CHAPTER NINE

Pretend Play and Cognitive Development

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Introduction

Pretending is among the most interesting of childhood’s activities. As many have noted, pretending appears to be an early instance of the child's ability to use and understand symbols (Piaget, 1945/1962). Using symbols is one of the human species’ major achievements; some would argue that it is the most important factor in our uniqueness among animals. Yet in contrast to other activities in which the symbolic function is central, pretend play receives relatively little attention. Language acquisition, an important aspect of which is learning to use words as symbols, is perhaps the most-studied phenomenon in child development. Theory of mind, which is in large part the study of minds as representing or symbolizing a state of the world, has become a dominant topic of study in cognitive development (Wellman, ch. 8 this volume). DeLoache’s (ch. 10 this volume) studies of children’s use of scale models have received much well-deserved attention, for casting light on the development of symbolic understanding. Yet pretend play is rarely even accorded a chapter in child development handbooks.

Pretending is also of interest because of its mysterious place among apparently innate activities. Pretending is judged to be innate in part because it is universal and emerges on a set timetable (Eibl-Eibesfeldt, 1989). The world over, babies begin to pretend when they are 18–24 months of age. This apparently occurs regardless of whether pretending is modeled for them; even in cultures in which parents discourage pretending, children still do it, suggesting a biological basis (Carlson, Taylor, & Levin, 1998; Gaskins, 1999; Haight, Wang, Fung, Williams, & Mintz, 1999; Schwartzman, 1978; Taylor & Carlson, 2000). Another criterion for innate behaviors is that they are stereotyped in appearance; this also holds for pretending, which begins with simple object substitutions that are self-directed, and evolves to complex role-play.

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Yet unlike many other innate behaviors, pretend play does not serve any obvious survival function. Innate behaviors are generally phylogenetic adaptations to the environment (Eibl-Eibesfeldt, 1989). Even babbling, another innate human behavior, serves apparent developmental purposes. Human babies babble between 3 and 12 months, the world over. Accumulating evidence suggests that the selective value of this behavior is to exercise and refine vocal chords to prepare them for speaking (Levit & Utman, 1992; Locke, 1993). Babbling also serves protoconversations, because parents (at least in many cultures) tend to "talk back" with their babbling infants. Such protoconversations set infants up for understanding the back and forth nature of verbal exchange (Bruner, 1983), as well as promoting attachment and intersubjectivity (Isabella & Belsky, 1991). By comparison, pretend play's purpose is a mystery. The mystery is this: young children need to adapt to the world as it is, yet in pretend play they contrive the world to be as it is not.

Below I briefly review the history of the study of pretend play, the developmental course of pretend play, and literature on cultural universals and variations. The bulk of the chapter then reviews cognitive skills that are involved in pretend play. Focus alternates between pretending oneself and understanding pretense in others. Pretending oneself requires some understanding of pretense, for example understanding that pretending is not real. Understanding pretense in others, however, may require some skills that are not involved in pretending oneself, for example, reading others' intentions.

**History of study**

Parten (1932, 1933) was an early chronicler of the appearance of different forms of play in children using naturalistic sampling methods in group play situations. Fein (1981) notes that the 1920s–1930s saw a first wave of interest in pretend play, and that it was often included in the era's scholarly overviews of child development. A second wave of interest in pretense occurred in the 1940s, stimulated by personality theorists and play therapy (Fein, 1981). A third wave of interest was stimulated by Piaget's (1945/1962) writing on the emergence of pretending in his own children. Experimental methods of studying pretend play emerged as part of this movement, although Piaget himself used naturalistic observations of pretense.

Piaget designated pretending a major hallmark of the sixth stage of the sensorimotor period, along with language and deferred imitation. All three activities were seen as evidence of representational capacity (Smith, ch. 23 this volume). For Piaget, pretending is symptomatic of the child's inability to accommodate cognitive structures to the world: a mature cognitive system does not need to twist reality to its own ends. In addition, Piaget focused on pretending as an individual process; this is often read as embodying a view that the child alone invented and used symbols (Smolucha & Smolucha, 1998). Although Piaget (1945/1962, p. 4) noted that "obviously social life plays an essential role in the elaboration of concepts and of the representational schemas," his research focused on the emergence of pretending as a solitary activity. This perspective on pretending as an initially asocial activity has dominated the field, although recently many scholars take a Vygotskian perspective and consider how pretense arises during social interactions.
with more experienced players (Goncu, 1993; Haight & Miller, 1993; Howes, Unger, & Matheson, 1992).

During the 1970s, pretend play became a lively topic of research. Studies emerged detailing the stages of pretending, as well as how children engage in object substitutions and the application of agency to pretend entities (Fein, 1975; McCune-Nicolich, 1977; Nicolich, 1977; Watson & Fischer, 1977). The relationship between pretend play and language, another major hallmark of the symbolic capacity, was also intensively investigated (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979; Bretherton, Bates, et al., 1981). In addition, pretend play training was used to determine if it would facilitate children’s performance on other cognitive tasks, such as conservation. This was done because pretending appears to involve a form of Piagetian decentration (Smith, ch. 23 this volume): the separation of symbol and referent. These training studies did not, in the end, produce definitive results, largely due to methodological problems (Rubin, Fein, & Vandenberg, 1983; Smith, 1988). As is too often the case in training studies, the control groups were generally not treated appropriately (e.g., all things equal except the pretend). Another common problem was that experimenter effects were not controlled for by use of a blind post-test experimenter. In the wake of the 1970s surge of activity, pretend play research declined until just recently, when it has received new vigor as a possible early marker of a theory of mind, as discussed by Wellman (ch. 8 this volume) and later in this chapter.

Developmental course

Many excellent detailed reviews describe the developmental course of pretend play (Fein, 1981; Nicolich, 1977; Piaget, 1945/1962; Rubin et al., 1983); a short summary is provided here. Studies of pretense have primarily involved middle-class European and Euro-American children, although there is emerging interest in cultural differences and similarities.

The earliest instances of pretending are usually noted in the second year (Fein, 1981). In one classic example, Piaget (1945/1962) described Jacquelyn at 15 months, putting a blanket under her head, blinking her eyes, laughing and saying “Nono” (Obs. 64A). This combination of activities suggested she was pretending to go to sleep on the floor, and that the blanket was serving as a symbol for her pillow; indeed, the blanket was used in this manner several times over the next few days. A dramatic increase in symbolic acts often occurs between 15 and 18 months of age (Rubin et al., 1983), and by about 24 months of age, pretending is in full swing (Bates et al., 1979; Bretherton, 1984; Dunn & Wooding, 1977; Fein, 1981; Nicolich, 1977; Tamis-LeMonda & Bornstein, 1991). One- to 2-year-olds spend 5–20 percent of their play time engaged in pretense activities (Dunn & Dale, 1984; Dunn & Wooding, 1977; Haight & Miller, 1993; Miller & Garvey, 1984). Two-year-olds not only engage in pretense themselves, but are also proficient at interpreting and responding to the pretense acts of experimenters (Harris & Kavagnaugh, 1993; Walker-Andrews & Kahana-Kalman, 1999). Sociodramatic pretending with peers appears around 4 years of age, or earlier in the context of a more proficient partner such as an older sibling, or the mother (Dale, 1989; DeLoache & Plaetzec, 1985; Dunn & Dale, 1984; Fiese, 1990; Haight & Miller, 1993; Howes et al., 1992;
Kavanaugh, Whittington & Cerbone, 1983; Miller & Garvey, 1984; O'Connell & Betherton, 1984), or the father (Farver & Wimbart, 1995). Pretense with these more accomplished partners is at a higher level than is pretense when alone. Although Piaget claimed that pretending declines in middle childhood, elementary school children still pretend in their free time (Eifermann, 1971). Some theorists maintain that pretense does not disappear, but only goes underground as it becomes socially unacceptable. Indeed, all counterfactual and hypothetical thinking may be thought of as a form of pretense (Hofstaedter, 1979), as may engaging with all forms of art (Walton, 1990).

As mentioned earlier, pretend play does appear to be universal; the developmental patterns just mentioned above have been observed in a variety of communities around the world. Haight and colleagues (Haight et al., 1999) have proposed that the universality goes beyond the fact and early appearance of pretend play, to how pretend is conducted. For example, they speculate that the world over, children use objects in their pretend play, and that pretend play takes place largely in a social context. However, there are also variations across cultures in pretend play.

Cultural variation in pretense

Cultural differences in pretend play have been noted concerning the topics of children's pretense, and the frequency of different types of pretense at given ages. These differences appear to stem from the values of the adult community and ecological features (such as availability of toys). For example, Haight et al. (1999) found that American preschoolers enacted more fantasy themes than did Taiwanese children; Taiwanese children engaged in more social routine and proper conduct themes in pretense. Similarly, Farver (1999) found that Korean American preschoolers' play emphasized family roles, whereas that of European Americans emphasized danger and fantasy themes. Cultural values seem to be a likely source of these differences.

Regarding amount and ages of pretense, several studies note differences. In one study, American toddlers engaged in more pretend play than did Mexican children (Farver & Howes, 1993). Goncu and his colleagues found that American and Turkish children engaged in more pretend play than did Guatemalan and Indian children (Goncu, Tuermel, Jain, & Johnson, 1999). And Gaskins (1999) noted very few instances of pretend play among Mayan children. Regarding level of pretense, the symbolic play of Japanese 1-year-olds was more advanced than was that of their American counterparts, in a manner that was directly correspondent to the level of play of their mothers (Tanim-LeMonda, Bornstein, Cyphers, Toda, et al., 1992).

Importantly, in all these communities some pretending did occur, and the sequence and level of its occurrence was in keeping with that seen in the review studies (of mainly Euro-American and European children) mentioned in the prior section. Changes in frequency of pretense at different ages seem consistent with parental attitudes and engagement. Where pretense was frequent, adults believed it was important to development, and engaged in it themselves with children. Where it was less frequent, parental attitudes ranged from mildly accepting (it keeps the children out of the way, it is fun for them) to discouraging (the children should be working), and parents did not engage with children. Gaskins (1999) noted that when parents stopped children's pretend it was often because
children were inappropriately using household objects (for example, placing fruit on and
turning the wheel of a wheelbarrow as if to grind corn).

Pretense play connects with several important cognitive skills: social referencing,
reading intentions, quarantine of hypothetical and real worlds, the symbolic function,
and role-taking. These connections are examined in the remainder of this chapter.

Social Referencing

In the United States, at least, people pretend in front of very young children. For example,
Haight and Miller (1993) found that all eight mothers they studied pretended in front of
their 12-month-olds; Kavanaugh et al. (1983), in just 40 minutes of observation, noted
75 distinct pretense utterances by eight mothers playing with 12- to 15-month-olds; and
Tamis-LeMonda and Bornstein (1991) found that 16 of 45 mothers pretended with
13-month-olds during a narrow 15 minutes of observation (see also Crawley & Sherrod,
1984). How are such young children to understand acts of pretense?

Knowledge about what is real could be an important cue. A person talking into a
banana must be pretending it is a telephone, since we do not typically talk into bananas
otherwise. But very young children lack much knowledge about what is real, making their
ability to interpret acts as pretense especially puzzling. New events are witnessed every
day by young babies; why shouldn't talking into bananas be yet another new real event?
One might expect that young children see pretend events as symbols of known real ones
right away, and yet their symbolizing abilities do not seem sufficient at such young ages
(DeLoache & Smith, 1999; Tomasello, Striano & Rochat, 1999). One possibility is that
social referencing abilities enable children to categorize new pretense events as pretense
rather than real.

Social referencing is using another person's response to an ambiguous situation as a
guide for one's own response (Campos, 1980; Feinman, 1992). In the classic experiments
on social referencing, 12-month-olds chose not to venture across an illusory drop-off (the
visual cliff) when their mother exhibited a negative expression, but frequently did so
when she exhibited a positive one (see also Mumme, Fernald, & Herrera, 1996). In
such situations, children appear to adopt the parent's emotional response to an ambiguous
situation, and act accordingly. Novel pretense events may present infants with a similarly
ambiguous situation: what is one to make of talking into a banana? The infant can properly
respond to this novel event if she adopts the parent's emotional stance. If the child
fails to adopt the adult's pretend stance towards this event (a stance one might describe
as "silly"), the child could become confused by the event, and mix it with her representa-
tion of the real world (discussed later). It is quite plausible that the ability to reference
adults for appropriate attitudes is a key reason for children not being generally confused
by pretense acts. Indeed, the times when children do get confused by pretense may usually
be ones in which "silly" signals are not given.

Although this account is speculative, some recent research supports the possibility
that infants engage in social referencing when adults pretend in front of them (Lillard &
Witherington, 2000). Parents were asked to have a real snack and a pretend snack (in
counterbalanced orders) with their young children, each for a two-minute period. Parent behaviors were then analyzed for differences across the two scenarios. Two differences of relevance to social referencing were observed. First, during pretense episodes (relative to real ones), adults smiled more frequently, perhaps signaling the “silly” interpretation. Second, adults looked more often at their infants, and each look was of longer duration, suggesting a possible communicative function of the smiling from the adult’s point of view. Hence proper conditions for social referencing were met on the part of the parent. Further analyses will focus on whether infants attended to and adopted the positive affect that the adults displayed towards their activities.

**Reading Intentions**

In interpreting pretense one must also read through the pretender’s actions to his or her intention. For example, if a pretender is flying a pen around through the air, pretending it is an airplane, children must realize that the actor means that the pen is an airplane. The child must cognitively insert a “real” airplane into the scene, in place of the pen. Likewise, if a pretender is holding a stick at her mouth and miming eating actions, children must complete the goal, reading her behavior as “eating” even though the pretender is not actually eating. Pretense acts are instances of ellipsis: something is left out of a scene and must be filled in.

When infants learn to read goals and intentions has recently become a very exciting area of research (Carpenter, Akhtar, & Tomasello, 1998; Gergeley, ch. 2 this volume; Meltzoff, 1995a; Wellman, ch. 8 this volume; Woodward, 1998). This research suggests that by 18 months of age, or even earlier, infants may attribute intentions or goals to actors even when the intended outcomes are not achieved. For example, Carpenter, Akhtar, et al. (1998) used verbal signs to indicate that some acts were intentional (by having the actor say “There!”) and others were mistakes (by having the actor say “Whoops!”). Even many 14-month-olds imitated the “There!” but not the “Whoops!” acts, thereby appearing to read which acts were intentional.

Meltzoff’s (1995a) experiments go a step farther, requiring that children read the content of an intention — what an adult was trying to do — into unsuccessful attempts at achieving that content. For example, on one trial an adult was shown trying to pull apart the ends of a barbell, but not succeeding. Children were later given the barbell. Eighteen-month-olds were observed to engage in the acts that the adult had been trying to carry out: they pulled the barbell apart. Children who had not observed unsuccessful attempts did not do this; nor did children who had watched a machine “try” to pull the barbells apart.

Pretense scenarios are often like the Meltzoff one, with the cues to what is being pretended located in acts that are often not completed, and with the child needing to decipher missing content. In pretending to eat a pretend cookie (a rock), one raises the rock close to the mouth, and mimics biting and chewing behaviors, but does not actually eat the rock. The child must read through these incomplete acts to what is intended, in order to comprehend pretense acts. Some research suggests that young children are
able to do this by at least 2 years of age. When shown pretend gestures (such as a hammering motion, with no object), many 18-month-olds were able to correctly select a hammer (Tomasello et al., 1999). They correctly interpreted that the experimenter's pretend intention was to hammer.

Harris and Kavanaugh (1993) also tested children's ability to read pretend intentions. For example, after watching an experimenter pour pretend tea on one of two pigs, most young 2-year-olds (but not 1-year-olds) correctly dried the one who had been "made wet." This suggests that they correctly understood that the experimenter "intended" by the pretend actions to make that pig wet. Children were probably assisted here by verbal intervention. In pretending at home, parents of 13-month-olds often accompany pretend portrayals with verbal labels that might ease the infants' task of interpretation (Kavanaugh et al., 1983).

Quarantine

A third cognitive skill involved in interpreting an event as pretend is to quarantine the pretend situation from the real one. This skill is also involved in pretending oneself; one should not confuse one's pretend imaginings with the real world (a classic symptom of schizophrenia). The separation of pretend and real has been noted by several theorists, for example, Bateson (1955/1972) pointed out that pretending is a special frame (a concept developed later by Goffman, 1974) that organizes the activities within it; in Ryle's (1949) terms, pretense episodes occur in quotes; Vygotsky (1978) noted that "The child at play operates with meanings detached from their usual objects and actions" (p. 98); and Leslie (1987) described the separation as "decoupling."

The ability to quarantine hypothetical worlds from real ones is a crucial cognitive skill. Unlike social referencing and reading intentions, which are observed in young children when they are not pretending, the ability to quarantine does not appear until later outside of pretend domains. As one example of this, young children's ability to reason hypothetically is relatively poor. However, it improves when the hypothetical premises are placed in a fantasy context (Gooswami, ch. 13 this volume; see also Dias & Harris, 1988, 1990; Hawkins, Pea, Glick, & Scribner, 1984; Kuczaj, 1981; Scott, Baron-Cohen & Leslie, 1999). When told, "All pigs can fly. John is a pig," preschoolers usually cannot draw the conclusion that John can fly; but if one precedes the premises with an invocation to pretend (as in "Let's pretend that all pigs can fly") they do significantly better. Recent research shows that pretending is one of a number of means of getting children to drop reliance on what they know is real to engage in hypothetical thinking (Harris, 2000).

Pretense always involves reasoning about a hypothetical world. If children did not hold the pretend world separate from the real one, they would become confused. Pretend acts must be marked as such, as not to be taken seriously or as reflecting the real world. The developing cognitive system's ability to do this is amazing, as Leslie (1987) pointed out. Natural selection, one would think, would evolve a cognitive system that constructs models of how the world actually is; a cognitive system that misrepresents would be
suboptimal. So how is it that the cognitive system, especially very young versions of it, can purposefully construct a mis-representation of the world, and reason and act upon it? One pertinent question here is the extent to which very young children actually do keep pretend and real systems separate, such that they know their “misrepresentation” is a misrepresentation.

Logic would suggest that children who are exposed to pretense must usually quarantine pretense events from real ones (Leslie, 1987). Imagine the converse, that young children saw pretend and real events as being of the same kind. If this were the case, then having viewed their mother pretending the banana is a telephone, children would later attempt to answer the banana. They would no longer have a distinct representation of bananas as bananas, because they had perceived the banana as a telephone during that previous encounter. Although I know of no systematic studies of this issue, their lack of report in the literature suggests that these sorts of confusions are rare. For the most part, children probably manage to keep pretend and real identities separate. If pretend were often confused for real, young children who pretend a lot, or who watch others pretend frequently, would be far more confused than they appear to be.

At times, however, young children do appear to mistake pretend for real. This mistake has been referred to as failing to maintain the real-pretense boundary (Scarlett & Wolf, 1979). Three types of situations in which confusion has been noted are discussed next.

Describing events or entities as pretend or real

Children have sometimes appeared confused about the reality status of pretend and real when asked to describe pictures, verbally described events, or television events. Errors occur in three circumstances, in particular. First, when the pretend entities are marginal ones about which adults intentionally deceive children (like Santa Claus or the Tooth Fairy), children sometimes claim the pretense entity is real (Clark, 1995). This is not really surprising, given the orchestrated cultural hoax involved (Santa Claus at the mall; parents, who are usually reliable sources of truth, telling the Santa myth with no visible signs of pretense; letters to Santa; and so on). Many children are seriously duped until they reach an age when the impossibility of the situation dawns on their emerging logic.

Another circumstance in which children err is when the entities that children are asked to classify as pretend or real “walk the boundary” even for adults, as do witches. Witches are often portrayed by real people and act in many ways like real people in movies and stories. Indeed, many otherwise sane-seeming adults also believe witches are real; Lukhman (1989) offers a fascinating account of witchcraft cults in modern-day London. The self-believed “witches” she studied typically had normal day jobs (often as computer programmers!). Although researchers might comfortably assert that witches should be classified as pretend (Morison & Gardner, 1978), children’s reduced level of certainty may not reflect a specifically developmental cognitive deficit. (I hope no witches come get me for this!).

The third circumstance in which children do not do well in such tasks is when knowledge is squarely at issue. Sometimes the entities that children are asked to classify are
ones with which they have little or no real world experience (such as a moose, portrayed cooking in a kitchen: Samuels & Taylor, 1994). To adults, this is obviously fiction, but given the preponderance of books with talking pigs who live in houses and wear clothes and otherwise behave just like humans, how are young children to know that such animals do not exist somewhere? Likewise, children have been found to be confused about the reality status of television events (such as a marriage on “The Brady Bunch”: Downs, 1990), but this is probably due to not understanding television as involving acting. Anthropologist Eve Danziger (personal communication, May, 2000) described a similar case with Mopan Mayan adults in Belize. For entertainment, she was showing the cartoon film The Jungle Book. The adults appeared quite confused by the cartoon medium, and repeatedly asked her if it was “true.” In sum, some purported cases of pretense–reality boundary breakdown involve classes of entities about which children lack knowledge, even coupled at times with deliberate attempts by adults to make the pretense seem real. These mistakes seem quite different from being mistaken about whether a parent flying a pen about with her hand is flying a pretend or a real airplane.

Scary pretense episodes

A second case in which children have appeared to think that pretense is real involves children’s behavioral responses to scary pretend situations. Children occasionally appear truly frightened during scary pretend play, such as pretending to be monsters, and they have even asked to cease playing (Garvey & Berndt, 1975; Scarlett & Wolf, 1979). Consistent with these observations of relatively naturalistic play, Harris and colleagues have found that preschool children will avoid a box after having imagined it contained a scary creature (Harris, Brown, Marriott, Whittall, & Harmer, 1991; Johnson & Harris, 1994). They suggested that preschool children might do this because they sometimes believe that what they imagine can become true, in other words that entities can cross the boundary from pretend into real. Such children really do seem to believe the monster is in the box: Kavanaugh and Harris (Harris, personal communication, September, 2000) recently had pairs of children alone in the room with the box they had imagined contained a monster, and the children discussed, with apparent seriousness, the possible existence of the monster. Interestingly, there is a high degree of individual variability in this tendency, such that some children are prone to the tendency and others are not (Bourchier & Davis, 2000; Johnson & Harris, 1994).

Children’s attempts to stop partaking in scary pretend episodes, or to avoid boxes about which they have pretended scary things, may not indicate that they are generally susceptible to pretense–reality breakdown. The scary element of the Harris and Johnson situation is probably operative. Indeed, when Woolley and Phelps (1994) had preschoolers imagine a non-scary object in a box, and later children asked to give the imagined object to a confederate experimenter, they did not go to the box for the item. Emotions are usually reliable cues to reality (Damasio, 1994; Zajonc, 1980). Physiological reactions to real and imagined scary events are similar (Lang, 1984). Children, experiencing the physiological signs of fear, might interpret their emotion as a cue to reality (see discussion
in Harris, 2000). Further, children are notoriously poor at monitoring sources (Foley, Harris, & Hermann, 1994; Foley & Ratner, 1998). They may fail to note that the source of fear, and indeed of the monster in the box, is purely their own imagination. Having failed to monitor the source, children may proceed to read the feeling of fear associated with that box as emanating from a real situation. In short, pretend–real boundary problems in the case of frightening entities certainly do exist. Yet even adults are not immune to such problems: emotions from pretend events frequently color our real-world behavior and possibly even our representations. Such cases are very interesting, but may not be relevant to more everyday pretense. Next we turn to the third case: young children's ability to quarantine more everyday, nonscary pretense events.

Nonscary pretense episodes

The third type of case to consider, regarding young children's maintaining of the real–pretend boundary, is how frequently children who are engaged in everyday, nonfrightening pretense behave as though the pretense were real. One experiment suggested that even 5-year-olds might have this problem, seeming disoriented when an adult, for example, changed the status of a pretend prop in the middle of a pretend game (DiLalla & Watson, 1988). However, more tightly controlled experiments indicated that by 4 years of age children probably manage quite well to engage in pretense without being disrupted by such interventions (Golomb & Kuersten, 1996). Taylor (1999) also found that the youngest children with whom she spoke about imaginary companions (age 4) sometimes expressed concern that the experimenter was taking their imaginary friend too seriously, and would remind her, as one child did, “It's only pretend, you know.” Wellman and Estes (1986) observed that even 3-year-olds were very clear in their understanding of the differences between pretend and real entities. They told children about one boy who had a cookie and another who was just pretending to have a cookie, and asked which boy could eat the cookie, touch the cookie, see the cookie, and so on. Even 3-year-olds did very well, suggesting clear understanding of the difference between pretend and real entities. In a recent review of this area, Woolley (1997) concluded that children are not fundamentally different from adults in their separation of real and pretend.

Can even younger children keep everyday pretense and real episodes separate? Harris and Kavanaugh (1993) suggest that by age 2, children can usually follow pretense episodes even when substitute objects are involved. DeLoache and Plaetzer (1985), in examining mother–child pretense play (at ages 15 through 30 months), saw clear examples of pretense–reality confusion in a quarter of the children studied. For example, when a mother asked a child to wipe up some spilled “tea” the child searched around as though looking for real tea. In our laboratory we also have witnessed signs of confusion when mothers pretend to have a snack with their 18-month-olds. It is uncertain why the confused responses occurred; DeLoache and Plaetzer’s (1985) sense was that the mother's pretense was of too elaborate a nature for the child's current level. Other studies show that such ongoing pretense is rare with young children, so perhaps the pretense events that lead to
confusion occur too rarely to threaten developing real-world knowledge. Closer analysis of the types of pretend adults engage in with young children, and the length of those episodes, would be helpful. Although logic would suggest that even young children generally must quarantine pretend and real, cases of confusion do exist.

The appearance-reality distinction

A special case of quarantine involves the appearance-reality distinction (Flavell, Green, & Flavell, 1986). As with hypothetical reasoning, there have been suggestions that a pretend frame improves children’s ability to understand that appearances can differ from reality. In the generic, non-pretend case, Flavell and his colleagues showed children entities that were purposely deceptive, for example, candles made to look like apples and sponges made to look like rocks. After demonstrating the apparent and real identity of each object, they asked children two questions: What does it look like to your eyes right now? and What is it really and truly? They found a marked change in children’s responses from 3 to 4 years of age. Whereas 4-year-olds answered like adults would, saying it looked like an apple but was truly a candle, 3-year-olds gave the same answer to both questions, usually that it looked like and truly was a candle. In other words, young children seemed unable to distinguish reality (candle) from appearance.

The researchers went on to examine whether children’s ability to discriminate reality from representation would be somewhat better in the realm of pretend (Flavell, Flavell, & Green, 1987), reasoning that children’s regularly pretending that one object is another should facilitate their representational understanding. For example, when a child pretends that a stick is a horse, the child has a representation that he or she maps onto some real object, namely the stick (Lillard, 1993). In such cases, it seems, children can keep reality and representation separate. To test this, in a pretend version of the standard appearance-reality paradigm, the experimenter asked, “Is she pretending that thing is a candle or pretending it’s an apple?” In the appearance condition, she asked, “Right now, does that thing look like an apple or look like a candle?” In both cases, the adult was miming eating an apple. Children performed significantly better on the pretend question than on the appearance question, possibly suggesting that pretend is an area of early competence for understanding mental representation, or keeping mental events separate from real ones.

However, an alternative explanation is that children might have done well by interpreting pretend as false action, not false representation (Lillard, 1993). The experimenter was engaging in “pretend-to-eat-an-apple” actions, not actions that would really be addressed at candles, so when asked if she was pretending it was an apple or a candle, they could answer correctly simply by reading off her false behavior. This suggestion has recently been empirically supported by Sodian and Huelsken (Sodian & Huelsken, 1999, April; Sodian, Huelsken, Ebner, & Thoerner, 1998). As in other experiments (Harris & Kavanaugh, 1993; Lillard, 2000; Tomasello et al., 1999) children’s quarantining of pretend and real seems dependent on the actions that go along with pretend (discussed later). This has important implications for children’s understanding of symbols in pretend play, discussed in the next section.
Summary

There is good evidence that children over age 2 usually understand that pretense events are not real. Exceptions have been noted when the pretense was frightening, involved marginal characters, or was possibly at too high a level. Logic would suggest that young children must not be frequently confused as to the status of pretense events, or children who were exposed to pretense would seem much more confused about the real world than they do.

Pretense Play as Symbolic

In interpreting pretense, children must not only keep pretense separate from real, but they must also understand what real events and objects are symbolized by pretense events and objects. Pretense events and objects refer to their real counterparts, just as words refer to real-world (or abstract) entities. To what extent, when children pretend or watch others pretend, do they perceive the pretend objects and events as symbols of other, real objects and events?

Language

Language has often been held out as a parallel development to pretense, as both appear to involve use and comprehension of symbols (Bates et al., 1979; Piaget, 1945/1962; Werner & Kaplan, 1963). Language production, particularly after the “vocabulary spurt” that often occurs around 18 months, may be assisted by an understanding that words are symbols for referents (Bloom, 1993). If this is the case, then the rapid increase in productive vocabulary is linked to a more general cognitive advance: understanding that one thing (in this case, a word) can stand for another (an object, situation, aspect, etc.). If so, one would expect the production of symbols in pretense to be related to the production of words as symbols. Several studies have found this to be the case: even for children under 18 months of age (e.g., before the typical vocabulary spurt), pretense and language production are significantly correlated (Bates et al., 1979; Nicolich, 1977; Tamis-LeMonda et al., 1992).

However, the notion that either early word or pretense productions are symbolic is not uncontroversial (Huttenlocher & Higgins, 1978; Piaget, 1945/1962; Tomasello et al., 1999). The fact that correlations are observed suggests some common underlying function; exactly what that is deserves further investigation.

Gesture

Pretense comprehension is often measured by imitation: adults demonstrate pretense acts and note if children imitate those acts (Bates, Bretherton, Snyder, Shore, & Volterra,
1980; Fenson & Ramsay, 1981; Ungerer, Zelazo, Keansley, & O’Leary, 1981). Imitation measures suggested pretense comprehension in children of 13 months (Bates et al., 1980), hence at a similar age to early pretense production. However, the assumption that such imitation implies symbolic understanding is clearly problematic: such actions might involve imitation without comprehension of what the acts and objects symbolized. Recent studies by Harris and Kavanaugh (1993) remedy the imitation problem but replace it with the language one. Children were shown a yellow block and a teddy, and told that the yellow block was teddy’s sandwich. Asked to show what Teddy does with his sandwich, on 50 percent of trials children in a younger group (M = 18 months) correctly had Teddy display eating behaviors towards the block; on 75 percent of trials children in an older group (M = 28 months) did. But children might have been responding based on language rather than an underlying understanding of the symbol. Indeed, research by DeLoache (ch. 10 this volume) suggests that symbolic understanding emerges later.

Understanding what pretense acts and objects symbolize appears to develop gradually over the second year, with much scaffolding by more competent players. This scaffolding occurs in two main ways. First, as may be the case with the Harris and Kavanaugh experiment just described, language scaffolds pretense comprehension. Kavanaugh et al. (1983) found that parents of 12- to 21-month-olds initiated almost all pretense episodes by making verbal pretend attributions to objects, thereby facilitating the symbolic mapping task. Second, children may read what is symbolized from pretense gestures. This is suggested by several lines of research.

Tomasello et al. (1999) asked children to select one of four objects to put down a chute. Objects were indicated by either gesture (the gesture condition) or a replica (the symbol condition). For example, children were shown either a hammering gesture (using a fist as the head of the hammer, gesture condition) or a doll-house-sized hammer (symbol condition) and the experimenter said “Can you get me that?” (no verbal referent was provided; in the first case the gesture was enacted and in the second the toy hammer was picked up). Twenty-six-month-olds succeeded in selecting the hammer in both conditions, but 18-month-olds succeeded only in the gesture condition. In a more difficult phase of the experiment, children watched the experimenter throw a wadded-up bit of paper into the air, as if it were a ball. Children were later asked to retrieve the “ball” in one of two ways. In the gesture condition, they were shown a different action one could make with a ball (pretending to roll an imaginary ball). In the symbol condition, they were shown a real ball. Only 33-month-olds (not 26-month-olds) retrieved the wadded-up paper ball, and only in the gesture condition. These results suggest that young children’s understanding of pretense is guided by their ability to read gestures, not by an ability to see one object (even a replica) as a symbol for another. This is particularly interesting in light of Goldin-Meadow (1997) and her colleagues’ recent work showing that new cognitive advances are revealed by children’s gestures before they are revealed in other ways. There is a growing sense that activity leads cognition, an insight implicit in Montessori’s notion that the hand leads the mind (P. Lillard, 1996) and in Piaget’s reliance on action as the source of knowledge (Flavell, 1963).

Findings such as these suggest that comprehension of pretense may not initially involve a symbolic capacity. Children’s ability to comprehend pretense symbols lags considerably
behind production in both domains and behind language comprehension. If a single
ability to see one object as signifying another underlies all four capacities, then pretense
comprehension should not lag. Furthermore, an opposing acquisition pattern is seen in
language and pretense: in language, comprehension precedes production, so at any given
age children understand much more language than they can produce (Benedict, 1979); not so for pretense.

Pretend Play and Social Cognition

Recent work in the area known as theory of mind (Wellman, ch. 8 this volume) suggests
there is an association between pretend play and understanding the mental states of others,
such that frequent or high-level pretenders also appear to have advanced understandings
of others' mental states (Aristotle & Jenkins, 1995; Connolly & Doyle, 1984; Dunn
& Cutting, 1999; Hughes & Dunn, 1997; Lalonde & Chandler, 1995; Lillard, in press; Schwebel, Rosen, & Singer, 1999; Taylor & Carlson, 1997; Watson, 1999, April;
Youngblade & Dunn, 1995). It is uncertain what the direction of effects are for this
relation. One possibility is that pretense in some way might drive social understanding. One
study has included a significant time dimension that suggests this may be the case:
Youngblade and Dunn (1995) found that level of pretense at 33 months was related to
mental state understanding seven months later. It is also possible that the reverse relation
occurs, such that advanced social skills enable pretense, and it is also possible that a third
underlying variable drives both pretend play and social cognition. Various means by
which the two domains might be related are explored in this section.

Metarepresentation

One way in which pretend play might drive social understanding is via metarepresentation,
or mentally representing mental representations (Wellman, ch. 8 this volume). Pretending
involves mental states that differ from reality, and children might be aware of
this fact while they are pretending. While children are engaged in pretend play, they might
reflect on the fact that they are entertaining mental ideas that are distinct from reality,
and this understanding could then be applied outside of pretense (Taylor & Carlson,
1997). Some studies purport to support this, whereas others do not (see review in Lillard,
2000). One problem with the early-insight-in-pretense account is that, were it true, one
would expect all pretend play to be associated with precocious theory of mind task
performance, since both solitary and social pretend play involve having mental representa-
tions that differ from reality. However, only social forms of pretending (including social
interaction with an imaginary companion, Taylor, 1999) are consistently related, making
a link via metarepresentation unlikely.
Decentration

Pretending might also assist social understanding via decentration, moving away from a single point of view to take other views into account (Piaget, 1945/1962). Pretend play seems to require this, because a child must decenter from one view of an object as what it really is, and adopt a different view of what that object is. This same skill is involved in perspective-taking. A body of research conducted in the 1970s did find that perspective-taking skills and pretend play were correlated (Rubin et al., 1983). However, as with metarepresentation, this view is diminished by the fact that social but not solitary pretend play are linked to social cognition.

Role-taking

A skill more specific to social pretense, which might promote social cognition, is role-taking. Children may become, emotionally and mentally, like the characters that they impersonate (Harris, 2000). Practice at taking the perspective of others at least outside of pretense is associated with social understanding. For example, children whose parents discipline them by asking them to imagine how something must feel to someone else are precocious at understanding of belief (Ruffman, Perner, & Parkin, 1999). One important issue is whether young children's pretending involves experiencing the feelings of the characters, or simply playing their roles. Historically, the practice of acting has been a practice of playing roles, not adopting the psychological characteristics of enacted characters. The insight that one could act by "becoming," in a psychological sense, the characters that one played, was the enormous contribution of Stanislavsky (1922/1984) to acting around the turn of the last century. Whether children naturally act in a Stanislavskian manner during sociodramatic play would be a pertinent topic of inquiry.

Social pretend play themes

Social pretend might also lead to understanding minds via the themes children adopt in play. Such themes are frequently emotional in nature, and require the discussion of mental states (Fein, 1989; Haight & Miller, 1993). Several theorists have even argued that a fundamental drive to pretend is to work out emotional issues (Bretherton, 1989; Fein, 1989). In keeping with this emphasis, children use more internal state words while pretending than not (Hughes & Dunn, 1997). In addition, children who pretend frequently use more internal state words than do children who pretend less (Howe, Petrakos, & Rinaldi, 1998). Other studies have shown that children who engage in more discussion about emotions pass theory of mind tasks earlier (Dunn, Brown, & Beardsall, 1991), so it might be simply that role-play pretend provides a context in which many such learning discussions take place. Further, in enacting emotional plots children practice event schemas related to internal states: emotions lead to actions which lead to subsequent emotions and actions (Bretherton, 1989; Nelson & Seidman, 1984; Schank & Abelson, 1977). Hence
social pretend play might enable theory of mind because it involves discussion centered around emotional themes, and the practicing of emotion-driven scripts.

Negotiation

The aforementioned possibilities all concern what has been termed “in-frame” pretending: the events and discussion that go on while children are playing at being others. But when children pretend, they sometimes step out of pretense in order to negotiate turns of the plot, object identities, and so on (Giffin, 1984). Indeed, pretend play is often prelaced by several minutes of such negotiations; as children grow older, increasing proportions of play time are given over to out-of-frame negotiation. Another possible way that sociodramatic pretend play might engender social cognitive skills is by forcing children to negotiate their viewpoints and wishes with those of other players (Nelson & Seidman, 1984). Supporting this, siblings engage in more internal state talk during out-of-frame pretense negotiations than during pretense itself (Brown, Donelan-McCall, & Dunn, 1996; Howe et al., 1998) (but see Wolf, Goldfield, Beeghly, Waner, & Cardona, 1985, October, cited in Bretherton, 1989). The foregoing was particularly true of sibling pairs that frequently engaged in pretense, and such pairs also negotiated pretense at a higher level than did less frequent pretenders. Hence the cognitive skills related to understanding minds might be honed by out-of-frame pretending.

Attachment

Children who are securely attached to their parents are likely to engage in pretend play early (Howes & Rodning, 1992; Meins & Russell, 1997), and secure attachment is also associated with better theory of mind performance (Fonagy, 1996; Meins, Fernyhough, Russell, & Clark-Carter, 1997). Secure attachment is also associated with a style of parent–child discourse in which parents frequently discuss feelings and use reason, both of which are associated with theory of mind skills (Ruffman et al., 1999). According to Meins (Meins & Fernyhough, 1997) the links may come about because parents of securely attached children treat their children as mindful beings.

Older peers

Several studies have shown that children with older siblings acquire theory of mind skills relatively early (Jenkins & Astington, 1996; Lewis, Freeman, Kyriakidou, Maridaki-Kassotaki, & Berridge, 1996; Ruffman, Perner, Naito, Parkin, & Clements, 1998) (but see Dunn & Cutting, 1999), and older siblings also lead younger ones to early engagement in sociodramatic play (Dunn, 1988; Dunn & Dale, 1984). For example Youngblade and Dunn (1995) found that the older a first-born child was, the more likely it was that the second-born child would engage in pretend role-play. Even extrafamilial daily peer contacts create such effects: Fein, Moorin, and Enslin (1982) showed that children with more day-care experience engaged in a higher level of pretense than did children without.
Social competence

Social competence might also underlie both theory of mind skills and sociodramatic play. Negotiating with others about pretending requires a certain level of competence. Several studies have shown relationships between social competence and sociodramatic play (Connolly & Doyle, 1984; Howes & Matheson, 1992). For example, Black (1992) has shown that more popular children engage in more pretend play and behave in more socially competent ways during pretense. They were more likely to provide explanations about ongoing play to peers and to include the ideas of peers in their negotiations about play themes and roles. More recently, several researchers have shown relations between sociometric status and theory of mind skills (Dockett & Degotardi, 1997; Dunn & Cutting, 1999).

Personality

Another possible reason for the link between sociodramatic play and theory of mind is an underlying personality dimension, such as interest in people (Lillard, 1998). Two main styles of pretenders, dramatists and patterners, were identified by Wolf (Wolf, Rygh, & Althuler, 1984). Dramatists frequently enacted plots involving other people, whereas the play of patterners was focused on objects and did not involve social, communicative exchanges. These styles emerged at 1 year of age and remained distinct well into the preschool years. What might underlie these different play styles is degree of interest in people, and being interested in people might in itself lead to earlier development of a theory of mind.

Summary

In sum, several studies have noted consistent respectively strong correlations between various forms of social pretend play and the cognitive skills of understanding others' minds. What underlies these correlations is unclear. There are several possible reasons for the link between social pretend play and social cognitive skills, some of which are direct and others of which involve third variables that could reasonably account for both. Future work should explore the direction and possible sources of the relations between pretend play and social cognitive skills in young children.

Conclusion

Pretending is a fascinating development in young children. Pretend play emerges early and consumes a large portion of young children's unstructured time (Haight & Miller, 1993). It involves a remarkable cognitive feat: the child's mind purposefully thwarts reality, making things other than they are, at an age when the child is just learning what
reality is. Pretending apparently involves several important cognitive skills, among them social referencing, plying surface behaviors for underlying intentions, quarantining of a pretend world, understanding that entities or events can refer to other ones, and understanding alternative representations of the world. Although several waves of research have made progress toward understanding these interesting relations, the puzzles loom large. Is early pretense symbolic, and when? How do children pick up on pretense when they are just beginning to understand reality? How does the cognitive system manage to quarantine pretense acts? Why do we see correlations between pretending and theory of mind? These questions call for more research, enabling our deeper understanding of a hallmark ability of the human species.