with facts lead, directly, to knowledge and belief. Whereas adults recognize an active role of the mind in belief formation, young children are said to see a one-way connection between reality and belief. Clearly, such a conception would leave little room for an understanding of convention.

Even after children come to recognize belief as constructed and representational, they may continue to see the relation between mind and world as fundamentally unidirectional. Although there is debate about the details, many researchers agree that at about 4 years of age children come to understand that mental activity may influence belief formation. For example, children begin to recognize the possibility of misrepresentation: What we believe need not match what is real (Wellman, 1990). However, this mental activity is understood solely as a source of error. Although beliefs can be constructed, they should not be. Children hold that the truth of a belief (its satisfaction condition) is independent of the mind. Forguson and Gopnik (1988) characterize 5-year-olds as "hyperrealists." These children are said to treat all epistemic states as (more or less accurate) representations of objective conditions. People may hold conflicting beliefs, but the truth is a matter of fact (see also Enright, Lapsley, Franklin, & Streuck, 1984; Mansfield & Clinchy, 1997). Similarly, Chandler (1987, 1988) distinguishes between different levels or degrees of understanding of the constructive nature of mind. Although differing in his estimation of the ages at which different understandings are achieved, Chandler also describes a progression in which children first recognize that representations may possibly be constructed by the mind and then later appreciate that truth may be a construction. Treating conventions as not just constructed beliefs, but as constructed true beliefs, would seem to require the more advanced understanding of the relations between mind and world.

If belief provides one point of comparison for thinking about conceptions of conventions, children's understanding of pretense provides another. There has recently been much interest in children's conceptions of pretense, in part because children seem to display much more facility with pretense than with belief. Exactly why children find pretense easier to work with than belief is a major theoretical question within the field (Gopnik & Slaughter, 1991; Lillard, 1993, 1998; Wooley, 1995) and also directly relevant to the study of conventions.

One perspective is that it is the nonserious nature of pretense that allows children to grasp the concept (Gopnik, 1993; Woolley, 1995). Pretense fits with early commonsense realism in that it does not connect with the world; the representations involved in pretense are mere representations, not representations of objects (Forguson & Gopnik, 1988). In Gopnik's (1993, p. 5) terms, pretense is silly; silly states "have no referential or causal relation to reality: they are neither true nor false" (see also Woolley, 1995). Conventions and pretense are similar in that both derive from mental activity (rather than from the world); they are things we actively do (Wellman, 1990). Young children may judge that mental activity has no proper role in epis-

temology. If a mental state is internally caused and constructed, it cannot be serious, and it certainly cannot be true.[1]

An understanding that an internally caused and constructed mental state cannot be true leads children to a mature understanding of pretense. First, they realize that just thinking something doesn't mean you really believe it. Further, thinking about something does not make it so (Woolley, 1995; Woolley & Wellman, 1993). A mature understanding of conventions requires violating these eminently sensible principles. Most radically, for conventions, thinking about something does make it so.

Other accounts suggest that pretense representations are not easier for children; rather, it is that a nonrepresentational understanding of pretense is less problematic than a nonrepresentational understanding of belief. These researchers claim that pretense is easier for children to understand only insofar as questions of representation and truth do not typically arise in pretend contexts. Lillard (1998) argues that young children have a behavioral, "acting as if" understanding of pretense. They know that to pretend something means to behave in a certain way, without, necessarily, realizing that pretenders have concomitant mental states. In a slightly different proposal, Perner (1991; Perner, Baker, & Hutton, 1994) has argued that young children recognize that pretense (and belief) involve mental activity but do not see that activity as involving representational states. As a consequence, before age 4 children have an undifferentiated conception of pretense and belief: Both can be understood in terms of an agent "acting as if" a proposition were true. Conventions would seem also to fit under this undifferentiated concept. The limitations of children's understanding are not typically obvious when they engage in pretense but may be brought to the fore in contexts of belief. Both Lillard's and Perner's proposals emphasize children's focus on the relation between (what adults recognize as) mental states and behaviors. Thus, it may be at a level of action that children first understand mental states, including, perhaps, conventions.

[1] Such a possibility seems close to that suggested by Lillard (1993). Several researchers have posited that children understand states with a mind-to-world direction of fit (cf. Searle, 1983), such as desire, before states with a world-to-mind direction of fit, such as belief. Lillard argues that pretense has a mind-to-world fit. Because pretense, however, does not have satisfaction conditions (at least in the same way as beliefs or desires do), assigning a direction of fit may not be appropriate (cf. Gopnik & Slaughter, 1991). Rather, the suggestion and examples presented by Lillard (1993, p. 354) showing that "the world does not make the mind pretend in the same sense that the world makes the mind believe" may be closer to the idea that it is in activity versus passivity (mind-to-world versus world-to-mind direction of causation) that the two states differ.

The Development of Convention

The above discussion suggests three important elements or aspects of an understanding of a mental state (such as belief or pretense). In particular, there are three relations involving mental states that children must understand and manage: relations to action, to representation, and to truth. Below we consider how children may understand conventions in each of these three aspects. Further, we propose a developmental sequence in which children come to appreciate first behavioral consequences of convention, then representational consequences, and finally truth consequences.

By age 3, children likely have a behavioral understanding of conventions: To adopt a convention is to act in a particular way. At this level conventions need not be understood as involving representations of states of affairs. Although quite limited, such an understanding of conventions would allow children to track changes in behavior occurring over the course of decisions about conventions. It also seems likely that behaviors would be understood to have some normative force: If one is engaged in a convention one should behave in this way rather than that way. Such an expectation would be similar to ideas about what is proper or appropriate in pretense. This initial level of understanding involves children actually forming the correct representations of conventions (without recognizing those representations). The significance of this understanding is that children should be able to track (e.g., generate expectations about) behavioral consequences of conventions. Although previous research has established that 3-year-old children have at least a behavioral understanding of belief (Wellman, 1990) and pretense (Lillard, 1993, 1998), it is not clear that such children know even this much about convention. For example, Piaget (1929) argued that young children deny that rules of a game (regulating proper behavior) may be changed by someone's decision. More recent work (e.g., Komatsu & Galotti, 1986; Nicholls & Thorkildsen, 1988; Turiel, 1983, 1989) suggests that quite young children do see a role for conventions in establishing norms for behavior (see General Discussion).

The second level of understanding involves the recognition that people form representations during the course of decisions about conventions. In seeing a mental state as representational, children must also learn about the connection between the world and the mind. Can children track what a person thinks or how representations change? For example, at the second

level of understanding children would recognize that the decision to change a pet's name from "Fido" to "Rover" leads people to change their representations. Past research suggests that children may achieve this second level of understanding more easily for silly states (such as pretense) than for serious states (such as belief) (Gopnik & Slaughter, 1991): It is easier to reason about changes or mistakes about pretenses than beliefs. This is because representational understanding of pretense does not require adjustment or accommodation between the state of the world and the state of the mind. Therefore, if children treat conventional decisions as silly (identify convention with pretense), they should have a relatively easier time achieving a representational understanding of conventional decisions. In contrast, if children recognize that the representations involved in convention require coordination with facts about the world (as akin to belief) they may have more difficulty tracking those representations. Thus, an important question for empirical research is how well children track representations in cases of conventions relative to cases of belief and pretense.

Finally, a mature appreciation of conventions involves recognizing the truth implications of stipulations. The truth of a proposition changes after a convention has been established. This ability to track changes in truth may be particularly difficult for young children. Tracking truth is unproblematic in cases of pretense: Pretending does not affect what is true. Similarly, until children recognize the constructed nature of truth in middle childhood (Forguson & Gopnik, 1988; Wellman, 1990) or adolescence (Chandler, 1987), tracking truth is also straightforward in contexts of belief. In figuring out what is true, one need only attend to the physical facts; there is no need to attend to people's thoughts or representations. In contrast, keeping track of what is true in cases of convention requires exactly the opposite focus: Intentions matter, not physical conditions. If children really cannot appreciate the role of intentions in the construction of truth, they may treat decisions about conventions (stipulations) as serious but as ineffective at changing reality. Under this interpretation, decisions about conventions would be like false beliefs: One treats something as (becoming) true that is not. However, because conventions are such straightforward, unambiguous, examples of constructed truths we might expect an earlier appreciation in these cases (Kalish, in press). Nonetheless, it does seem that the understanding that conventions change truths must follow the realization that conventions change behaviors (Level 1) and representations (Level 2).

Whatever the developmental course, people eventually do come to see conventions as distinct from both pretense and belief. Pretense and convention are both active (derive from the mind), but only convention is serious. Belief and convention are both serious, but convention is active: both in the sense of springing from mental activity and, more radically, in generating truth. Occupying this intermediate position between belief and pretense, conventions represent a significant elaboration on basic commonsense realism. Understanding conventions requires a nuanced understanding of the relation between mental representations and reality. Thus, studying when children come to share our adult notion of conventional truth may provide considerable information about their developing theories of mind and representation.

This paper reports the results of three experiments exploring young children's level of understanding of conventions in relation to their conceptions of pretense and belief. Experiment 1 assessed children's abilities to track behavioral and representational changes for belief, convention, and pretense. Experiment 2 assessed tracking of truth by asking whether children saw decisions about conventions, but not pretenses, as effective at changing the true state of world. Experiment 3 presented children with changed representation tasks (Gopnik & Slaughter, 1991) involving convention, pretense, and belief. The results of these experiments yield important insights into children's understanding of conventions and, more generally, into their conceptions of the complex relations between mental representations and reality.

EXPERIMENT 1

Experiment 1 focused on young children's abilities to understand conventions in the context of rules of a game. Participants were engaged in a game of choosing marbles out of a bag. Over the course of the game the experimenter introduced and then changed the rule designating one color of marble as the "winners." Children were asked a series of questions designed to assess the three aspects or levels of conventional understanding. Targeted at the first level were questions probing children's ability to track the rules of the game: Which marbles are winners? Are they owed a prize? Targeted at the second level were questions about representations of the game: What does someone think about the rules? Which representations are accurate? The primary (conventional?) way to assess children's understanding of representations is through a false-belief task (Wimmer & Perner, 1983). In the context of Experiment 1, children were introduced to a puppet who heard the first stipulation but not the changed rule. Would children understand that hearing or participating in stipulations affects what some-

one thinks? Finally, a set of questions asking children about what is correct following changes in rules at least began to address the question of their understanding of the truth implications of conventional decisions.

We suggest that a game provides a good context for exploring ideas about conventions. As discussed above, Piaget's (1929) initial discussions of rules were based on his observations of children's games. In particular, his contention that young children see rules of games as objective and outside the control of people's decisions suggest that such children have not achieved the initial level of understanding described above. However, there are some reasons to believe that Piaget's investigation may have underestimated children's understanding of conventions. First, he looked at games that had long-established and widely shared rules. For many systems of conventions, people must have special authorization to change a rule (e.g., lawmakers). Perhaps Piaget and the children just disagreed about who was authorized to change the rules of games. In the current study a novel game is introduced. The hope is that in this context it is clear that it is the experimenter's game and that the experimenter has the authority to change the rules. The question of interest, then, is how do children understand the consequences of authorized changes of convention? A second feature of the task used in Study 1 is that children are actually engaged in a game with changing rules. In contrast, Piaget framed his questions as hypotheticals ("What if we were to change the rules . . ."). As many have suggested, children may have particular difficulty with hypothetical or counterfactual questions. Having children actually participate in the game also provides the encounter with real consequences. Depending on the rules, participants either do or do not win a prize. Such outcomes would tend to encourage children to take the rules seriously. In particular, decisions about the rules have a different character than decisions about pretense.

As conventions must be understood in relation to other sorts of representations, two additional tasks were included for comparison purposes. Children were given a standard "unexpected contents" false-belief task. A third task asked children to reason about pretend contexts and changes in pretense stipulations.

Methods

Participants. Thirty children participated in the study: fifteen 3-year-olds, $M = 3{,}6$ and *range* = 3,2–4,0, and fifteen 4-year-olds, $M = 4{,}8$ and *range* = 4,5–5,0. Children of these ages were chosen because past research suggests that the younger children typically fail false belief tasks. Thus, we may predict that these children will not show Level 2 understanding of conventions, although they may show Level 1. From past research we may expect that children in the older group will show great variability in passing false belief tasks; some will, some won't. Thus this sample will allow a comparison between false-belief performance and Level 2 convention understanding (tracking representations in the context of conventions). All children were recruited from childcare centers in a midsized midwestern city. All children were interviewed by a single experimenter in a room within their childcare centers. Participants were predominantly White and roughly equally split between male and female.

Stimuli and design. Each child participated in three tasks: a convention task, an unexpected contents task, and a pretense task. Order of tasks (convention, contents, pretense) was maintained across participants. The convention task involved a marble-choosing game. Stimuli for the task included a bag containing five orange and five blue marbles. There was also a small sign labeled "The winners are" to which an orange or a blue cardboard square could be affixed. Small stickers served as prizes and were given to the participant upon drawing a "winning" marble from the bag. The unexpected contents task was modeled upon one used by Gopnik and Slaughter (1991). This task involved a crayon box that was actually filled with candles rather than crayons. The stimuli were a small crayon box (about 10 cm) and some candles. The pretense task involved using toy pigs as if they were toy dogs. Stimuli for the pretense task were two small plastic pigs and a plastic figure representing a farmer. Along with the child and the experimenter, a small quasi-human puppet participated in each task. In each task the puppet would be present for some portions of the instructions but absent for others. When absent, the puppet was placed in a paper box "cave."

Procedure. After hearing that she or he would engage in some games with the experimenter, a child was introduced to the puppet. It was explained that sometimes the puppet would visit his cave and the experimenter demonstrated that the puppet could not see or hear when in the cave. A complete text of the introduction, explanations of the tasks, and questions is included in Appendix A. After introductions, the experimenter showed the child the bag of marbles and explained that they were going to play a game with the child receiving a prize each time she or he chose a "winner" marble. The experimenter then stipulated that blue marbles would be winners. A blue rectangle was placed on the sign and the experimenter explained that the sign indicated the color of the winner marbles. The experimenter then asked which color was the winner

and whether the sign was correct. The child drew a marble from the bag and received a prize or not. This continued twice or until the child had won at least once. At this point the puppet was removed to his cave. Two check questions assessed the child's acceptance of the puppet's isolation. After the puppet was gone, the experimenter announced that she had decided to change the game. From now on, orange marbles would be winners. The child was asked which color marbles were winners and whether the sign (still indicating blue) was correct. The puppet returned and the child was asked which marbles the puppet thought were the winners and whether the puppet was correct in thinking this. Marble drawing continued two more times or until the child had won at least once. After each draw the child was asked whether he or she was due a prize (had won) or not. Prizes were awarded after each winning draw.

The unexpected contents and the pretense task were generally similar in procedure. In the contents task the child was shown the box of a familiar brand of crayons and asked what he/she thought was inside. With the puppet out of range the box was opened, the child saw there were candles in the box and was asked what is really in the box. The box was then closed up and the puppet returned. At this point the experimenter asked what the puppet would think was in the box and whether he was correct or not. In the pretense task, with the puppet present, the child saw some toy pigs and heard that they say "oink." After the puppet left, the experimenter suggested pretending that the pigs are dogs. The child was asked whether the animals should say "oink" or "woof." When the puppet returned the child was asked what the puppet thought about the animals (dogs or pigs) and what was really the case.

Although the specifics of each task differ, all share two aspects. One set of questions asked children to report an adjustment made in response to some change. In the convention and pretense tasks the change is the experimenter's suggestion (e.g., of a new rule). In the contents task the change is the evidence of the unexpected contents (i.e., seeing candles in the box). Also shared by all tasks are questions asking children what someone not cognizant of the change/new information would think. These two parts of each task will be referred to as tracking changes and tracking representations.

Results

In general, children were able to follow the stipulations of the marble game quite well and responded correctly to changes in the conventions. All of the 4-year-olds and all but one of the 3-year-olds were able to correctly report the initial rule (blue winners) and judge the correctness of the sign (which said blue were winners). Both 3- and 4-year-olds were generally correct at reporting the consequences of a change in rules (winners now orange, see Figure 1). Also, children at both ages were generally correct in their expectations of the consequences of marble draws given the new stipulation. Considering just responses to the first two draws (following the rule change), 100% of the 4-year-olds' responses were correct (that they should not get a prize when they drew a blue marble but should when they drew an orange one). Three-year-olds averaged 79% correct across two draws. This rate of responding is greater than expected by chance, $p < .05$, one-tailed sign test. In general, children's ability to track stipulations was similar to their ability to change their beliefs in the face of new information (in the unexpected contents task) and to adjust their behavior in pretend contexts (see Figure 1).

Questions assessing children's tracking of representations appeared more difficult than those assessing tracking of behavior or rule (see Figure 1). Indeed, children's reports of their own understanding were correct significantly more often than their reports of the puppet's (ignorant) representation (all $p < .05$, one-tailed sign test). The one exception was 4-year-olds on the pretense task: These children showed equally high levels of accuracy for tracking of changes and representations.

Consistent with established findings, children often failed to accurately report how another person would represent a situation when that person's access to information differed from their own. As shown in Figure 1, 3-year-olds were significantly worse than chance on the convention and contents questions tracking representations and did not differ from chance on the pretense task. Four-year-olds showed higher absolute levels of performance but a similar pattern.

Previous researchers have suggested that the nonserious (lacking truth value) nature of pretense may make the task of tracking representations of pretense easier for young children. Thus, we can predict that children will do better on the pretense task than on the unexpected contents task. Further, such comparison may be informative about conceptions of conventions: Would rates of success on conventions tasks be similar to those of pretense or the unexpected contents (false-belief)? To increase the power of comparisons across tasks, the data from the two groups of children were considered together. Children were better able to track representations of pretense than representations in the unexpected contents task, $p < .005$, one-tailed sign test. Performance was also better on pretense tasks than on the convention task, $p < .01$,

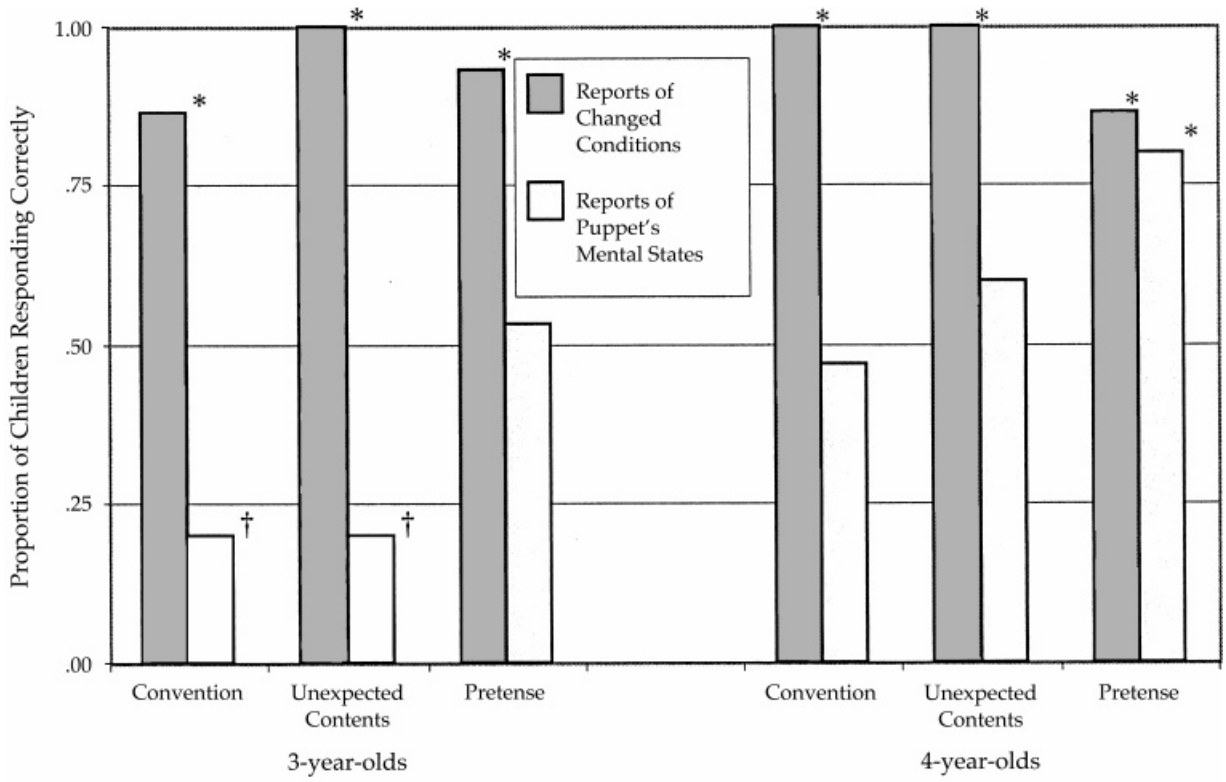

Figure 1 Children's reports of their own and puppet's conventions, beliefs, and pretenses: Experiment 1. Dark shaded bars indicate the proportion of children correctly reporting the new state of affairs following rule changes (convention task), viewing of box contents (unexpected contents) and pretense changes (pretend task). Light shaded bars indicate the proportion of children correctly reporting that a puppet not cognizant of the change would continue to maintain the old (false, incorrect) rule, belief, or pretense. * Greater than chance, $p < .05$; † Below chance, $p < .05$.

one-tailed sign test. Responses to the convention and contents tasks did not differ significantly, $p < .4$, two-tailed sign test.

The results of the cross-task comparisons give some suggestion that children were treating conventional stipulations as involving truth and serious representations of reality. Additional evidence comes from responses to questions asking children what is right. As noted above, children at both ages asserted that a sign agreeing with the experimenter's initial stipulation was "right." Following the change in rule, 87% of the 4-year-olds maintained that the sign was now wrong, a rate of responding better than chance, $p < .005$, one-tailed sign test. Three-year-olds, however, judged the sign to be wrong only 67% of the time and did not differ from chance, $p = .15$, one-tailed sign test. Children were also asked about the correctness of the puppet's beliefs on each task. Despite frequently failing to correctly assess what the puppet would think, children were very good at assessing whether he was correct or not. All but one (a 3-year-old) judged that the puppet was correct if he thought orange marbles were winners or incorrect if he thought blue. Importantly, these responses indicate an acceptance of the experimenter's rule change. Thus, children did seem to take thoughts about conventions seriously, as matters of truth or falsity.

The question whether the puppet is right in the pretend task was somewhat trickier. From one perspective, it is right to say that the figurines are pigs and no amount of pretending can change that (ignoring, for a moment, the fact that the objects are really plastic representations of pigs). Thus, if the puppet is not privy to the change of pretense (now pretending the figurines are dogs) and asserts that they are pigs, the puppet will actually be right. A different perspective, however, is that within the context established by the pretense it is right to identify the figurines as dogs. Perhaps because of the ambiguity, children were inconsistent in their responses to questions about the true identity of the figurines. Overall, children showed a slight preference (60%) for identifying the figurines as really pigs. Although the question was worded differently in this task than in the conven-

tion or contents task (see Appendix A), the difference in the consistency of judgments may be informative. Most accounts of children's difficulty with false belief argue that it is because children have a clear sense of the right answer that they fail to see that someone could think differently. One sense in which pretense might be less serious is that the right answer is less clear, so perhaps it is easier to accept diversity in what people might think.

Discussion

In general, even the younger children were able to follow the experimenter's stipulations and respond appropriately given the conventions of a game. For example, children realized that the conditions of winning or losing would change with an experimenter's decisions. Such good performance may not be unexpected: At this level, understanding the conventions of a game is no different from understanding the elements of a pretense. It is useful to demonstrate, however, that children's acceptance that a person's decisions can change the standards for appropriate behavior is not limited to explicitly pretend contexts. Perhaps in contrast to Piaget's (1929) original assertions, by age 3 children did seem to recognize that decisions could change the rules of games. Preschool-aged children thus seem to have reached the initial, behavioral/normative level of understanding conventions. These children seem to accept that a person's decisions may determine what is "right," at least within the context of a game (see also Tisak, 1995; Turiel, 1983).

The children included in Study 1 demonstrated a relatively poor ability to track the representations people hold and form when engaging in conventions (second level of understanding). Such difficulty suggests that children may understand representations of conventions as serious (as akin to belief rather than pretense). For example, participants did not clearly recognize how being privy to the establishment of conventions affects beliefs. Again, such difficulty is not unexpected: Young children typically fail representational diversity (e.g., false-belief) tasks. Other research has found that children's problems understanding the relation between representations and reality holds across a wide range of belief types (Flavell, Mumme, Green, & Flavell, 1992). However, Flavell et al. did find some evidence that understanding of beliefs about a convention (ownership) might be easier than, for example, reasoning about beliefs concerning physical facts. One suggestion is that tasks involving nonobvious facts may be easier for children (see Lillard, 1998). Gopnik (1993) has argued that children appreciate representational diversity earlier in the context of pretense than in the case of factual belief. There was some reason, therefore, to suppose that children might be able to track representations of conventions before they show similar competence with other beliefs. Such a difference, however, did not appear in the data: False beliefs about conventions were no easier for children to understand than were false beliefs about physical reality. In contrast, children were more successful at recognizing representational diversity for pretense than for either convention or factual beliefs. In evaluating these conclusions, it is important to recognize that the assessment of children's tracking of representations was very limited. Nonetheless, the results do not give any reason to suspect that children's understanding of epistemic representations in the context of conventions is more advanced than their understanding of other sorts of beliefs.

Finally, the results of Study 1 are also suggestive regarding children's appreciation of the third level of understanding: that conventions establish a proposition as true. That children had as much difficulty with the representational diversity question regarding convention and unexpected contents, and that both were harder for them than pretense, is at least consistent with their treating the conventions as establishing a true fact (like the facts about the box contents and unlike the nonserious consequences of pretense). Similarly, at least the 4-year-olds did use the experimenter's stipulations as the standard against which to judge the accuracy of a sign representing the state of the game. All children (except one) used the stipulation as the standard to evaluate the belief ascribed to the puppet. However, there is some ambiguity regarding what children might mean when they say the sign or the puppet is right; do they mean to say the statement is "true" or just "appropriate" given the activity? Against the possibility that children realize stipulations establish truth is the evidence of their poor ability to track representations. Following the argument set forth above, it would seem that understanding that representation is not given objectively (e.g., representational diversity) should be logically prior to understanding that truth is not given objectively (e.g., that stipulations can affect truth). Nonetheless, the findings of Experiment 1 suggest that assessing whether children realize that conventions establish truths is worthwhile. This question was addressed in Experiment 2, which focused on the contrast between pretense and convention.

EXPERIMENT 2

Appropriately distinguishing pretense and convention requires understanding that the latter actually does involve a change in truth values whereas the

former does not. Although both pretense and convention may establish what it is appropriate to do in a given context, only convention establishes a fact or proposition as really true. In this experiment, children were engaged in episodes of pretending and (deciding) convention. Critical questions asked children to report the truth values of claims about the elements of the pretense and convention.

The conventions examined were those under the control of an individual, for example, the name and ownership of a doll. Conventions were presented as decisions about attributes (e.g., deciding that the doll's name is "Anne"). Decisions were contrasted with pretenses about the same attributes (e.g., pretending that the doll's name is "Anne"). Children were asked three questions about each pretense and decision. A first question assessed whether children recognized that the same behavior could result from both pretense and convention (tracking behavior). Children were asked what they would say about an attribute. Two other questions assessed children's beliefs about the real status of attributes (tracking truth). They were asked what was "really" the case and were also asked to judge the correctness of a third party's statement about each attribute. In each case children were asked to choose either the original value of the attribute (e.g., the initial name, "Sally") or the value "changed" by convention or pretense (e.g., the new name, "Anne"). For pretense the correct (adultlike) response would be to assert the changed value for the behavior question and the original value for reality and third-party judgments (e.g., One should say the doll is named Anne, but it is really named Sally and a third party is correct if he says Sally and wrong if he says Anne). For convention, the correct pattern would be to assert the changed value for all questions. The decision actually has changed the facts; the pretense has not.

Participants in this experiment were children in three age-groups: 3-year-olds, 4- to 5-year-olds, and 6- to 7-year-olds. Past research suggests that even the youngest children should realize that pretending does not affect truth (Wooley & Wellman, 1993). However, consistent with the suggestions that 3- to 5-year-olds see a unidirectional relation between reality and (serious) epistemic mental representations (Chandler, 1987; Forguson & Gopnik, 1988), these children were not expected to show the correct pattern of responses for conventions. This prediction is also supported by the difficulty younger children showed tracking representations in Experiment 1. Predictions for the 6- to 7-year-old children were less clear. Although these children understand more complex representational relations, many researchers describe them as continuing to hold an objectivist conception of truth (Chandler, 1988). Thus, it is possible that even the oldest children would fail to appreciate that conventions actually change the truth of some propositions.

Methods

Participants. Fifty-three children participated in this experiment. There were 19 children in a 3-year-old group (M = 3,6, *range* = 3,1–3,9), 20 in a 4- to 5-year-old group (M = 4,9, *range* = 4,3–5,7), and 14 in a 6- to 7-year-old group (M = 6,11, *range* = 6,0–7,10). These groups will be referred to as "3-year-olds," "5-year-olds," and "7-year-olds," respectively. All children were recruited from childcare centers in a midsized midwestern city. Children were predominantly White and middle-class. Approximately equal numbers of males and females participated in each age group.

Design and procedure. Individual children were engaged in a play situation that involved deciding and pretending with a set of toys. Children were introduced to the task with the following instructions: "Today we're going to do some pretending. Do you know what pretending is? Right, it's (whatever the child said; all children gave sensible responses). We are also going to decide some things. Do you know what deciding is? When you have choice time you decide what to play with, right? If you decide something you do it." The order of introduction of pretense and decision was counter-balanced across children and matched the order of presentation of the experimental items. Children were then engaged in two activity episodes. In the pretend episode, participants were introduced to a paper teddy bear with the following instructions: "Here's this bear. He's my bear and his name is George. Let's pretend some things about the bear. Now we are pretending. We're not deciding things anymore. [Added when this episode was second.] We are going to, just for play, pretend some things about the bear, OK?" The decide episode involved a paper doll and was introduced with the following instructions: "Let me show you a doll I have. She's my doll and her name is Sally. I'd like to decide some things about the doll. Now we are deciding and choosing. We're not pretending anymore. [Added when this episode was second.] We are going to, for real, decide some things about the doll." In the ownership decision the doll was placed in between the child and experimenter: Physical possession was neutral. Children were allowed and encouraged to take the doll after the ownership transfer. Materials for the study were paper dolls and bears cut from construction paper (approximately 18 cm in height). Other paper accessories were also used (e.g., "sleeping bags" and "caves").

Each episode involved an identical set of events, varying only in whether the events were characterized as pretending or as deciding (see Appendix B for episode events). Events appeared in the same order across episodes and did not vary across participants. Following each event, children were asked three questions (again in invariant order). First they were asked what to say about the outcome of the event: for example, "So, now that we've decided, what will we say? Whose doll is this: Mine or yours?" This was followed by a question asking what was "really" the case: "What about really? Since I decided to give you the doll is it really mine or really yours?" Finally children were presented with a third party (a puppet named "Feppy") ignorant of the event. Participants judged an assertion made by the puppet. For half the children, the puppet consistently asserted that the initial conditions were true; for half the puppet asserted the changed conditions. For example, an initial assertion was: "Here comes Feppy. Feppy doesn't know what we decided. Feppy says 'Oh look, that's [Experimenter's] doll.' Is Feppy right that this is my doll, or is he wrong?" A changed assertion was: "Here comes Feppy. Feppy doesn't know what we decided. Feppy says 'Oh look, that's [Child's] doll.' Is Feppy right that this is your doll, or is he wrong?"

After completing both the pretend and decide episodes, children were presented with a final control event. The control event described an impossible transformation (changing the material construction of the doll/bear). Children were engaged in pretending to change the material (if the pretense episode had been second) or in deciding to change the material (if the decision episode had been second). The same three questions followed this event as were used in the other pretending/deciding events. This event was included as a check against a possible response pattern of simply accepting any decision expressed by the experimenter.

Results

The results from the three question types (what to say, what is really the case, and judgments of puppet's responses) were analyzed separately. Table 1 presents the proportions of children's responses that they would report (say) the changed state (what was pretended or decided) in response to the first question.

Children generally reported that they would assert the changed state for both decide and pretend episodes. That is, in both cases they would say what they had decided or pretended when asked. The proportions of changed state responses were analyzed in an ANOVA with age group as a between-subjects variable and episode (decide or pretend) as a within-subjects variable. There was a significant interaction between age and episode, $F(2, 49) = 12.6$, $p < .001$. Analyses of simple effects revealed an episode difference for only the 7-year-old group, $F(1, 49) = 24.4$, $p < .001$. These children were less likely to assert the changed state for pretend than for decide events.

Table 1 Mean Proportions of Responses Indicating Report of Changed Attributes

	Decide Events	Pretend Events
3-year-olds	.80* (.16)	.75* (.22)
5-year-olds	.66* (.26)	.76* (.29)
7-year-olds	.93* (.15)	.55 (.41)

Note: Standard deviations are in parentheses.
*$p < .05$.

Although the younger children generally answered that they would report the changed state, they were less consistent in their responses to the questions about reality. Only 7-year-olds gave responses that differed significantly from chance (see Figure 2). The proportions of changed state responses for Question 2 (really the case) were analyzed in an ANOVA with age group as a between-subjects variable and episode as a within-subjects variable. There was a significant interaction between age and episode, $F(2, 49) = 21.1$, $p < .001$. Analyses of simple effects revealed an episode difference for only the 7-year-old group, $F(1, 49) = 74.3$, $p < .001$. For these children, deciding changed reality; pretending did not.

Although the analyses above may suggest that the two younger groups of children were simply confused by the "really" questions, two pieces of evidence argue against this conclusion. Most significantly, a post hoc inspection of the data from younger children revealed an effect of the order of presentation of episodes. (Three- and five-year-olds' responses were combined for this analysis.) When the deciding episode was first, responses were random for both episodes (M decide = .45, M pretend = .51). When the pretend episode was presented first, children performed better than chance for pretend events (infrequently asserting that the changed state was really the case, $M = .28$, $T(16) = 18.0$, $p < .01$), but not for decide events ($M = .51$). Although young children had relatively clear intuitions that pretending did not change reality, introducing the deciding episode seemed to confuse the issue.

The second piece of evidence suggesting that younger children were not simply confused by task demands comes from performance on the control event. All children were generally correct on the real-

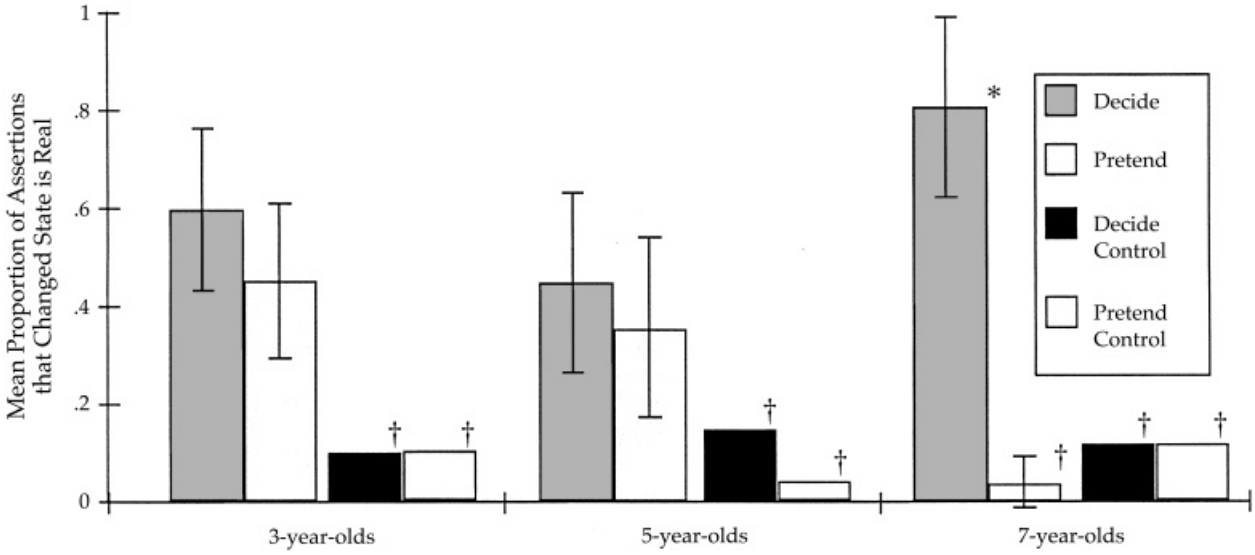

Figure 2 Results from Questions 1 and 2 of Experiment 1: Mean proportions of judgments that the changed state really is the case (in response to question 2). Control items were pretenses or stipulations to change the material composition of the doll. Each child participated in either the convention or pretense control. All other items were answered by all children. * Greater than chance, $p < .05$, † Below chance, $p < .05$. Error bars represent one standard deviation.

ity question for the control event; they correctly responded that neither decision nor pretense would change the material composition of the dolls (see Figure 2). Thus, though this discussion is framed as a comparison between decision and pretense, it is not decisions per se that appeared to pose problems in relating representations and reality.

The analysis of responses to Question 3 (reaction to the puppet) was made more complex by the additional variable of whether the puppet asserted the original or changed state. Responses to Question 3 were coded as either agreeing with or rejecting the puppet's assertion. The mean proportions of rejecting responses were analyzed in an ANOVA with age group and assertion (puppet says original or changed) as between-subjects variables and episode as a within-subjects variable. This overall ANOVA revealed a significant three-way interaction, $F(2, 46) = 29.5$, $p < .001$. (The main effects of assertion and both two-way interactions with assertion were also significant.) This three-way interaction will be discussed in terms of the interaction between assertion and episode at each age. (To analyze these interactions, we conducted three separate ANOVAs [one for each age-group]). The two-way interactions are presented in Figure 3. Three-year-olds tended to agree with the puppet when he asserted the changed state and reject his assertions of the original state, regardless of whether the event involved pretending or deciding. There was a significant effect of assertion, $F(1, 17) = 12.5$, $p < .01$, but no effect of (or interaction with) episode. For 5-year-olds there was a marginally significant effect of episode, $F(1, 17) = 4.4$, $p = .05$, but no effect of (or interaction with) assertion. These children just rejected more assertions for deciding episodes than for pretending episodes. Finally, 7-year-olds showed the predicted pattern: The puppet was correct to assert the original state for pretending and the changed state for deciding (but incorrect otherwise). For these children there was a significant interaction between episode and assertion, $F(1, 12) = 36.3$, $p < .001$.

A final set of analyses examined individual patterns of responses. Given the chancelike performance of the younger groups, assessing any consistency at the individual level was especially important. In presenting the results of pattern analyses, the two younger groups were considered together. Responses to the second (really) question were used as the bases for patterns. The correct pattern was defined as asserting the changed state for deciding episodes and the original state for pretending episodes. Two patterns of incorrect responses were defined by always asserting the changed state (treating pretenses as akin to conventions) or by always asserting the original state (treating conventions as pretenses). A participant was considered to have matched a pattern if at least seven of eight responses were consistent with the pattern, p(7 or 8 out of 8) = .035, binomial theorem. The most common pattern was to always assert the original state: Eleven younger children showed this

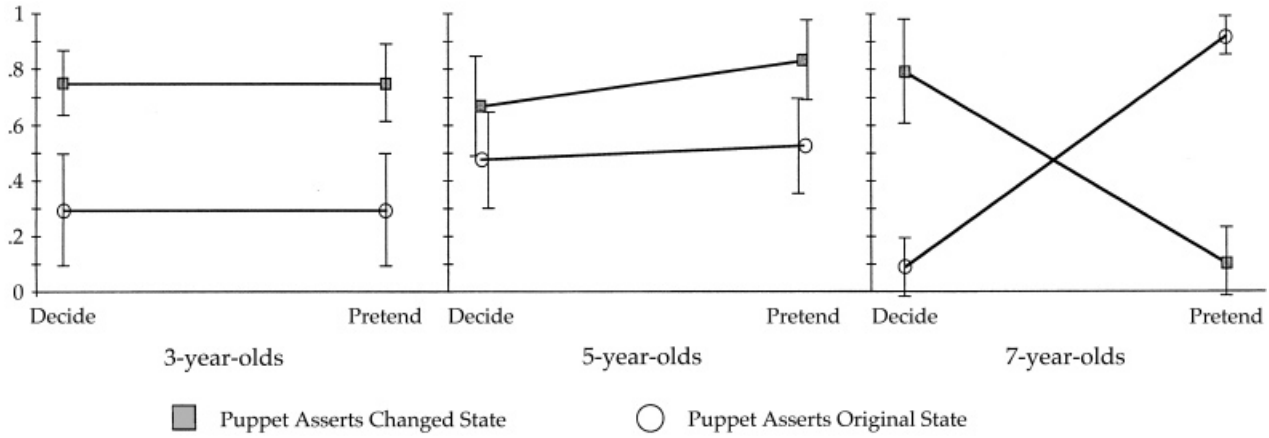

Figure 3 Results from Question 3 of Experiment 1: Interactions between type of episode (decide or pretend) and type of puppet's assertion (original state or changed state) at each level of age. The vertical axes represent the mean proportion of responses rejecting the puppet's assertions. Error bars represent one standard deviation.

pattern. One younger child matched the correct pattern; four showed the changed pattern. In contrast, ten 7-year-olds showed the correct pattern. Two older children consistently judged the original state to be true.

Discussion

The results from Experiment 2 suggest that preschool-aged children (3- and 5-year-olds) may be confused about the epistemic consequences of conventions. Slightly older children, however, seem to have a good grasp of the different truth values involved in establishing a convention and pretending. Before discussing younger children's confusion, it is important to point out some of the ways they succeeded on the tasks above.

One interesting finding is that young children accepted that the same behavior may result from both pretending and deciding. Both deciding and pretending to change a doll's name to "Anne" imply saying that the doll's name is Anne. This result may be relevant to the debate over whether young children have a behavioral or mentalistic understanding of pretense (cf. Lillard, 1993, 1998). If both deciding and pretending involve the same behaviors, then the two activities must be distinguished by the mental states of the actors. From the results reported above, however, it is not clear whether young children do distinguish pretense and decision (see below). Although 7-year-olds in the above experiment showed some tendency to predict different behavior for pretending and deciding, this result may have been the result of contamination from the other questions involved in the procedure. The focus on what is really the case may have led older children to interpret the "What should we say?" question as "What should we say to be truthful?"

The questions that required assessments of the true states of affairs presented more difficulties for younger children. Consistent with the results of previous research, we found that preschool-aged children did correctly judge that pretending something does not change reality. In contrast, these younger children did not seem to appreciate that a different type of act, deciding a convention, can change what is true. Many children consistently denied that reality changed in any of the episodes. Moreover, asking the questions about conventions confused children's intuitions about pretending. This confusion may indicate that their understanding of the relation between pretense and reality is tenuous (cf. Perner et al., 1994). Such a conclusion also seems consistent with research demonstrating that young children occasionally see actual implications of pretense or imagination (Woolley, 1995). However, that the convention episode was confusing and seemed to corrupt intuitions about pretense suggests that children did see deciding and pretending as different. Perhaps the deciding episode highlighted the difficult issue of the relation between mental states and reality; children were forced to think about the connection in the deciding episodes but may have had a relatively superficial or automatic way of dealing with such questions about the more familiar cases of pretense. When confronted with questions about truth, younger children may regard conventions as serious but ineffective. For example, they may not have accepted that matters of naming or ownership were conventional; one could be serious in intent but that does not change the facts. Given this interpretation, deciding on a convention might be something

like choosing to hold a false belief: a confusing state of affairs. Note that young children's good performance on the control event (and on the behavioral questions for all events) suggests that they were not simply overwhelmed by task demands nor merely responding randomly to any question about decisions.

Although preschool-aged children had difficulty coordinating representations and reality, slightly older children handled the questions in Experiment 2 with seeming ease. Six- to 7-year-olds reliably judged that deciding a convention changed reality whereas pretending did not. Moreover, these children reacted differently to deciding and pretending in their evaluations of truth claims. After deciding a convention, it was wrong to assert the original facts; after pretending it was wrong to assert the changed state. Importantly, nothing about the objective, physical conditions differed in either case. The truth or falsity of the assertions, what was really the case, depended on the intentions and mental representations of the individuals participating in the episodes. Changing those representations (by means of decisions) was understood to be effective at changing reality. In this way decisions were different than acts of pretense. Seven-year-olds' performance suggests that they see conventions as serious with regard to truth claims and as effective at changing truth.

Although the results of Experiments 1 and 2 appear consistent, there are two issues to consider. First, a comparison is complicated by the fact that the ages of children differed somewhat in the two experiments. A second difficulty is that the assessment of children's tracking representations was very limited in Experiment 1. To address these two concerns, a follow-up experiment was conducted with the participants from Experiment 2. This third experiment focused on abilities to track representations by assessing children's understanding of representational change.

EXPERIMENT 3

To assess children's understanding of the relation between conventions and representations, participants in Experiment 3 were presented with a version of Gopnik and Slaughter's (1991) changed representation procedure. Children were asked to reason about changes in representations involving pretense, conventions, and objective beliefs. To facilitate comparisons across studies, the same children from Experiment 2 were tested in Experiment 3. We predicted that the 5-year-olds would generally pass representational change tasks, whereas the younger children would fail. However, it was also likely that there would be different rates of success across convention, objective belief, and pretend tasks. The oldest group of children (6- and 7-year-olds) from Experiment 2 was not included in Experiment 3 because of the expectation that they would perform at ceiling (show no difficulty with any changed representation tasks).

To further probe children's thinking about conventions, two versions of a convention task were included. One involved leading children to form a false belief about a conventional fact. In a second task, children were presented with a scenario in which an experimenter's decision changed a convention. This task was included as a control against the possibility that tasks involving conventions are simply more difficult than other tasks. A convention was first introduced and then changed (e.g., the experimenter decided to change a doll's name from "Anne" to "Sally"). This situation should be directly analogous to a control task (from Gopnik & Slaughter, 1991) in which children watch as the contents of a box are changed (a toy animal removed and replaced by a toy truck). In both cases children should be able to accurately report their present and past beliefs (which have changed in response to a change in the facts).

Methods

Participants. Forty-two children participated in this experiment. There were 22 in the 3-year-old group (M = 3,7, *range* = 3,2–3,11) and 20 in the 5-year-old group (M = 4,11, *range* = 4,3–5,7). The majority of children had previously participated in Experiment 2. Four children were lost and eight were added. Children participated in Experiment 3 approximately 1 week after Experiment 2.

Design and procedure. The procedure used in Experiment 3 was modeled after the representational change tasks used by Gopnik and Slaughter (1991). Children were directed into one representational state and then induced to change state. Children were then asked to recall their initial state. Three items were taken directly from Gopnik and Slaughter (1991): the belief task, the pretend task, and the control task. In the belief task, children were led to, and then disabused of, a false belief (i.e., about the contents of a crayon box). In the pretend task children first pretended one way and then another with a prop (i.e., pretending a cup holds different liquids). In the control task children were presented with a physical transformation (i.e., the contents of a container change). Two additional items involved conventions. In the false convention task children were first led to, and then disabused of, a false belief about a conventional fact. For example, children were first asked what they thought a doll's name was. They were then told the

actual name. In the changed convention task, children were presented with a transformation of convention. For example, the experimenter introduced a doll with one name and then decided to change the name. Two types of conventions were included (name and ownership) with pairings of content and type of task (false or changed) counterbalanced across participants. Complete descriptions of all tasks are presented in Appendix C.

Tasks were presented in random orders with the exception that ownership items were always presented last. (Children actually acquired stickers in the course of these tasks and tended to become distracted.) Within each task, three questions were always asked (in a fixed order). Children were asked to report their initial state (e.g., "What do you think is in the box?"), their changed state (e.g., after the box was opened, "Now what do you think is in the box?"), and, crucially, the test question asking their recall of their initial state (e.g., "When I first asked you, before we looked in the box, what did you think then?"). See Appendix C for a complete list of questions. Materials included toys and other props as described in Appendix C.

Results and Discussion

Children were scored as correct on a task if they accurately reported their initial state (e.g., belief, pretense) on the test question. Nine children (eight younger) failed the control task (incorrectly reported what was initially in the container). Following Gopnik and Slaughter (1991), these children were dropped from further analyses. The data from the remaining children are presented in Table 2. Children were generally correct when asked to report their current understanding following the changes in status (second questions); no more than four children gave mistaken replies for any task. Errors in reporting the changed state are most crucial for the convention tasks. An error here might indicate that children were denying that the experimenter could establish the convention; however, excluding children who failed to report the changed state produced no change in proportions correctly reporting their initial thoughts. Because of experimenter error, four children received only a single type of convention task (either two false convention tasks or two changed tasks). For this reason, data are reported as proportions of correct responses rather than as numbers of children passing tasks.

Older children passed all tasks at rates significantly above chance. Thus, these children demonstrated a good ability to track the representations involved in episodes of conventions (as well as in pretense and objective belief tasks). Younger children passed the false convention and false belief tasks at rates not significantly different from chance. In contrast, their performance on pretend and changed conventions was better than chance. These results are generally consistent with the findings from Experiment 1. Three-year-olds had difficulty tracking serious epistemic representations. The older children did seem able to reason about changes in representational states. Perhaps the slight age difference, or the difference in task, accounts for these children's better performance as compared with Experiment 1.

Table 2 Proportions of Correct Reports of Past Mental States, Experiment 3

	Changed Conventions	False Conventions	Pretend	False Belief
3-year-olds	.82*	.59	.79*	.57
5-year-olds	.92*	.83*	.95*	.74*

* $p < .05$, one-tailed Wilcoxon tests.

Also of interest are comparisons between tasks. Because the relative performance of children in the two age groups seemed similar, their data were combined for this final analysis. From previous research (Gopnik & Slaughter, 1991), and from the results of Experiment 1 we predicted that two of the tasks should be relatively difficult: the false belief and false convention tasks. Performance on these two tasks did not differ, $T(11) = 22.5$, *ns.* Two of the tasks were predicted to be easier: changed conventions and pretense. Performance on these two tasks did not differ, $T(7) = 17$. A comparison of mean performance on the two difficult tasks with performance on the two easier tasks confirmed the general prediction: The mean proportion correct for the more difficult tasks was .71; for the easier tasks the proportion was .86. The difference in performance was significant at $p < .01$, $T(15) = 16.5$. Thus, tasks involving convention did not seem uniquely difficult for children. Neither were tasks involving false beliefs about convention uniquely easier than those involving other sorts of false beliefs. The results from Experiment 3 suggest that conventions are understood to involve truth claims—to be serious mental states akin to beliefs. The similarity between convention and belief also suggests that children's difficulties with false belief tasks are not (solely) due to a conflict between an apparent physical reality and a hypothesized mental state. Children may fail to report false beliefs (about conventions) even when the false and the true representations are equally consistent with the physical facts (cf. Flavell et al., 1992; Lillard, 1998). Note that something like

the converse of this possibility is also inconsistent with the results. It is not that reasoning about conventions is itself difficult: Children generally passed the changed conventions tasks.

GENERAL DISCUSSION

Taken together, the results from Experiments 1 through 3 suggest a developmental progression in young children's conceptions of convention. As discussed above, there are three components to our commonsense adult conception of convention. First, we recognize that conventions establish norms for behavior, how one should act. A second aspect is that we recognize decisions about conventions to involve serious epistemic states: People form representations about conventions, representations they take to be true. If young children do not fully appreciate this feature of conventions, they may treat conventions as akin to pretending. A third aspect of our adult view is that decisions about conventions are (at least sometimes) effective. Not only does a decision about a convention involve a truth claim, it is a valid or correct claim. If someone decides her pet is named "Fido," she believes something is true—and it is. If children recognize only that conventions are serious but do not accept that they are effective or legitimate, children may see conventions as akin to false beliefs. Although Experiments 1 through 3 are in no sense definitive, they do provide some evidence consistent with both of these misinterpretations of conventions. In addition, the results also suggest that young school-aged children may appreciate all three aspects of the adult sense of conventional truth.

Even the youngest children in the experiments reported above (3-year-olds) were able to keep track of changes in conventions. Children generally knew how to respond to rule changes and realized that decisions establish new norms. For example, children accepted that an experimenter's decision to change the rules of a game would change the conditions under which prizes were awarded and also change what it was "right" to say about the game. Such good performance seems consistent with other demonstrations that quite young children are able to interpret mental representations as involving "acting as if": To adopt a convention (or engage in a pretense, or hold a belief) implies doing some things rather than others (Lillard, 1998; Perner, 1991; Wellman, 1990). Although not generally stressed in formulations of "acting as if," such a conception also seems to allow children to develop normative expectations. To adopt a convention (engage in a pretense, hold a belief) implies one should do some things rather than others. As functional and useful as a nonrepresentational understanding of convention might be, it does have limitations. In particular, at a behavioral level making out the distinction between pretense and convention would seem difficult.

At least for adults and older children conventions are understood to involve representations. It is the kinds of thoughts or intentions people form when engaging in conventions (or pretense or belief) that lead them to behave certain ways. The data from the experiments above suggest that at around 4 to 5 children come to view conventions in terms of representations. They can successfully track the thoughts that people form when engaged in the establishment of convention (Experiments 1 and 3). Although younger children may have some understanding of representations, they did not show an appreciation that people could form diverse representations of conventions. Evidence about tracking representations is what begins to allow us to see whether young children distinguish conventions and pretenses.

In general the achievement of a representational understanding of serious epistemic states (e.g., belief) is thought to be difficult for young children because it requires coordinating attributes of the external world with attributes of the internal, mental world. It has often been argued that it is easier for children to keep track of pretense representations because they need not make this coordination (pretense does not purport to represent the world). Given the close similarity between pretense and conventions (especially the individual conventions explored in this study), it seemed possible that children would treat decisions about conventions as just like pretending. If so, we would expect that children would show equal facility tracking pretense and conventional representations and have more difficulty with beliefs than with either pretense or convention. This did not seem to be the case, however. Although we did replicate the finding that success on representational diversity tasks is greater for pretense than belief, tracking thoughts about conventions was no easier than tracking beliefs and was more difficult than tracking thoughts about pretending. Thus, the evidence is consistent with the hypothesis that children are treating conventions as serious and this treatment impedes children from achieving an adequate understanding of the representations involved.

Recognizing that representations may be serious or not provides a means for distinguishing convention and pretense. However, by itself, appreciating this quality of representations will not distinguish conventions from beliefs: Both are serious. What is needed in addition is an understanding of active, constructed, truth. Adopting a convention changes the truth of a

proposition, forming a belief does not. For children who recognize conventions as serious but who have not yet recognized that truth may depend on mental activity, adopting a convention puts one in an anomalous position: It is akin to deliberately adopting a false belief. Put another way, perhaps the only truly consistent interpretation of adopting a convention is that one is really pretending. The anomaly of convention is apparent only when dealing with questions of truth. Indeed, it was questions probing what children thought was real or correct that proved most troubling. In Experiment 2, children younger than 6 or 7 were unable to consistently report whether adopting a convention changed a fact "for real." Importantly, it was not simply that these children were overwhelmed by task demands: They answered behavioral questions consistently and correctly, they correctly responded to questions about reality in a control task (impossible convention), and they answered reality questions correctly in the context of pretense (as long as pretense tasks were presented before convention tasks). Furthermore, children only slightly older, 6- to 7-year-olds, generally did appreciate that conventions changed truth whereas pretenses did not. By age 6 or 7 children showed an understanding of the world-to-mind fit of decisions about conventions; reality comes to match the mind. In contrast to the younger children, these older children demonstrated their understanding through correct performance and lack of confusion.

Before considering some of the implications of the findings reported above, it is important to point out that the conventional facts included in Experiment 3 were a very restricted and select set. The conventions that can be stipulated within an experimental setting are very limited. In some cases it may have seemed that the lines between decision and pretense blurred (into, for example, deciding to pretend). However, it was the case that the children took away a doll or stickers as a consequence of (some of) the decisions. In contrast, they did not have anything as a consequence of pretense. Nonetheless, more consequential conventions (e.g., the name of a real pet rather than a paper doll) might reveal a sharper distinction between decision and pretense.

Do Young Children Understand Conventions?

In some respects, preschool-aged children's confusion over conventions in this study may be surprising. In particular, there is a considerable literature in the area of moral reasoning suggesting that even quite young children understand something about conventional social norms (see Tisak, 1995, for review). For example, Smetana (1981) argues that preschool-aged children recognize that some evaluations are dependent on the presence of explicit rules. Conventional rules are understood to be relative to particular social groups and alterable by means of group decision. These conventional evaluations stand in contrast to moral judgments, which are understood to be universally applicable (even in the absence of rules) and unalterable (Turiel, 1983, 1989). Although young children may have grasped some of the attributes of convention, the results described above suggest they do not have a complete understanding.

One way to make sense of the nature of young children's conception is to consider the distinction between the epistemic and motivational characteristics of conventions. Conventions may be thought of in terms of what one should or should not do, as involving evaluations of good versus bad. This is the sense in which conventions are appropriately contrasted with morals (both involve goods). It may be that this sense of convention is understood before the epistemic sense (evaluations of true versus false) involved in the above studies. Such a sequence of understanding motivational states before (or more easily than) epistemic states has been suggested as a general feature of children's thinking about the mind and representations (Moses, 1993; Wellman, 1990). It seems quite possible to understand that people may (in some cases) decide what should and should not be done and that something may be good for one group and bad for another without understanding that different people may have different truths.

Focusing on the epistemic aspects of conventions, it may be surprising that older children understood conventions as well as they did. Discussions of the development of children's conceptions of truth and warrant for belief often suggest that it is not until much later that children come to recognize truth as subjective and constructed (Chandler, 1987; Enright et al., 1984; Mansfield & Clinchy, 1997). In part, the discrepancy may come from different notions of subjectivity or construction. Often, understanding subjective or constructed truth is taken to require appreciating that truth claims may be incommensurable, that there may be no common standard for adjudicating between competing claims. In contrast, the idea of convention does allow for consensus regarding truth claims but entails recognizing that the basis for those claims is arbitrary and the result of human/mental action. Thus, subjective may mean either "arbitrary but consensual" or "incommensurate." For example, arguments from authority are typically regarded as evidence of an objective epistemology (e.g., Mansfield & Clinchy, 1997). In some sense, truths based on the decision of an authority are not subjective because it is possible to provide definite criteria

for their truth or falsity. But in other terms, arbitrary authority is subjective. Such truths are chosen and not determined by objective facts or the correspondence of beliefs and physical conditions. Conventions are cases of truths constructed through human mental/social activity, although we often expect consensus and intersubjective agreement on those constructions. Thus conventional truth may represent something of an intermediate step, or a distinct domain, in epistemological development (for discussion, see Kalish, in press).

In coming to our adult commonsense understanding of the mind, children must learn that there are many types of connections between reality and representation. Research suggests that understanding the epistemic relations between mind and world may be particularly problematic for young children. One facet of this relationship that has received considerable attention is the way activity of the mind structures our understanding of reality. Conventions are a relatively extreme form of this activity: belief is dependent on mental activity, and so is reality. That children by the age of 6 or 7 appreciate this suggests that they have acquired a rich and powerful commonsense psychology. That it is not until 6 that such an understanding is fully apparent (at least in the current study), despite young children's good understanding of some aspects of convention, supports and extends existing research. We expect that future studies of children's understanding of active mental processes will continue to illuminate their developing theories of mind.

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APPENDIX A

Script for Convention, Unexpected Contents, and Pretend Tasks: Experiment 1

Convention Task

The first game we'll play will be with these marbles. See I've got some orange marbles and some blue marbles and we'll use these marbles in a game where you can win stickers.

So I'm going to invent a game with these marbles. Now I'm going to make the rules for this game. Here's how it works. I'll choose one color of marbles to be the winners. Then I'll put all the marbles in this bag and you'll pick one out. If you pick out a winner, you get a sticker. OK? How does the game work? What happens if you pick out a winner? Good.

OK, this is my game, I invented it and I make the rules. So I decide that the blue marbles are the winners. Here, so we remember I'm going to put a blue sticker on this sign. This sign says "Winners are:" Blue.

Which are the winners? Is this sign right?

Alright, pick out a marble. No peeking. OK, let's try again (play twice or until the child has won at least once).

Oops. Feppy's gotta go now. Bye Feppy. He's in his cave where he can't hear us.

Well now I've decided to change my game. Now I decide that the orange marbles are the winners.

So, which color ones are the winners? Is this sign right?

Oh look, here comes Feppy back. Did Feppy hear us? Did he hear what I decided? (*correct child if wrong*)

So what color does Feppy think are the winners? Is he right?

After child draws: So what happens, do you get a sticker or not?

(Play twice or until child wins once). OK, good game.

Unexpected Contents Task

Oh, Feppy's got to go again. Bye Feppy.

Hey, while Feppy is gone and can't hear us, let's try this game. Look at this box I've got here. (*Hold up crayon box*). What do you think is in the box? Well actually, there are candles in the box. See? OK, now I'm closing up the box so no one can see what's inside.

What's in the box? (*correct child if necessary*)

Here comes Feppy back. Remember he couldn't see what we did.

Look at this box Feppy.

To child: What does Feppy think is in the box? Is he right?

OK, good job.

Pretend Task

Here's the last game. In this game we'll play with Farmer Big Bird and his pigs. See Big Bird has two pigs, a mommy and a baby. The pigs run around saying "oink, oink."

So now Feppy has got to go. He goes back in his cave where he can't hear or see anything.

Hey, I've got an idea, let's pretend that these are dogs not pigs, OK? So this is the mommy dog and this is the puppy. We'll pretend Big Bird has some dogs.

So what will these guys say. Should they say "oink, oink" or "woof, woof"?

Right, we're pretending they are dogs so they run around saying "woof, woof."

OK, quiet now everybody.

Look, here comes Feppy back. What will Feppy think? Does he think these are dogs or does he think these are pigs? What are they really?

APPENDIX B

Events in Decide and Pretend Episodes: Experiment 2

Decide Episode Events	Pretend Episode Events
Now let's decide some things about this doll. Right now this doll's name is Sally. For real, her name is Sally. But let's do something different, let's decide to change the doll's name. What new name should we choose for this doll? That's a good idea. We chose X. We've decided the doll's name is X, not Sally.	OK, now we'll pretend something together. For real, this bear's name is George. But let's do something different. Let's pretend to give him a new name. What do you want to pretend to call him? OK, good idea. We'll pretend this is X. We're pretending to call the bear X, not George.
OK, good. Let's decide some more things about this doll. When I put X away, I keep her in this purple sleeping bag. This is where she really belongs. But I don't like this purple bag anymore. I want to choose a new place to keep her. Let's decide whether she belongs in this red sleeping bag or in this green sleeping bag. That's what I'd like to do too. We chose to keep X in the green sleeping bag. We've decided X belongs in the green sleeping bag not the purple one.	OK, good. Let's pretend some more things about the bear. I always keep him in this black cave. That's where he really goes. But now I want to pretend he has a new place. Should we pretend he belongs in this red cave or in this green cave? I like that idea. Now we'll pretend that George belongs in the green cave. We're pretending George goes in the green cave not in the black one.
Really, X doesn't have any things that go with her. This is just the way she comes. But I think she needs something to look pretty. Let's decide that one of these necklaces goes with her. OK? Should we decide the blue necklace goes with the doll or the pink one? OK, good idea. I think that one looks good. We chose the blue necklace to go with X. We've decided the doll has a blue necklace.	Really, George doesn't have any things that go with him. This is just the way he comes. But I think we should pretend something. Let's pretend that one of these hats goes with him. OK? Should we pretend the blue hat goes with the bear or the black one? OK, good idea. I think that's a good one. We'll pretend the blue hat goes with George. We're pretending the bear has a blue hat.
For real, this is my doll. But I have decided to give the paper doll to you. Now this is your doll. I decided it belongs to you, not me.	For real, this is my bear. But I am pretending to give the bear to you. I am pretending that this bear isn't mine anymore. I'm pretending it belongs to you, not me.

Control Event Presented as either Pretense or as Decision
This bear/doll is really made out of paper. But let's pretend/decide something. Let's decide/pretend the doll/bear is made out of Play-Doh™. OK, we decided/pretended the doll/bear is made out of Play-Doh™.

APPENDIX C

Tasks Used in Experiment 3

Task	Text
Changed convention	I want to show you something. This is my doll, her name is "Emily." Can you say "Hi Emily"? (Then put the doll in a bag and take out the same doll). What do you think this doll's name is? Right, this doll's name is "Emily" (or whatever child says). This is Emily. You know what? I think I'd like the doll to have a different name. Let's decide to change the doll's name. Will you choose a different name for the doll? OK, we decided that the doll's name is _____. So what do you think the doll's name is? Right when I took the doll out of the bag, when I first asked you, what did you think the doll's name was?
False convention	I want to show you something. This is my doll, her name is "Emily." Can you say "Hi Emily"? (Then put the doll in a bag). OK, now I'm going to think about something for a minute. (Take the doll out of the bag). Here's a doll. What do you think this doll's name is? OK, you know what? Really this doll's name isn't "Emily," it's Julie. See, when she was in the bag I decided that her name would be "Julie." So my doll's name is Julie. So what do you think the doll's name is? Right when I took the doll out of the bag, when I first asked you, what did you think the doll's name was?
Changed convention	Here's a sticker. Whose sticker do you think this is? Right. This is my sticker. You know what? I think I'd like you to have the sticker for helping me play this game. Let's decide to give the sticker to you. OK? I decided that this is your sticker. Now whose sticker do you think this is? Before I told you about it, whose sticker did you think this was?
False convention	Here's a sticker. Whose sticker do you think this is? OK, you know what? Really this isn't my sticker. This is your sticker. This sticker belongs to you for helping me with this game. Now whose sticker do you think this is? OK, before I told you about it, whose sticker did you think this was?
Pretense	Here's a glass. Can you pretend that there's cold orange juice in this glass? (let child pretend to drink, if she or he chooses). What are you pretending is inside this glass? Let's pour out all the orange juice (pretend to empty glass). Now can you pretend something else? Can you pretend that there's hot chocolate in this glass? Now what are you pretending is inside this glass? When I first asked you, before I poured out the glass, what did you pretend was inside the glass then? Did you pretend there was orange juice inside or hot chocolate inside?
False belief	(Child is shown a crayon box). What is inside this box? (The box is opened, revealing candles.) Now, what is inside this box? When I first asked you, before I opened up the box, what did you think was inside the box then? Did you think there were crayons inside the box, or candles?
Control	(Child is shown a box. Then the lid is removed.) What is inside this box? Let's take the frog out and put this truck inside. Now what's inside? When I first showed you the box, before we opened it, what was inside it then? Was there a truck inside or was there a frog inside?

REFERENCES

Chandler, M. (1987). The Othello effect: Essay on the emergence and eclipse of skeptical doubt. *Human Development, 30*, 137–159.

Chandler, M. (1988). Doubt and developing theories of mind. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing theories of mind* (pp. 387–413). New York: Cambridge University Press.

Enright, R. D., Lapsley, D. K., Franklin, C. C., & Streuck, K. (1984). Longitudinal and cross-cultural validation of the belief-discrepancy construct. *Developmental Psychology, 20*, 143–149.

Flavell, J. H. (1988). The development of children's knowledge about the mind: From cognitive connections to mental representations. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing theories of mind* (pp. 244–267). New York: Cambridge University Press.

Flavell, J. H., Mumme, D. L., Green, F. L., & Flavell, E. R. (1992). Young children's understanding of different types of beliefs. *Child Development, 63*, 960–977.

Forguson, L. (1989). *Common sense.* New York: Routledge.

Forguson, L., & Gopnik, A. (1988). The ontogeny of common sense. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing theories of mind* (pp. 226–243). New York: Cambridge University Press.

Gopnik, A. (1993). How we know our minds: The illusion of first-person knowledge of intentionality. *Behavioral and Brain Sciences, 16*, 1–14.

Gopnik, A., & Slaughter, V. (1991). Young children's understanding of changes in their mental states. *Child Development, 62*, 98–110.

Gopnik, A., & Wellman, H. M. (1994). The theory theory. In L. A. Hirschfeld & S. A. Gelman (Eds.), *Mapping the mind: Domain specificity in cognition and culture* (pp. 257–293). New York: Cambridge University Press.

Kalish, C. W. (in press). Children's thinking about truth: A parallel to social domain judgments? In M. Laupa (Ed.), *Rights and wrongs: How children and young adults judge the world. New directions for child development.* San Francisco: Jossey-Bass.

Komatsu, L. K., & Galotti, K. M. (1986). Children's reasoning about social, physical and logical regularities: A look at two worlds. *Child Development, 57*, 413–420.

Laupa, M. (1997, April). *Similarities and differences in children's reasoning about morality and mathematics.* Paper pre-

sented at the meetings of the Society for Research in Child Development, Washington, DC.

Lillard, A. (1993). Young children's conceptualization of pretense: Action or mental representational state? *Child Development, 64*, 372–386.

Lillard, A. (1998). Wanting to be it: Children's understanding of intentions underlying pretense. *Child Development, 69*, 981–993.

Mansfield, A. F., & Clinchy, B. M. (1997, April). *Toward the integration of objectivity and subjectivity: A longitudinal study of the epistemological development between the ages of 9 and 13.* Paper presented at the Society for Research in Child Development, Washington, DC.

Moses, L. J. (1993). Young children's understanding of belief constraint on intention. *Cognitive Development, 8*, 1–25.

Nicholls, J. G., & Thorkildsen, T. A. (1988). Children's distinctions among matters of intellectual convention, logic, fact, and personal preference. *Child Development, 59*, 939–949.

Perner, J. (1991). *Understanding the representational mind.* Cambridge, MA: MIT Press.

Perner, J., Baker, S., & Hutton, D. (1994). Prelief: The conceptual origins of belief and pretense. In C. Lewis & P. Mitchell (Eds.), *Understanding the Representational Mind* (pp. 261–286). Cambridge, MA: MIT Press.

Piaget, J. (1929). *The child's conception of the world.* London: Routledge and Kegan Paul.

Searle, J. R. (1983). *Intentionality.* Cambridge, U.K.: Cambridge University Press.

Smetana, J. G. (1981). Preschool children's conceptions of moral and social rules. *Child Development, 52*, 1333–1336.

Tisak, M. S. (1995). Domains of social reasoning and beyond. *Annals of Child Development, 11*, 95–130.

Turiel, E. (1983). *The development of social knowledge: Morality and convention.* Cambridge, U.K.: Cambridge University Press.

Turiel, E. (1989). Domain-specific social judgments and domain ambiguities, *Merrill-Palmer Quarterly, 35*, 89–114.

Wellman, H. M. (1990). *The child's theory of mind.* Cambridge, MA: MIT Press.

Wimmer, H., & Perner, J. (1983). Beliefs about beliefs: Representation and constraining function of wrong beliefs in young children's understanding of deception. *Cognition, 13*, 103–128.

Woolley, J. D., (1995). The fictional mind: Young children's understanding of imagination, pretense, and dreams. *Developmental Review, 15*, 172–211.

Woolley, J. D., & Wellman, H. M. (1993). Origin and truth: Young children's understanding of imaginary mental representations. *Child Development, 64*, 1–17.