

CHAPTER ELEVEN

Pretend Play and Cognitive Development

Angeline Lillard, Ashley M. Pinkham, and Eric Smith

Introduction

Pretending is among the most interesting activities of childhood. As many have noted, pretending appears to be an early expression 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 hallmark of our uniqueness among animals. Yet in contrast to other activities in which the symbolic function is central, like language and theory of mind, relatively little scholarly attention is accorded to pretend play. Until the first edition of this volume (see also Goncu, Patt, & Kouba, 2004), it received only one major handbook review, in the *Handbook of Child Development* (Rubin, Fein, & Vandenberg, 1983).

Pretending holds a mysterious place amongst apparently innate activities. Pretending is judged to be innate in part because it is universal and emerges like clockwork at 18–24 months of age (Eibl-Eibesfeldt, 1989). Pretending appears even when it is not modeled and even where parents discourage it, suggesting a biological basis (Carlson, Taylor, & Levin, 1998; Danziger, 2006; Gaskins, 1999; Haight, Wang, Fung, Williams, & Mintz, 1999; Schwartzman, 1978; Taylor & Carlson, 2000). Another criterion for innate behaviors is stereotypy: pretending begins with simple self-directed object substitutions, and evolves through predictable forms to complex role-play.

Yet unlike many other innate behaviors, pretend play does not serve any obvious survival function. Innate behaviors are normally phylogenetic adaptations to the environment (Eibl-Eibesfeldt, 1989). Even human babbling serves apparent developmental purposes. Human babies babble from 3 months to 12 months of age, the world over. Accumulating evidence suggests that the selective value of this behavior is to exercise and tune vocal chords to prepare them for speaking (Levit & Utman, 1992; Locke, 1993).

We are grateful to Patricia Ganea, Rebekah Richert, Lori Skibbe, Young-Joo Song, Peter Smith, David Witherington, and Jessi Witt for comments on an earlier draft of this chapter.

Babbling also serves protoconversations, because parents (at least in many cultures) tend to “talk back” with their babbling infants (Snow, 1988). 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). In contrast, 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 we 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.

History of study

The first wave of scholarly interest in pretend play occurred in the 1920s–1930s (Fein, 1981). Parten (1932, 1933), an early chronicler of the naturalistic appearance of different forms of children’s play, made the most lasting contributions. A second wave of interest 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 from this movement, although Piaget himself used naturalistic observations.

Piaget designated pretending a major hallmark of the sixth stage of the sensorimotor period; along with language and deferred imitation, pretense was considered evidence of representational capacity (Miller, chapter 25, this volume). For Piaget, pretending revealed children’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 considered pretending to be an individual process, suggesting that each child invented and used symbols (Smolucha & Smolucha, 1998), although he noted that “obviously social life plays an essential role in the elaboration of concepts and of the representational schemas” (Piaget, 1945/1962, p. 4). The view that pretending emerges as an asocial activity has dominated the field, although many scholars have recently taken the Vygotskian perspective that pretense arises through social interaction (Goncu, 1993; Haight & Miller, 1993; Howes, Unger, & Matheson, 1992; Lillard & Witherington, 2004; Tomasello & Rakoczy, 2003).

Along with other research inspired by Piaget, during the 1970s pretend play research was lively. Studies emerged detailing the stages of pretending, as well as how children engage in object substitutions and apply agency to pretend entities (Fein, 1975; McCune-Nicholich, 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 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 decantation (Miller, chapter 25, 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 et al., 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 pretending). Another common problem was that post-test experimenters were rarely blind to condition. In the wake of the 1970s surge of activity, pretend play research declined until the 1990s, when it was infused with new vigor as a possible early marker of a theory of mind, as discussed later and in Wellman (chapter 10, this volume).

Developmental course

Many excellent 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 15-month-old Jacquelyn putting a blanket under her head, blinking her eyes, laughing, and saying “Nono” (Obs. 64A). Jacquelyn’s activities suggested she was pretending to go to sleep, the blanket symbolizing her pillow. A dramatic increase in symbolic acts occurs between 15 and 18 months (Rubin et al., 1983), with pretending in full swing by approximately 24 months (Bates et al., 1979; Bretherton, 1984; Dunn & Wooding, 1977; Fein, 1981; Nicolich, 1977; Tamis-LeMonda & Bornstein, 1991). Two-year-olds spend 5–20% of their playtime engaged in pretense activities (Dunn & Dale, 1984; Dunn & Wooding, 1977; Haight & Miller, 1993; Miller & Garvey, 1984) and can interpret and respond to others’ pretense acts in some circumstances (Harris & Kavanaugh, 1993; Walker-Andrews & Kahana-Kalman, 1999).

Sociodramatic pretending with peers emerges 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 & Plaetzer, 1985; Dunn & Dale, 1984; Fiese, 1990; Haight & Miller, 1993; Howes et al., 1992; Kavanaugh, Whittington, & Cerbone, 1983; Miller & Garvey, 1984; O’Connell & Bretherton, 1984), or the father (Farver & Wimbarti, 1995). Although Piaget claimed that pretending is replaced by games with rules when children enter the concrete operational stage, recent evidence suggests that the average age at which people claim to have stopped pretending is 12, and a fair proportion of adults say they have not stopped at all (Smith, Lillard, & Sorensen, 2009). Some theorists maintain that all counterfactual and hypothetical thinking (Hofstaeder, 1979), as well as engaging with art, can be thought of as a form of pretense (Walton, 1990).

As mentioned earlier, pretend play does appear to be universal; the developmental patterns just mentioned have been observed in a variety of communities around the world. Haight et al. (1999) have proposed that what is universal is not merely the fact and early appearance of pretense, but extends even to how pretense is conducted. For example, they speculate that all 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 include its topics and the frequency of different forms. These differences appear to stem from the values and practices of the adult community and ecological features (e.g., availability of toys). For example, Haight et al. (1999) found that American preschoolers enacted more fantasy themes than did Taiwanese children; by contrast, 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 European-Americans emphasized danger and fantasy themes. Gosso, Morais, and Otta (2007) obtained similar findings in Brazil, where high socioeconomic-status (SES) children's play included some fantasy (e.g., witches, mermaids, *Pokemon*), and that of reservation-dwelling American Indians and other low-SES children lacked fantasy themes altogether.

Other cultural differences concern the amount and ages of particular forms of pretense. In one study, American toddlers engaged in more pretend play than did Mexican children (Farver & Howes, 1993). American and Turkish children engaged in more pretend play than did Guatemalan and Indian children (Goncu, Tuermer, Jain, & Johnson, 1999). 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 that of their American counterparts, in a manner that directly corresponded to the level of play of their mothers (Tamis-LeMonda et al., 1992). As compared with French 20-month-olds, American 20-month-olds tended to engage in more symbolic pretend play, and the amount they engaged in was correlated with how much their mothers (all of European origin) tended to elicit that play (Suizzo & Bornstein, 2006). Gosso et al. (2007) found more symbolic transformations among high-SES children as contrasted with several other cultural groups within Brazil.

Importantly, in all these communities some pretending did occur, and the sequence and level of its occurrence was consistent with the review studies (of mainly Euro-American and European children) mentioned in the prior section. Changes in the frequency of children's pretense at different ages vary with parental attitudes and engagement. Where pretense was more frequent, adults believed it was important to development and engaged in it themselves with children. Where pretense was less frequent, parental attitudes ranged from mildly accepting to discouraging, and parents did not engage in it with children. Gaskins (1999) noted that when Mayan parents stopped children's pretense it was often because children were inappropriately using household objects (e.g., placing fruit on a wheelbarrow and turning its wheel as if to grind corn). However, Taylor and Carlson (2000) note that for some parents religious beliefs lead to discouraging of pretend because it is "false"; Danziger (2006) has reported a similar reason for discouraging pretending among the Mopan Maya, although the admonition has abated over the decades she has studied them.

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, adults pretend for very young children. Haight and Miller (1993) reported that all of the mothers they studied pretended in front of their 12-month-olds; Kavanaugh et al. (1983) noted 75 distinct pretense utterances by eight mothers playing with 12- to 15-month-olds during 40-minute sessions; and Tamis-LeMonda and Bornstein (1991) found that 36% of mothers pretended with their 13-month-olds during a 15-minute observation (see also Crawley & Sherrod, 1984). How do young children understand acts of pretense?

Knowledge about what is real could be an important cue. A child might understand that a person talking into a banana must be pretending it is a telephone since people do not typically talk into bananas otherwise. By age 4, children also seem to understand that deviation from what is real is an important marker of pretense. When asked to judge whether people in videotaped clips were pretending to eat or really eating, 4- and 5-year-olds frequently justified their judgments with reference to whether food was actually present (Ma & Lillard, 2009; Richert & Lillard, 2004). But how do children determine whether an act is pretend or real when this obvious external cue is not present?

In addition, very young children might not even know when an act is real, since they are relatively ignorant; when someone is pretending about something novel to an infant, the ability to interpret the act as pretense may be especially puzzling. Babies witness new events every day. Why shouldn't talking into bananas be yet another new, real event? One might expect that young children immediately interpret pretend events as symbols of known real events, yet their symbolizing abilities do not seem sufficient to do so 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, 12-month-olds chose not to venture across an illusory drop-off (the visual cliff) when their mother expressed fear but did when she seemed happy and encouraging (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 (e.g., "goofy"). If the child fails to adopt the adult's stance towards the pretend event, the child could become confused and embed the pretend relations in her representation of the real world (discussed later). It is quite plausible that the ability to reference adults for appropriate attitudes is a key reason that young children are not generally confused by pretense acts.

Indeed, the times when children do get confused by pretense may be ones in which “silly” signals are not given.

Recent research has supported the possibility that infants engage in social referencing when observing adults pretending. When Lillard and Witherington (2004) asked mothers to have a real snack and a pretend snack with their 18-month-olds, two differences were observed in mothers’ behavior that are relevant to social referencing. First, mothers smiled more frequently during pretense episodes relative to real ones; these smiles were frequently placed just after a pretend action and perhaps signaled a “goofy” interpretation. Second, mothers looked more often at their infants during pretense, and each look was of longer duration. Importantly, when mothers looked at their children during a pretend action and smiled, children were more apt to also smile and engage in pretend behaviors themselves.

Nishida and Lillard (2007) conducted a more refined analysis of this data pertinent to the social referencing hypothesis of pretense understanding. Data from 32 mother–child pairs were subjected to sequential analysis to determine if children’s smiles and snack behaviors (suggesting a correct pretense interpretation) were significantly more likely to occur after a “social referencing sequence” (i.e., mother looks at child, acts, then smiles as if to comment on the action) during pretense than real snacking episodes. Results were positive. Alternative interpretations like imitation and affective mirroring were not consistent with the data. Parents appear to provide cues that may help 18-month-olds interpret pretense as pretense.

A further study examined maternal pretense behavior with younger (15-month-old) and older (24-month-old) children to investigate if the signs of pretense change with age, and also to examine other possible cues like voice and exaggerated movements (Lillard et al., 2007). Parents did not appear to change signs across this age span, but they did exaggerate gestures (like pouring at a much wider angle) and vary their pitch more while pretending. A second experiment moved beyond the snacking paradigm to examine pretend grooming. Results were consistent, with mothers tending to look at their children and smile more during pretense, particularly just before engaging in a pretend action. Children appeared to interpret this sequence of behavior as a signal of pretense. In sum, results from studies of mother–toddler pretending are consistent with the idea that adult cues assist early pretense interpretation.

Reading Intentions

In interpreting pretense one must also read through the pretender’s actions to his or her intentions. For example, if a pretender is flying a pen around through the air and pretending the pen 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.

By the second year, infants are able to attribute intentions or goals to actors even when the intended outcomes are not achieved or directly observable. For example, Carpenter, Akhtar, & Tomasello (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 (1995) goes a step further, requiring that children infer an actor’s intention despite only observing unsuccessful attempts at achieving that goal. For example, 18-month-olds observed someone trying to pull apart the ends of a barbell, but not succeeding. When later given the barbell, children executed the intended acts rather than the behaviors they had actually observed. Recent research suggests infants as young as 10 months of age can interpret intentions (Brandone & Wellman, 2009).

What is being pretended must sometimes be read from incomplete acts or scenarios. Children can read pretense intention in such contexts by at least 2 years of age. For example, when shown a hammering motion, incomplete in that it lacked a hammer and an object being hit, many 18-month olds correctly identified the missing object as a hammer and by implication that the actor was pretending to hammer (Tomasello et al., 1999). In another study, after watching an experimenter pour pretend tea on one of two pigs, young 2-year-olds (but not old 1-year-olds) correctly dried the one who had been “made wet,” suggesting they correctly understood what the experimenter “intended” by her pretense actions, at least when aided by language (Harris & Kavanaugh, 1993).

Ma and Lillard (2006) examined children’s inference of pretense intentions when given behavioral cues but not pretense content (i.e., “reality cues”). Toddlers watched videotapes of two actors side-by-side. The first actor pretended to eat from a covered bowl and then the other actor really ate from a different covered bowl (or vice versa). In both cases, the presence or absence of food was concealed and both actors said, “Mmm, [food item]” after eating. However, the behavioral cues in the two events differed. For example, the pretend eater made more eye contact and burst into a large smile after completing the eating actions. After viewing the videos, children were presented with two covered bowls that matched the ones on the television screen and asked, “Where’s the [food item]? Can you get the [food item]?” Surprisingly, not until 2.5 years of age did children reliably choose the correct bowl, indicating that they understood that one person was pretending and the other was really eating. Interestingly, children’s behavior (e.g., lip smacking) suggested that younger children knew which person was really eating versus pretend eating although their explicit choices did not reflect such an understanding.

Further experiments (Ma & Lillard, 2009) examined whether children’s errors on the explicit choice task were due to a problem inferring that only real eaters would have real content in their bowls; perhaps children believed pretend eaters had real food in their bowls, but simply were not eating it. To test this, in one experiment before the bowls were covered, the child saw that one bowl was empty and the other contained food. Performance in this condition improved slightly for 24-month-olds, but was not impressive overall (2.7 correct of 4 trials, with chance being 2 of 4). A second experiment examined whether children would do better were they not being asked to point to an *empty* bowl; perhaps the draw to point to *something* was masking competence. For this, the pretend bowl contained some toys and for the test question children were asked to

state which bowl had toys; performance was again only slightly above chance for 2-year-olds (2.6 correct of 4 trials). In a third experiment, children were asked to point to which bowl was empty. This was difficult: even 36-month-olds were at chance. Interestingly, in all these experiments, children performed much better on the first trial than the subsequent three, suggesting fragile understandings that were easily overwhelmed. In addition, in each experiment implicit behaviors like lip smacking suggested understanding at some level that only the real eater had food across all trials. In sum, although children appear to understand failed intentions in real domains by the middle of the second year, their ability to read pretend intentions and reason from them to real-world content is quite limited even at age 2.

Onishi, Baillargeon, and Leslie (2007) also examined young children's understanding of pretend action sequences, and found apparent implicit understanding much earlier. In one experiment, 15-month-olds watched a person pretend to pour into one of two cups, and then pretend to drink from the same (expected) or other (unexpected) cup. Infants looked longer after the unexpected event, suggesting they might understand pretense. An alternative explanation is that infants simply glossed both events as pouring and drinking without even noticing the lack of liquid, and looked longer because a different object was being acted on. Further research is needed to shed more light on this issue.

Quarantine

A third cognitive skill involved in interpreting pretense is to quarantine the pretend situation from the real situation, to prevent representational abuse. Several theorists have noted this separation. For example, Bateson (1955/1972) pointed out that pretending is a special frame that organizes the activities within it, a concept developed later by Goffman (1974); Ryle (1949) suggested that 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."

Unlike social referencing and reading intentions, which young children engage in for both real and pretend contexts, quarantining does not appear in non-pretense domains until older ages. For example, hypothetical reasoning requires quarantining reality from the hypothesized world. Young children's ability to reason hypothetically is relatively poor, but, interestingly, it improves when the hypothetical premises are placed in a fantasy context (Dias & Harris, 1988, 1990; Hawkins, Pea, Glick, & Scribner, 1984; Kuczaj, 1981; Scott, Baron-Cohen, & Leslie, 1999; but see Richert, Shager, Hoffman, & Taylor, 2009). Recent research shows that pretending is one of several ways to get children to step back from real-world circumstances to engage in hypothetical thinking (Harris, 2000).

Pretense requires reasoning about a hypothetical world. If children did not separate pretense worlds from the real one, they would become confused; thus, pretend acts must be marked as unserious and not reflecting the real world. As Leslie (1987) pointed out, the developing cognitive system's ability to do this is amazing. One would expect that a cognitive system that misrepresents reality would be suboptimal and that natural selection

would instead favor a cognitive system that only constructs models of how the world actually is. How do children purposefully construct, reason about, and act upon a misrepresentation of the world?

One pertinent issue is the extent to which young children actually keep pretend and real systems separate. Logic suggests that children observing pretense must usually quarantine pretense events from real ones (Leslie, 1987). If young children instead interpreted pretense and real events as being of the same kind, then having viewed someone pretending a banana is a telephone, children might no longer have a distinct representation of bananas as bananas and might later attempt to answer the banana when the phone rings. Although we know of no systematic studies, the infrequency of reported errors of this kind suggests rarity. Some studies suggest that more frequent pretenders are even better at discerning reality from fantasy (Sharon & Woolley, 2004; but see Woolley, Boerger, & Markman, 2004). At times, however, young children do appear to mistake pretense for real, thereby failing to maintain the real–pretense boundary (Scarlett & Wolf, 1979). Three types of situations in which confusion has been noted are discussed next. Some of these involve simply asking children if some event is real, raising important methodological issues. First, researchers have tended to opt for a binary classification although children will often take a “maybe” option if offered. For example, when given a “not sure” option, only 35% of 4-year-olds claimed that the Easter Bunny was real, whereas 35% were not sure and 29% claimed he was not (Sharon & Woolley, 2004); this contrasts with the 74% of parents who claimed their children believed in the Easter Bunny (Rosengren, Kalish, Hickling, & Gelman, 1994). Second, children are more likely to use the word *real* to refer to the authenticity of an object (i.e., not a fake) than its existence (Bunce & Harris, 2008). These studies suggest that some standard techniques to determine whether children quarantine pretend from real are problematic. Bearing this in mind, consider three cases in which we see a breakdown of the real–pretense boundary.

Describing events or entities as pretense or real

When asked to describe pictures, verbally described events, or television events, children sometimes appear confused about the reality status of pretense versus real events. Errors particularly occur under three circumstances. First, children sometimes claim the pretense entities are real when those entities are marginal ones about which adults intentionally deceive children (e.g., Santa Claus or the Tooth Fairy; Clark, 1995). Indeed, 76% of 4-year-olds tested by Sharon and Woolley (2004) made this claim. This is not really surprising given the orchestrated cultural hoax involved, and given that children can easily be made to believe things. In one fascinating study, researchers told children about the Candy Witch, who replaces children’s candy with a toy on Halloween night. After just two presentations, 66% of children claimed the Candy Witch was real; children who were also visited by the witch at home, 4-year-olds (in contrast to 3-year-olds), and children who believed in other fantastical figures were all more likely to believe in the Candy Witch (Woolley et al., 2004). In fact, even 8-year-olds who had been introduced to the Candy Witch concept a year earlier often professed belief (Boerger, Tullos, & Woolley, in press).

Children also err when asked to classify entities that “walk the boundary” even for adults. For example, many otherwise sane-seeming adults believe witches are real; Luhman (1989) offers a fascinating account of witchcraft cults in modern-day London. Although researchers might comfortably assert that witches should be classified as pretense (Morison & Gardner, 1978), children’s reduced level of certainty may not reflect a specifically developmental cognitive deficit.

A third circumstance in which children may err is when they have little or no real-world experience with the entity (Samuels & Taylor, 1994). Preschoolers who heard a story about a train with feelings and a family were significantly more likely to endorse the idea that trains really had such things than were preschoolers who heard about real trains (Ganea, Richert, Bean, & DeLoache, 2004). Likewise, children may be confused about the reality status of television events (Downs, 1990), although this may also be due to not understanding the concept of acting.

Children generally maintain boundaries not just between pretend and real, but also between different pretense worlds. For example, 5-year-olds were significantly more likely to claim that Batman would interact with Robin than with Sponge Bob (Skolnick & Bloom, 2006; see also Skolnick, Weisberg, & Bloom, in press).

In sum, some purported cases of pretense–reality boundary breakdown involve classes of entities about which children lack knowledge, 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 with her hand is flying a pretend or a real airplane.

Scary pretense episodes

Children’s behavioral responses to scary pretend situations sometimes suggest that they think pretense is real. They occasionally appear truly frightened during scary pretense play, such as pretending to be monsters, and have even asked to cease playing (Garvey & Berndt, 1975; Scarlett & Wolf, 1979). Consistent with these observations, Harris and colleagues found that preschoolers avoided a box after having imagined it contained a scary creature (Harris, Brown, Marriott, Whittall, & Harmer, 1991; Johnson & Harris, 1994). They suggested that preschoolers sometimes believe that what they imagine can become true and entities can cross the boundary from pretend into real. In fact, when Kavanaugh and Harris put pairs of children alone in the room with the box in which they had imagined a monster, the children discussed, with apparent seriousness, the possible existence of the monster (P. L. Harris, personal communication, September 2000).

Children’s avoidance of scary pretense does not mean they are *generally* susceptible to pretense–reality breakdown; indeed, Woolley and Phelps (1994) reported that preschoolers were also reluctant to approach a box in which they had imagined a non-scary object. Scary pretense elicits emotions, and emotions are usually reliable cues to reality (Damasio, 1994; Zajonc, 1980). But because physiological reactions to real and imagined scary events are similar (Lang, 1984), children might interpret the physiological signs of fear as a cue to reality (see Harris, 2000). Further, children are notoriously poor at monitoring sources (Foley, Harris, & Hermann, 1994; Foley & Ratner, 1998) and may fail to note

that the source of fear is purely their own imagination. Interestingly, there is a high degree of individual variability in the tendency to think what one has imagined has become real (Bourchier & Davis, 2000; Johnson & Harris, 1994).

In short, when it comes to pretense involving frightening entities, pretend–real boundary problems certainly do exist. Yet even adults are not immune to such problems: emotions from pretend events, such as dreams or fantasies, frequently color our real-world behavior and possibly even our representations. Although such cases are very interesting, they may not be relevant to more everyday pretense.

Non-scary pretense episodes

The third circumstance concerns whether children who are engaged in everyday, non-frightening pretense behave as though their pretense is real. Research suggests that even 5-year-olds might have this problem, seeming disoriented when an adult 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 age 4, children are not typically disrupted by such interventions (Golomb & Kuersten, 1996). Moreover, Taylor (1999) reported that 4-year-olds sometimes expressed concern that the experimenter was taking their imaginary companions too seriously; one child reminded her, “It’s only pretend, you know.” Even 3-year-olds appear very clear in their understanding of the differences between pretend and real entities. When told about one boy who had a cookie and another who was just pretending to have a cookie, 3-year-olds were quite accurate about which boy could eat the cookie, touch the cookie, see the cookie, and so on (Wellman & Estes, 1986). In a review of this area, Woolley (1997) concluded that children are not fundamentally different from adults in their separation of real and pretense.

It is less clear whether younger children keep everyday pretense and real episodes separate. Harris and Kavanaugh’s (1993) results suggest that by age 2, children can usually follow pretense episodes even when substitute objects are involved. In another study, 2-year-olds protested more when an experimenter violated a pretense identity (e.g., eating what had been a pretend knife) than when the experimenter behaved in accordance with the pretense assignments (e.g., eating a pretend carrot; Rakoczy, 2008a). However, in examining mother–child pretend play at ages 15 through 30 months, DeLoache and Plautzer (1985) 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. DeLoache and Plautzer suggested that the mother’s pretense was too elaborate for the child’s current level. Closer analysis of the types of pretense adults engage in with young children, the length of those episodes, and the degree to which the mothers signal pretense may provide further clues.

The appearance–reality distinction

A special case of quarantine involves the appearance–reality distinction (Flavell, Green, & Flavell, 1986), in which one understands that an object can look like one thing but

really be something else. Flavell and colleagues hypothesized that children might have a precocious ability to discriminate reality from representation in the realm of pretense (Flavell, Flavell, & Green, 1987). To test this, the first experimenter pretended to eat an apple-candle and the second experimenter asked, "Is she pretending that thing is a candle or pretending it's an apple?" and, "Right now, does that thing look like an apple or look like a candle?" Children performed significantly better on the pretense question than on the appearance question, suggesting that pretense is an area of early competence for understanding mental representation.

However, an alternative explanation is that children might have interpreted pretense as false action rather than false representation (Lillard, 1993). For example, the experimenter was engaging in "pretend-to-eat-an-apple" actions, not actions that would really be directed at candles. When asked if she was pretending it was an apple or a candle, children could answer correctly simply by reading her false behavior, a suggestion which has been empirically supported (Sodian & Huelsken, 1999; Sodian, Huelsken, Ebner, & Thoermer, 1998). Similarly, Abelev and Markman (2006) argued children perform better on the pretense version of the appearance–reality task because they do not need to contrast an object's essential nature with its superficial nature; instead, they must only differentiate between what an object really is and its temporary function. Children's quarantining of pretense and real seems dependent on the actions that go along with pretending (Harris & Kavanaugh, 1993; Lillard, 2001a; Tomasello et al., 1999), which has important implications for children's understanding of symbols in pretend play, as discussed in the next section.

Pretense Play as Symbolic

In interpreting pretense, children must keep pretense separate from real as well as understand what real objects and events the pretense objects and events symbolize. When children pretend or watch others pretend, to what extent do they perceive the pretense as symbolizing real objects and events?

Language has often been considered a parallel development to pretense, as both appear to involve the use and comprehension of symbols (Bates et al., 1979; Piaget, 1945/1962; Werner & Kaplan, 1963). For children younger than 18 months (i.e., before the typical vocabulary spurt), pretense and language production are significantly correlated (Bates et al., 1979; Nicolich, 1977; Tamis-LeMonda et al., 1992). Moreover, children with productive language delays are less successful at engaging in symbolic play than are age-matched children with normally developing language (Beeghly, 1998). Although the notion that early word or pretense productions are symbolic is not uncontroversial (Huttenlocher & Higgins, 1978; Piaget, 1945/1962; Tomasello et al., 1999), the observed correlations suggest some common underlying function.

In addition to being parallel developments, children's pretense and language production may be mutually influential. During joint parent–child symbolic play, parents often provide explicit narratives related to children's pretense behaviors and ask children to elaborate on those narratives (Kavanaugh & Engel, 1998). Such conversation may help

highlight the symbolic nature of pretense. In one recent study, children who received explicit training about the phrase “pretend that” showed greater improvement in identifying what was symbolized by pretense acts than untrained controls (Rakoczy, Tomasello, & Striano, 2006).

Pretense comprehension is often measured by imitation. For instance, researchers demonstrate pretense acts and note if children imitate those acts (Bates, Bretherton, Snyder, Shore, & Volterra, 1980; Fenson & Ramsay, 1981; Nielsen & Dissanayake, 2004; Ungerer, Zelazo, Kearsley, & O’Leary, 1981). Such imitation measures suggest pretense comprehension as early as 13 months (Bates et al., 1980), the same approximate age of onset as pretense and language production. However, assuming that such imitation indicates symbolic understanding is clearly problematic, as children’s behaviors might involve imitation without comprehension of what the actions and objects symbolize. Not until 2 years of age do children imitate observed behaviors in a way that shows sensitivity to the underlying intention (e.g., trying but failing to really write with a pen versus pretending to write with a pen; Rakoczy, Tomasello, & Striano, 2004; Rakoczy & Tomasello, 2006).

Harris and Kavanaugh (1993) traded this imitation problem for a linguistic one. Children were shown a yellow block and a teddy and told that the yellow block was Teddy’s sandwich. When asked to show what Teddy does with his sandwich, 18-month-olds correctly had Teddy display eating behaviors toward the block on 50% of trials; 28-month-olds did so on 75% of trials. Although this eliminated the possibility that children were merely imitating an action, they may have responded based upon language rather than an underlying understanding of the symbol. Indeed, research by DeLoache (chapter 12, this volume) suggests that symbolic understanding emerges between 2.5 and 3 years of age, not earlier.

Children’s understanding of what pretense symbolizes appears to develop gradually and involves much scaffolding by more competent play partners. This scaffolding occurs in two main ways. First, as may be the case in the aforementioned Harris and Kavanaugh experiment, language can scaffold pretense comprehension. Kavanaugh et al. (1983) found that parents of 12- to 21-month-olds initiated nearly all pretense episodes by verbally attributing pretend identities to objects, thereby facilitating the symbolic mapping task (see also Rakoczy et al., 2006).

Second, play partners’ pretense gestures may also facilitate symbolic mapping. Cognition is very much influenced by action (Campos et al., 2000; Glenberg, Gutierrez, Levin, Japuntich, & Kaschak, 2004), an insight implicit in Montessori’s notion that the hand leads the mind (Lillard, 2005) and in Piaget’s idea – credited to Montessori (Piaget, 1970, pp. 147–8) – of action as the source of knowledge (Flavell, 1963). Perhaps gesture leads to the appreciation of symbols in pretense; several lines of research support this suggestion. For example, Tomasello et al. (1999) showed that young children’s understanding of pretense may be guided by their ability to read gestures rather than their symbolic understanding. Such results are particularly interesting in light of Goldin-Meadow (2003) and colleagues’ work showing that children’s gestures may reveal new cognitive advances before they are revealed in other ways.

Even once children have a rudimentary symbolic understanding of pretense, their ability to manipulate and reason with pretense symbols remains fragile. In a recent series

of experiments, Ma and Lillard (2009) pretended with three different objects; two were acted on in the same manner, suggesting they symbolized a single object, while the other was used in a different manner. When asked which two “go together,” 3-year-olds sorted the objects at random although they appeared to understand the pretense gestures (e.g., they spontaneously described them). However, if one of the three objects was a miniature (e.g., a tiny toy telephone) or the symbolic demands were minimized (by using plain blocks as substitute objects), 3-year-olds sorted correctly.

Findings such as these suggest that pretense comprehension might not initially involve a symbolic capacity. Children’s ability to comprehend pretense symbols lags considerably behind pretense production as well as language comprehension and production; this should not be the case if a single ability to see one object as signifying another underlies all four capacities. In addition, an opposing acquisition pattern is seen in language and pretense. While comprehension precedes production in language (Benedict, 1979), the opposite is true for pretense. Furthermore, children’s comprehension also varies as a function of the iconicity of the pretense behavior: the more similar in form and function an object or action is to its referent, the more easily children appear to comprehend the pretense (Bigham & Bouchier-Sutton, 2007; Mizuguchi & Sugai, 2002); the same is not true for language (Clark, 2003).

Pretend Play and Social Cognition

Recent research on children’s theory of mind (Wellman, chapter 10, this volume) suggests a relationship between pretend play and mental-state understanding, such that frequent or high-level pretenders also have advanced understandings of others’ mental states (Astington & Jenkins, 1995; Connolly & Doyle, 1984; Dunn & Cutting, 1999; Gleason, 2004; Hughes & Dunn, 1997; Lalonde & Chandler, 1995; Lillard, 2001b; Schwebel, Rosen, & Singer, 1999; Taylor & Carlson, 1997; Youngblade & Dunn, 1995). Although the direction of effects for this relation is uncertain, at least one study supports the possibility that pretense drives social understanding. Youngblade and Dunn (1995) found that children’s level of pretense at 33 months was positively related to their mental-state understanding at 40 months. It is also possible that the reverse relation occurs, such that advanced social skills enable pretense, or that a third underlying variable drives both pretend play and social cognition. This section explores various means by which the two domains might be related.

Meta-representation

Pretend play might drive social understanding via meta-representation, such that pretending would provide early insight into mental representations (Wellman, chapter 10, this volume). While children are engaged in pretend play, they might reflect on the fact that they are entertaining mental ideas, and this understanding could then be applied outside of pretense (Taylor & Carlson, 1997; Taylor, Carlson, Maring, Gerow, & Charley,

2004). Some studies support this argument, whereas others do not (see review in Lillard, 2001a). One problem with the early-insight-in-pretense account is that, were it true, all pretend play should be associated with precocious theory-of-mind task performance. However, only social forms of pretending (including imaginary companions; Taylor, 1999) are consistently related with theory of mind, making a link via meta-representation unlikely. Gomez (2008) also notes that there is increasing evidence for some meta-representational capacity in primates, yet little evidence that they engage in anything like pretend play. Although this could be a result of equifinality, or arriving at the same end via a different path (Gottlieb, Wahlsten, & Lickliter, 1998), it seems unlikely.

Decentration

Pretending might also assist social understanding via decentration, or moving away from a single viewpoint to take other perspectives into account (Piaget, 1945/1962). Pretend play seems to require decentration because a child must decenter from one view of an object as what it really is to entertain what else that object could be. This same skill is involved in perspective-taking (Wellman, chapter 10, this volume), which may be positively correlated with pretend play (Rubin et al., 1983). As with meta-representation, however, this view is weakened by the fact that social but not solitary pretend play is linked to social cognition.

Role-taking

Role-taking is another skill that might promote social cognition. Children may become, emotionally and mentally, like the characters that they impersonate (Harris, 2000). Practice at taking others' perspectives in non-pretense contexts is associated with social understanding. For example, children whose parents discipline by asking them to imagine how it must feel to be someone else are precocious at understanding beliefs (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. Around the turn of the last century, Stanislavsky (1922/1984) contributed the insight that one could act by "becoming," in a psychological sense, the characters that one played. Whether children naturally act in a Stanislavskian manner during sociodramatic play is a pertinent topic of inquiry.

Social pretend play themes

Social pretense might also lead to understanding minds via pretend themes, which are frequently emotional in nature and include discussion of mental states (Fein, 1989; Haight & Miller, 1993). Several theorists have even argued that a fundamental drive to pretend is the need to work out emotional issues (Bretherton, 1989; Fein, 1989). Indeed,

children use more internal state words while pretending than not (Hughes & Dunn, 1997), and children who pretend frequently use more internal state words than children who pretend less (Howe, Petrakos, & Rinaldi, 1998). Children who engage in more discussion about emotions pass theory-of-mind tasks earlier (Dunn, Brown, & Beardsall, 1991) and children practice event schemas related to internal states while enacting emotional plots (Bretherton, 1989; Nelson & Seidman, 1984; Schank & Abelson, 1977), so it might be simply that role-play pretense provides a context for such learning.

Negotiation

The aforementioned possibilities all concern “in-frame” pretending, or the events and discussions that occur while children play at being others. But when children pretend, they sometimes step out of their pretense to negotiate turns of the plot, object entities, and so forth (Giffin, 1984; Howe, Petrakos, Rinaldi, & LeFebvre, 2005). Indeed, pretend play is often prefaced by several minutes of such negotiations; as children grow older, an increasing proportion of playtime is devoted to out-of-frame negotiation. Sociodramatic pretend play may engender social-cognitive skills by forcing children to negotiate their viewpoints and wishes with those of other players (Cutting & Dunn, 2006; Nelson & Seidman, 1984; Rakoczy, 2008b). Supporting this, children 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; Howe et al., 2005; cf. Wolf et al., 1985, as cited in Bretherton, 1989), and sibling pairs who frequently engage in pretense negotiate their play at higher levels as compared to less frequent pretenders (Howe et al., 1998; Howe, Rinaldi, Jennings, & Petrakos, 2002). Moreover, sociodramatic pretend play is linked to children’s social competence (Lindsay & Mize, 2000), with well-liked children engaging in more pretense negotiations with peers than disliked children (Black, 1992). Hence, cognitive skills related to understanding minds might be required for what occurs around the pretend frame.

Attachment

Secure attachment is associated with earlier pretend play (Howes & Rodning, 1992; Meins & Russell, 1997) and better theory-of-mind performance (Fonagy, 1996; Meins, Fernyhough, Russell, & Clark-Carter, 1997). Secure attachment is also associated with parent–child discourse in which parents frequently discuss feelings and use reason, both of which are positively associated with theory-of-mind skills (Ruffman et al., 1999).

Older peers

Research has shown that children with older siblings acquire theory-of-mind skills relatively early (e.g., Jenkins & Astington, 1996; Lewis, Freeman, Kyriakidou, Maridaki-Kassotaki, & Berridge, 1996; McAlister & Peterson, 2006; Ruffman, Perner, Naito,

Parkin, & Clements, 1998; but see Cutting & Dunn, 1999), and older siblings also lead younger ones to early engagement in sociodramatic play (e.g., Dunn, 1988; Dunn & Dale, 1984). For example, the age of a first-born child is positively related to the likelihood that the second-born child engages in pretend role-play (Youngblade & Dunn, 1995), and second-borns are more likely to extend their play partner's ideas during dyadic pretend play than first-borns or only children (Howe et al., 2005). Even extrafamilial daily peer contacts can produce such effects (Fein, Moorin, & Enslein, 1982; Kowalski, Wyver, Masselos, & de Lacey, 2005). In addition, children who regularly engaged in pretend play with older peers showed higher levels of empathy and emotional regulation than children who did not (Galyer & Evans, 2001).

Social competence

Social competence might also underlie both theory-of-mind skills and sociodramatic play. Negotiating pretense with others requires a certain level of competence. Several studies reported relationships between social competence and sociodramatic play (Connolly & Doyle, 1984; Howes & Matheson, 1992). For example, Black (1992) showed that more-popular children engaged in more pretend play and behaved in more socially competent ways during pretense. They were also more likely to provide explanations about ongoing play and to include peers' ideas in their pretense negotiations. Researchers have also 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. Wolf, Rygh, and Altshuler (1984) identified two main types of pretenders: dramatists and patterners. Dramatists frequently enacted plots involving other people, whereas patterners' play was more object-dependent and tended not to involve social or communicative exchanges. Children's pretense styles emerged at 1 year of age and remained distinct well into the preschool years. It is possible that children's interest in people influences their play styles, and this interest might also lead to earlier theory-of-mind development (Lillard, 1998). Although "hard to manage" preschoolers, such as children exhibiting antisocial behavior and personality traits, engaged in comparable amounts of sociodramatic play to that of their peers, the content of their pretense episodes was often characterized by violent fantasizing, and they exhibited relatively poor theory-of-mind skills (Dunn & Hughes, 2001; but see Nelson, Hart, & Evans, 2008).

Summary

Researchers have noted correlations between various forms of social pretend play and children's understanding of others' minds. There are several possible reasons for the link

between social pretend play and social-cognitive skills, some of which are directional and others of which involve third variables that could reasonably account for both. Future work should further explore the direction and possible sources of the relations between young children's pretend play and social-cognitive skills.

Pretense and Cognitive Neuroscience

By 2–3 years of age, children can differentiate whether an actor's intention was to really perform an action or to pretend to do so (Rakoczy et al., 2004; Rakoczy & Tomasello, 2006); however, relatively little is known about the neural correlates of understanding such pretense behaviors, and the available evidence is limited to research with adults. Schubotz and von Cramon (in press) argue that the interpretation of real behaviors and the interpretation of pretend behaviors require similar neural processes. Indeed, recent functional MRI research demonstrates that the neural regions implicated in making mental state judgments (German, Niehaus, Roarty, Giesbrecht, & Miller, 2004) and goal inferences (Schubotz & von Cramon, in press) are similarly activated when observing real and pretend actions.

There are, however, also some differences in neural activity across the two types of actions. For example, when participants were asked to judge the possibility that scenarios involving real people could be real, neural regions associated with episodic memory were activated; in contrast, when the scenarios involved fictional characters, like Cinderella, regions associated with semantic memory were activated (Abraham, von Cramon, & Schubotz, 2008). Other research suggests that the performance of real versus pantomimed actions involves overlapping but not identical neural mechanisms (Imazu, Sugio, Tanaka, & Inui, 2007; Króliczak, Cavina-Pratesi, Goodman, & Culham, 2007; Westwood, Chapman, & Roy, 2000). Furthermore, a growing literature shows that when people imagine themselves or another person performing an action or experiencing a psychological state, the neural activation occurs in the same areas of the brain as when one actually performs that action or experiences that state (see discussion in Decety & Grèzes, 2006). This suggests interesting possibilities for how children interpret and learn via pretense.

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 purposely 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, including social referencing, interpretation of underlying intentions, quarantining of a pretend world, symbolic understanding, and understanding alternative representations of the world. Although researchers have made progress towards understanding these interesting relations, many puzzles remain. Is early pretense symbolic, and when? How does the cognitive

system manage to quarantine pretense acts? Why do we see correlations between pretending and theory of mind? These questions call out for more research, enabling deeper understanding of this hallmark ability of the human species.

References

- Abelev, M., & Markman, E. (2006). Young children's understanding of multiple object identity: Appearance, pretense and function. *Developmental Science, 9*, 590–596.
- Abraham, A., von Cramon, D. Y., & Schubotz, R. I. (2008). Meeting George Bush versus meeting Cinderella: The neural response when telling apart what is real from what is fictional in the context of our reality. *Journal of Cognitive Neuroscience, 20*(6), 965–976.
- Astington, J. W., & Jenkins, J. M. (1995). Theory of mind development and social understanding. *Cognition and Emotion, 9*, 151–165.
- Bates, E., Benigni, L., Bretherton, I., Camaioni, L., & Volterra, V. (1979). Cognition and communication from nine to thirteen months: Correlational findings. In E. Bates (Ed.), *The emergence of symbols: Cognition and communication in infancy*. New York: Academic Press.
- Bates, E., Bretherton, I., Snyder, L., Shore, C., & Volterra, V. (1980). Vocal and gestural symbols at 13 months. *Merrill-Palmer Quarterly, 26*, 407–423.
- Bateson, G. A. (1955/1972). A theory of play and fantasy. In G. A. Bateson (Ed.), *Steps to an ecology of mind* (pp. 39–51). New York: Chandler. (Reprinted from American Psychiatric Association Research Reports, 1955, II.)
- Beeghly, M. (1998). Emergence of symbolic play: Perspectives from typical and atypical development. In J. Burack, R. M. Hodapp, & E. Zigler (Eds.), *Handbook of mental retardation and development* (pp. 240–289). New York: Cambridge University Press.
- Benedict, H. (1979). Early lexical development: Comprehension and production. *Journal of Child Language, 6*, 183–200.
- Bigham, S., & Bouchier-Sutton, A. (2007). The decontextualization of form and function in the development of pretence. *British Journal of Developmental Psychology, 25*, 335–351.
- Black, B. (1992). Negotiating social pretend play: Communication differences related to social status and sex. *Merrill-Palmer Quarterly, 38*(2), 212–232.
- Boerger, E. A., Tullos, A., & Woolley, J. D. (in press). Return of the Candy Witch: Individual differences in acceptance and stability of belief in a novel fantastical being. *British Journal of Developmental Psychology*.
- Bouchier, A., & Davis, A. (2000). The influence of availability and affect on children's pretence. *British Journal of Developmental Psychology, 18*, 137–156.
- Brandone, A. C., & Wellman, H. M. (2009). You can't always get what you want: Infants understand failed goal-directed actions. *Psychological Science, 20*(1), 85–91.
- Bretherton, I. (Ed.). (1984). *Symbolic play: The development of social understanding*. Orlando: Academic Press.
- Bretherton, I. (1989). Pretense: The form and function of make-believe play. *Developmental Review, 9*, 383–401.
- Bretherton, I., Bates, E., McNew, S., Shore, C., Williamson, C., & Beeghly-Smith, M. (1981). Comprehension and production of symbols in infancy: An experimental study. *Developmental Psychology, 17*, 728–736.
- Brown, J. R., Donelan-McCall, N., & Dunn, J. (1996). Why talk about mental states? The significance of children's conversations with friends, siblings, and mothers. *Child Development, 67*, 836–849.

- Bruner, J. (1983). *Child's talk: Learning to use language*. New York: Norton.
- Bunce, L., & Harris, M. (2008). "I saw the real Father Christmas!" Children's everyday uses of the words real, really, and pretend. *British Journal of Developmental Psychology*, *26*, 445–455.
- Campos, J. J. (1980). Human emotions: Their new importance and their role in social referencing. *Research and Clinical Center for Child Development. Annual Report*, 1–7.
- Campos, J. J., Anderson, D. I., Barbu-Roth, M. A., Hubbard, E. M., Hertenstein, M. J., & Witherington, D. (2000). Travel broadens the mind. *Infancy*, *1*(2), 149–219.
- Carlson, S. M., Taylor, M., & Levin, G. (1998). The influence of culture on pretend play: The case of Mennonite children. *Merrill-Palmer Quarterly*, *44*, 538–565.
- Carpenter, M., Akhtar, N., & Tomasello, M. (1998). Fourteen- through 18-month-old infants differentially imitate intentional and accidental actions. *Infant Behavior and Development*, *21*, 315–330.
- Clark, C. D. (1995). *Flights of fancy, leaps of faith*. Chicago: University of Chicago Press.
- Clark, E. V. (2003). *First language acquisition*. New York: Cambridge University Press.
- Connolly, J. A., & Doyle, A. (1984). Relation of social fantasy play to social competence in pre-schoolers. *Developmental Psychology*, *20*, 597–608.
- Crawley, S. B., & Sherrod, K. B. (1984). Parent–infant play during the first year of life. *Infant Behavior and Development*, *7*, 65–75.
- Cutting, A. L., & Dunn, J. (2006). Conversations with siblings and with friends: Links between relationship quality and social understanding. *British Journal of Developmental Psychology*, *24*, 73–87.
- Dale, N. (1989). Pretend play with mothers and siblings: Relations between early performance and partners. *Journal of Psychology and Psychiatry*, *30*, 751–759.
- Damasio, A. R. (1994). *Descartes' error: Emotion, reason, and the human brain*. New York: G. P. Putnam.
- Danziger, E. (2006). The thought that counts: Understanding variation in cultural theories of interaction. In S. Levinson & N. Enfield (Eds.), *The roots of human sociality: Culture, cognition and human interaction* (pp. 259–278): Oxford: Berg Press.
- Decety, J., & Grèzes, J. (2006). The power of simulation: Imagining one's own and other's behavior. *Brain Research*, *1079*(1), 4–14.
- DeLoache, J. S., & Plautzer, B. (1985). *Tea for two: Joint mother–child symbolic play*. Paper presented at Biennial meeting for the Society for Research in Child Development, Toronto.
- DeLoache, J. S., & Smith, C. M. (1999). Early symbolic representation. In I. E. Sigel (Ed.), *Development of mental representation: Theories and applications* (pp. 61–86). Mahwah, NJ: Erlbaum.
- Dias, M. G., & Harris, P. L. (1988). The effect of make-believe play on deductive reasoning. *British Journal of Developmental Psychology*, *6*, 207–221.
- Dias, M. G., & Harris, P. L. (1990). The influence of the imagination on reasoning by young children. *British Journal of Developmental Psychology*, *8*, 305–318.
- DiLalla, L. F., & Watson, M. W. (1988). Differentiation of fantasy and reality: Preschoolers' reactions to interruptions in their play. *Developmental Psychology*, *24*, 286–291.
- Dockett, S., & Degotardi, S. (1997). Some implications of popularity at age four. *Journal of Australian Research in Early Childhood Education*, *1*, 21–31.
- Downs, A. C. (1990). Children's judgments of televised events: The real versus pretend distinction. *Perceptual and Motor Skills*, *70*, 779–782.
- Dunn, J. (1988). *The beginnings of social understanding*. Cambridge, MA: Harvard University Press.
- Dunn, J., Brown, J., & Beardsall, L. (1991). Family talk about feeling states and children's later understanding of others' emotions. *Developmental Psychology*, *27*, 448–455.

- Dunn, J., & Cutting, A. L. (1999). Understanding others, and individual differences in friendship interactions in young children. *Social Development, 8*, 201–219.
- Dunn, J., & Dale, N. (1984). I a daddy: 2-year-olds collaboration in joint pretend play with sibling and with mother. In I. Bretherton (Ed.), *Symbolic Play* (pp. 131–158). London: Academic Press.
- Dunn, J., & Hughes, C. (2001). “I got some swords and you’re dead!”: Violent fantasy, antisocial behavior, friendship, and moral sensibility in young children. *Child Development, 72*(2), 491–505.
- Dunn, J., & Wooding, C. (1977). Play in the home and its implications for learning. In B. Tizard & D. Harvey (Eds.), *Biology of play*. London: Spastics International.
- Eibl-Eibesfeldt, I. (1989). *Human Ethology*. New York: Aldine de Gruyter.
- Farver, J. A. M. (1999). Activity setting analysis: A model for reexamining the role of culture in development. In A. Goncu (Ed.), *Children’s engagement in the world: Sociocultural perspectives* (pp. 99–127). New York: Cambridge University Press.
- Farver, J. A. M., & Howes, C. (1993). Cultural differences in American and Mexican mother–child pretend play. *Merrill-Palmer Quarterly, 39*, 344–358.
- Farver, J. A. M., & Wimbarti, S. (1995). Paternal participation in toddler’s pretend play. *Social Development, 4*, 17–31.
- Fein, G. G. (1975). A transformational analysis of pretending. *Developmental Psychology, 11*, 291–296.
- Fein, G. G. (1981). Pretend play in childhood: An integrative review. *Child Development, 52*, 1095–1118.
- Fein, G. G. (1989). Mind, meaning, and affect: Proposals for a theory of pretense. *Developmental Review, 9*, 345–363.
- Fein, G. G., Moorin, E. R., & Enslein, J. (1982). Pretense and peer behavior: An intersectoral analysis. *Human Development, 25*, 392–406.
- Feinman, S. (Ed.). (1992). *Social referencing and the social construction of reality in infancy*. New York: Plenum Press.
- Fenson, L., & Ramsay, D. S. (1981). Effects of modeling action sequences on the play of twelve-, fifteen-, and nineteen-month-old children. *Child Development, 52*, 1028–1036.
- Fiese, B. H. (1990). Playful relationships: A contextual analysis of mother–toddler interaction and symbolic play. *Child Development, 61*, 1648–1656.
- Flavell, J. H. (1963). *The developmental psychology of Jean Piaget*. New York: D. Van Nostrand Co.
- Flavell, J. H., Green, F. L., & Flavell, E. R. (1986). Development of knowledge about the appearance–reality distinction. *Monographs of the Society for Research in Child Development, 51*, (1, Serial No. 212).
- Flavell, J. H., Flavell, E. R., & Green, F. L. (1987). Young children’s knowledge about the apparent–real and pretend–real distinctions. *Developmental Psychology, 23*, 816–822.
- Foley, M. A., Harris, J. F., & Hermann, S. (1994). Developmental comparisons of the ability to discriminate between memories for symbolic play enactments. *Developmental Psychology, 30*, 206–217.
- Foley, M. A., & Ratner, H. H. (1998). Children’s recoding memory for collaboration: A way of learning from others. *Cognitive Development, 13*, 91–108.
- Fonagy, P. (1996). The significance of the development of metacognitive control over mental representations in parenting and infant development. *Journal of Clinical Psychoanalysis, 5*, 67–86.
- Galyer, K. T., & Evans, I. M. (2001). Pretend play and the development of emotional regulation in preschool children. *Early Child Development and Care, 166*, 93–108.
- Ganea, P. A., Richert, R. A., Bean, E., & DeLoache, J. S. (2004). *Fantasy books and children’s conceptions about reality*. Unpublished manuscript, University of Virginia.

- Garvey, C., & Berndt, R. (1975). *Organization in pretend play*. Paper presented at the meeting of the American Psychological Association, Chicago.
- Gaskins, S. (1999). Children's daily lives in a Mayan village: A case study of culturally constructed roles and activities. In A. Goncúe (Ed.), *Children's engagement in the world: Sociocultural perspectives* (pp. 25–60). New York: Cambridge University Press.
- German, T. P., Niehaus, J. L., Roarty, M. P., Giesbrecht, B., & Miller, M. B. (2004). Neural correlates of detecting pretense: Automatic engagement of the intentional stance under covert conditions. *Journal of Cognitive Neuroscience*, *16*(10), 1805–1817.
- Giffin, H. (1984). The coordination of meaning in the creation of shared make-believe play. In I. Bretherton (Ed.), *Symbolic play* (pp. 73–100). Orlando: Academic Press.
- Gleason, T. R. (2004). Imaginary companions and peer acceptance. *International Journal of Behavioral Development*, *28*(3), 204–209.
- Glenberg, A., Gutierrez, T., Levin, J., Japuntich, S., & Kaschak, M. (2004). Activity and imagined activity can enhance young children's reading comprehension. *Journal of Educational Psychology*, *96*(3), 424–436.
- Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Cambridge, MA: Harvard University Press.
- Goldin-Meadow, S. (2003). *Hearing gesture: How our hands help us think*. Cambridge, MA: Harvard University Press.
- Golomb, C., & Kuersten, R. (1996). On the transition from pretence play to reality: What are the rules of the game? *British Journal of Developmental Psychology*, *14*, 203–217.
- Gomez, J.-C. (2008). The evolution of pretence: From intentional availability to intentional non-existence. *Mind and Language*, *23*(5), 586–606.
- Goncu, A. (1993). Development of intersubjectivity in the social pretend play of preschool children. *Human Development*, *36*, 185–198.
- Goncu, A., Patt, M., & Kouba, E. (2004). Understanding young children's pretend play in context. In P. Smith (Ed.), *Handbook of childhood social development* (pp. 418–437). London: Blackwell.
- Goncu, A., Tuermer, U., Jain, J., & Johnson, D. (1999). Children's play as cultural activity. In A. Goncúe (Ed.), *Children's engagement in the world: Sociocultural perspectives* (pp. 148–170). New York: Cambridge University Press.
- Gosso, Y., Morais, M. L. S., & Otta, E. (2007). Pretend play of Brazilian children: A window into different cultural worlds. *Journal of Cross-Cultural Psychology*, *38*(5), 539–558.
- Gottlieb, G., Wahlsten, D., & Lickliter, R. (1998). The significance of biology for human development: A developmental psychobiological systems view. In R. Lerner (Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of child development* (pp. 233–273). New York: Wiley.
- Haight, W. L., & Miller, P. J. (1993). *Pretending at home*. Albany: SUNY Press.
- Haight, W. L., Wang, X.-l., Fung, H. H.-t., Williams, K., & Mintz, J. (1999). Universal, developmental, and variable aspects of young children's play: A cross-cultural comparison of pretending at home. *Child Development*, *70*, 1477–1488.
- Harris, P. L. (2000). *The work of the imagination*. Oxford: Blackwell.
- Harris, P. L., Brown, E., Marriott, C., Whittall, S., & Harmer, S. (1991). Monsters, ghosts, and witches: Testing the limits of the fantasy–reality distinction in young children. *British Journal of Developmental Psychology*, *9*, 105–124.
- Harris, P. L., & Kavanaugh, R. D. (1993). Young children's understanding of pretense. *Monographs of the Society for Research in Child Development*, *58*, (1, Serial No. 231).
- Hawkins, J., Pea, R. D., Glick, J., & Scribner, S. (1984). Merds that don't like mushrooms: Evidence for deductive reasoning by preschoolers. *Developmental Psychology*, *20*, 584–589.
- Hofstadter, D. (1979). *Godel, Escher, Bach: An eternal golden brain*. New York: Basic Books.

- Howe, N., Petrakos, H., & Rinaldi, C. (1998). "All the sheep are dead. He murdered them": Sibling pretense, negotiation, internal state language, and relationship quality. *Child Development, 69*, 182–191.
- Howe, N., Petrakos, H., Rinaldi, C. M., & LeFebvre, R. (2005). "This is a bad dog, you know ...": Constructing shared meanings during sibling pretend play. *Child Development, 76*(4), 783–794.
- Howe, N., Rinaldi, C. M., Jennings, M., & Petrakos, H. (2002). "No! The lambs can stay out because they got cozies": Constructive and destructive sibling conflict, pretend play, and social understanding. *Child Development, 73*(5), 1460–1473.
- Howes, C., & Matheson, C.C. (1992). Sequences in the development of competent play with peers: Social and social pretend play. *Developmental Psychology, 28*, 961–974.
- Howes, C., & Rodning, C. (1992). Attachment security and social pretend play negotiations. In C. Howes, O. Unger, & C. C. Matheson (Eds.), *The collaborative construction of pretend: Social pretend play functions* (pp. 89–98). Albany: State University of New York Press.
- Howes, C., Unger, O. A., & Matheson, C. C. (1992). *The collaborative construction of pretend: Social pretend play functions*. Albany: State University of New York Press.
- Hughes, C., & Dunn, J. (1997). "Pretend you didn't know": Preschoolers' talk about mental states in pretend play. *Cognitive Development, 12*, 381–403.
- Huttenlocher, J., & Higgins, E. T. (1978). Issues in the study of symbolic development. In W. A. Collins (Ed.), *Minnesota Symposia on Child Psychology* (Vol. 11, pp. 98–140). Hillsdale, NJ: Earlbaum.
- Imazu, S., Sugio, T., Tanaka, S., & Inui, T. (2007). Differences between actual and imagined usage of chopsticks: An fMRI study. *Cortex, 43*, 301–307.
- Isabella, R. A., & Belsky, J. (1991). Interactional synchrony and the origins of mother–infant attachment: A replication study. *Child Development, 62*, 373–384.
- Jenkins, J. M., & Astington, J. W. (1996). Cognitive factors and family structure associated with theory of mind development in young children. *Developmental Psychology, 32*, 70–78.
- Johnson, C., & Harris, P. L. (1994). Magic: Special but not excluded. *British Journal of Developmental Psychology, 12*, 35–51.
- Kavanaugh, R. D., & Engel, S. (1998). The development of pretense and narrative in early childhood. In O. Saracho & B. Spodek (Eds.), *Multiple perspectives of play in early childhood* (pp. 80–99). Albany, NY: State University of New York Press.
- Kavanaugh, R. D., Whittington, S., & Cerbone, M. J. (1983). Mother's use of fantasy speech to young children. *Journal of Child Language, 10*, 45–55.
- Kowalski, H. S., Wyver, S. R., Masselos, G., & de Lacey, P. (2005). The long-day childcare context: Implications for toddlers' pretend play. *Early Years: An International Journal of Research and Development, 25*(1), 55–65.
- Króliczak, G., Cavina-Pratesi, C., Goodman, D. A., & Culham, J. C. (2007). What does the brain do when you fake it? An fMRI study of pantomimed and real grasping. *Journal of Neurophysiology, 97*(7), 2410–2422.
- Kuczaj, S. A. (1981). Factors influencing children's hypothetical reference. *Journal of Child Language, 8*, 131–137.
- Lalonde, C. E., & Chandler, M. J. (1995). False belief understanding goes to school: On the social-emotional consequences of coming early or late to a first theory of mind. *Cognition and Emotion, 9*, 167–185.
- Lang, P. J. (1984). Cognition in emotion: Concept and action. In C. E. Izard, J. Kagan, & R. B. Zajonc (Eds.), *Emotions, cognition, and behavior* (pp. 192–228). Cambridge: Cambridge University Press.
- Leslie, A. M. (1987). Pretense and representation: The origins of "theory of mind." *Psychological Review, 94*, 412–426.

- Levit, A. G., & Utman, J. G. A. (1992). From babbling towards the sound systems of English and French: A longitudinal two-case study. *Journal of Child Language*, *19*, 19–49.
- Lewis, C., Freeman, N., Kyriakidou, C., Maridaki-Kassotaki, K., & Berridge, D. (1996). Social influences on false belief access: Specific sibling influences or general apprenticeship? *Child Development*, *67*, 2930–2947.
- Lillard, A. S. (1993). Pretend play skills and the child's theory of mind. *Child Development*, *64*, 348–371.
- Lillard, A. S. (1998). Playing with a theory of mind. In O. Saracho & B. Spodek (Eds.), *Multiple perspectives on play in early childhood education* (pp. 11–33). New York: SUNY Press.
- Lillard, A. S. (2001a). Pretend play as Twin Earth. *Developmental Review*, *21*, 1–33.
- Lillard, A. S. (2001b). Pretending, understanding pretense, and understanding minds. In S. Reifel (Ed.), *Play and culture studies* (Vol. 3, pp. 233–254). Westport, CT: Ablex.
- Lillard, A. S. (2005). *Montessori: The science behind the genius*. New York: Oxford University Press.
- Lillard, A. S., Nishida, T., Massaro, D., Vaish, A., Ma, L., & McRoberts, G. (2007). Signs of pretense across age and scenario. *Infancy*, *11*(1), 1–30.
- Lillard, A. S., & Witherington, D. (2004). Mothers' behavior modifications during pretense snacks and their possible signal value for toddlers. *Developmental Psychology*, *40*(1), 95–113.
- Lindsay, E. W., & Mize, J. (2000). Parent–child physical pretense play: Links to children's social competence. *Merrill-Palmer Quarterly*, *46*(4), 565–591.
- Locke, J. L. (1993). *The child's path to spoken language*. Cambridge, MA: Harvard.
- Luhrman, T. M. (1989). *Persuasions of the witch's craft*. Cambridge, MA: Harvard University Press.
- Ma, L., & Lillard, A. S. (2006). Where is the real cheese? Young children's ability to discriminate between real and pretend acts. *Child Development*, *77*(6), 1762–1777.
- Ma, L., & Lillard, A. S. (2009). What makes an act a pretense one? Young children's pretend–real judgments and explanations. Unpublished manuscript, University of Virginia.
- McAlister, A., & Peterson, C. C. (2006). Mental playmates: Siblings, executive functioning and theory of mind. *British Journal of Developmental Psychology*, *24*, 733–751.
- McCune-Nicholich, L. (1977). Beyond sensorimotor intelligence: Assessment of symbolic maturity through analysis of pretend play. *Merrill-Palmer Quarterly*, *23*, 89–99.
- Meins, E., Fernyhough, C., Russell, J., & Clark-Carter, D. (1997). *Security of attachment as a predictor of symbolic and mentalising abilities: A longitudinal study*. Unpublished manuscript, University of Cambridge.
- Meins, E., & Russell, J. (1997). Security and symbolic play: the relation between security of attachment and executive capacity. *British Journal of Developmental Psychology*, *15*, 63–76.
- Meltzoff, A. (1995). Understanding the intentions of others: Re-enactment of intended acts by 18-month-old children. *Developmental Psychology*, *31*, 838–850.
- Miller, P., & Garvey, C. (1984). Mother–baby role play: Its origins in social support. In I. Bretherton (Ed.), *Symbolic Play* (pp. 101–158). London: Academic Press.
- Mizuguchi, T., & Sugai, K. (2002). Object-related knowledge and the production of gestures with imagined objects by preschool children. *Perceptual and Motor Skills*, *94*(1), 71–79.
- Morison, P., & Gardner, H. (1978). Dragons and dinosaurs: The child's capacity to differentiate fantasy from reality. *Child Development*, *49*, 642–648.
- Mumme, D. L., Fernald, A., & Herrera, C. (1996). Infants' responses to facial and vocal emotional signals in a social referencing paradigm. *Child Development*, *67*, 3219–3237.
- Nelson, K., & Seidman, S. (1984). Playing with scripts. In I. Bretherton (Ed.), *Symbolic play* (pp. 45–72). London: Academic Press.
- Nelson, L. J., Hart, C. H., & Evans, C. A. (2008). Solitary-functional play and solitary-pretend play: Another look at the construct of solitary-active behavior using playground observations. *Social Development*, *17*(4), 812–831.

- Nicolich, L. M. (1977). Beyond sensorimotor intelligence: Assessment of symbolic maturity through analysis of pretend play. *Merrill-Palmer Quarterly*, *23*, 89–99.
- Nielsen, M., & Dissanayake, C. (2004). Pretend play, mirror self-recognition and imitation: A longitudinal investigation through the second year. *Infant Behavior and Development*, *27*, 342–365.
- Nishida, T., & Lillard, A. S. (2007). The informative value of emotional expressions: Social referencing in mother–infant pretense. *Developmental Science*, *10*(2), 205–212.
- O’Connell, B., & Betherton, I. (1984). Toddler’s play, alone and with mother: The role of maternal guidance. In I. Bretherton (Ed.), *Symbolic Play* (pp. 337–368). London: Academic Press.
- Onishi, K. H., Baillargeon, R., & Leslie, A. M. (2007). 15-month-old infants detect violations in pretend scenarios. *Acta Psychologica*, *124*(1), 106–128.
- Parten, M. B. (1932). Social participation among preschool children. *Child Development*, *27*, 243–269.
- Parten, M. B. (1933). Social play among preschool children. *Journal of Abnormal and Social Psychology*, *28*, 136–147.
- Piaget, J. (1945/1962). *Play, dreams, and imitation in childhood*. New York: Norton.
- Piaget, J. (1970). *Science of education and the psychology of the child* (D. Coltman, Trans.). New York: Orion Press.
- Rakoczy, H. (2008a). Taking fiction seriously: Young children understand the normative structure of joint pretence games. *Developmental Psychology*, *44*(4), 1195–1201.
- Rakoczy, H. (2008b). Pretence as individual and collective intentionality. *Mind and Language*, *23*(5), 499–517.
- Rakoczy, H., & Tomasello, M. (2006). Two-year-olds grasp the intentional structure of pretense acts. *Developmental Science*, *9*(6), 557–564.
- Rakoczy, H., Tomasello, M., & Striano, T. (2004). Young children know that trying is not pretending: A test of the “behaving-as-if” construal of children’s early concept of pretense. *Developmental Psychology*, *40*(3), 388–399.
- Rakoczy, H., Tomasello, M., & Striano, T. (2006). The role of experience and discourse in children’s developing understanding of pretend play actions. *British Journal of Developmental Psychology*, *24*, 305–335.
- Richert, R. A., & Lillard, A. S. (2004). Observers’ proficiency at identifying pretense acts based on behavioral cues. *Cognitive Development*, *19*, 223–240.
- Richert, R. A., Shager, A. B., Hoffman, R. E., & Taylor, M. (2009). Learning from fantasy and real characters in preschool and kindergarten. Unpublished manuscript, University of California, Riverside.
- Rosengren, K. S., Kalish, C. W., Hickling, A. K., & Gelman, S. A. (1994). Exploring the relation between preschool children’s magical beliefs and causal thinking. *British Journal of Developmental Psychology*, *12*, 69–82.
- Rubin, K. H., Fein, G. G., & Vandenberg, B. (1983). Play. In P. H. Mussen (General Ed.), E. M. Hetherington (Vol. Ed.), *Handbook of child psychology: Vol. 4. Socialization, personality, and social development*. (4th ed., pp. 693–774). New York: Wiley.
- Ruffman, T., Perner, J., Naito, M., Parkin, L., & Clements, W. (1998). Older (but not younger) siblings facilitate false belief understanding. *Developmental Psychology*, *34*, 161–174.
- Ruffman, T., Perner, J., & Parkin, L. (1999). How parenting style affects false belief understanding. *Social Development*, *8*, 395–411.
- Ryle, G. (1949). *The concept of mind*. Chicago: University of Chicago Press.
- Samuels, A., & Taylor, M. (1994). Children’s ability to distinguish fantasy events from real-life events. *British Journal of Developmental Psychology*, *12*, 417–427.

- Scarlett, W. G., & Wolf, D. (1979). When it's only make-believe: The construction of a boundary between fantasy and reality. In E. Winner & H. Gardner (Eds.), *Fact, fiction, and fantasy in childhood* (Vol. 6, pp. 29–40). San Francisco: Jossey-Bass.
- Schank, R. C., & Abelson, R. P. (1977). *Scripts, plans, goals and understanding*. Hillsdale, NJ: Erlbaum.
- Schubotz, R. I., & von Cramon, D. Y. (in press). The case of pretense: Observing actions and inferring goals. *Journal of Cognitive Neuroscience*.
- Schwartzman, H. B. (1978). *Transformations: The anthropology of children's play*. New York: Plenum.
- Schwebel, D. C., Rosen, C. S., & Singer, J. L. (1999). Preschoolers' pretend play and theory of mind: The role of jointly constructed pretence. *British Journal of Developmental Psychology*, 17, 333–348.
- Scott, F. J., Baron-Cohen, S., & Leslie, A. (1999). "If pigs could fly": A test of counterfactual reasoning and pretence in children with autism. *British Journal of Developmental Psychology*, 17, 349–362.
- Sharon, T., & Woolley, J. (2004). Do monsters dream? Young children's understanding of the fantasy/reality distinction. *British Journal of Developmental Psychology*, 22, 293–310.
- Skolnick, D., & Bloom, P. (2006). What does Batman think about SpongeBob? Children's understanding of the fantasy/fantasy distinction. *Cognition*, 101(1), B9–B18.
- Skolnick Weisberg, D., & Bloom, P. (in press). Young children separate multiple pretend worlds. *Developmental Science*.
- Smith, E., Lillard, A. S., & Sorenson, L. (2009). When pretending ends: Undergraduates' retrospective accounts of pretending. University of Virginia.
- Smith, P. K. (1988). Children's play and its role in early development: A re-evaluation of the "play ethos." In A. D. Pellegrini (Ed.), *Psychological bases for early education* (pp. 207–226). Chichester, UK: Wiley.
- Smolucha, L., & Smolucha, F. (1998). The social origins of mind: Post-Piagetian perspectives on pretend play. In O. N. Saracho & S. Bernard (Eds.), *Multiple perspectives on play in early childhood education*. SUNY series, early childhood education: Inquiries and insights (pp. 34–58). Albany, NY: State University of New York Press.
- Snow, C. (1988). The development of conversations between mothers and babies. In M. B. Franklin & S. S. Barten (Eds.), *Child language: A reader* (pp. 20–35). New York: Oxford University Press.
- Sodian, B., & Huelsken. (1999, April). *Young children's ability to differentiate pretense from reality*. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Albuquerque.
- Sodian, B., Huelsken, C., Ebner, C., & Thoermer, C. (1998). Children's differentiation of mentality and reality in pretense-precursor to a theory of mind? *Sprache & Kognition*, 17, 199–213.
- Stanislavsky, K. (1922/1984). On various trends in the theatrical arts. In O. C. Korneva (Ed.), *Konstantini Stanislavsky: Selected works* (pp. 133–191). Moscow: Raduga Publishers.
- Suizzo, M., & Bornstein, M. (2006). French and European American child–mother play: Culture and gender considerations. *International Journal of Behavioral Development*, 30(6), 498–508.
- Tamis-LeMonda, C. S., & Bornstein, M. H. (1991). Individual variation, correspondence, stability, and change in mother and toddler play. *Infant Behavior and Development*, 14, 143–162.
- Tamis-LeMonda, C. S., Bornstein, M. H., Cyphers, L., Toda, S., et al. (1992). Language and play at one year: A comparison of toddlers and mothers in the United States and Japan. *International Journal of Behavioral Development*, 15, 19–42.
- Taylor, M. (1999). *Imaginary companions and the children who create them*. Oxford: Oxford University Press.

- Taylor, M., & Carlson, S. (1997). The relation between individual differences in fantasy and theory of mind. *Child Development, 68*, 436–455.
- Taylor, M., & Carlson, S. (2000). The influence of religious beliefs on parent's attitudes about children's fantasy behavior. In K. S. Rosengren, C. N. Johnson, & P. L. Harris (Eds.), *Imagining the impossible: Magical, scientific, and religious thinking in children* (pp. 247–268). Cambridge: Cambridge University Press.
- Taylor, M., Carlson, S., Maring, B., Gerow, L., Charley, C. (2004). The characteristics and correlates of fantasy in school-age children: Imaginary companions, impersonation, and social understanding. *Developmental Psychology, 40*, 1173–1187.
- Tomasello, M., & Rakoczy, H. (2003). What makes human cognition unique? From individual to shared to collective intentionality. *Mind and Language, 18*(2), 121–147.
- Tomasello, M., Striano, T., & Rochat, P. (1999). Do young children use objects as symbols? *British Journal of Developmental Psychology, 17*, 563–584.
- Ungerer, J., Zelazo, P. R., Kearsley, R. B., & O'Leary, K. (1981). Developmental changes in the representation of objects in symbolic play from 18 to 34 months of age. *Child Development, 52*, 186–195.
- Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.
- Walker-Andrews, A., & Kahana-Kalman, R. (1999). The understanding of pretense across the second year of life. *British Journal of Developmental Psychology, 17*, 523–536.
- Walton, K. L. (1990). *Mimesis as make-believe*. Cambridge, MA: Harvard University Press.
- Watson, M. W., & Fischer, K. W. (1977). A developmental sequence of agent use in late infancy. *Child Development, 48*, 828–836.
- Wellman, H. M., & Estes, D. (1986). Early understanding of mental entities: A re-examination of childhood realism. *Child Development, 57*, 910–923.
- Werner, H., & Kaplan, B. (1963). *Symbol formation*. New York: Wiley.
- Westwood, D. A., Chapman, C. D., & Roy, E. A. (2000). Pantomimed actions may be controlled by the ventral visual stream. *Experimental Brain Research, 130*, 545–548.
- Wolf, D. P., Rygh, J., & Altshuler, J. (1984). Agency and experience: Actions and states in play narratives. In I. Bretherton (Ed.), *Symbolic Play*. Cambridge: Academic Press.
- Woolley, J. D. (1997). Thinking about fantasy: Are children fundamentally different thinkers and believers from adults? *Child Development, 6*, 991–1011.
- Woolley, J. D., Boerger, E. A., & Markman, A. B. (2004). A visit from the Candy Witch: Factors influencing young children's belief in a novel fantastical being. *Developmental Science, 7*(4), 456–468.
- Woolley, J. D., & Phelps, K. E. (1994). Young children's practical reasoning about imagination. *British Journal of Developmental Psychology* [Special issue: Magic], *12*, 53–67.
- Youngblade, L. M., & Dunn, J. (1995). Individual differences in young children's pretend play with mother and sibling: Links to relationships and understanding of other people's feelings and beliefs. *Child Development, 66*, 1472–1492.
- Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist, 35*, 151–175.