

Distinguishing Imagination from Reality

Deena Skolnick Weisberg

Abstract

This chapter reviews children's ability to distinguish imagination from reality. This distinction is in place by around age three, enabling children to separate real from imagined events and entities in pretend games and fictional stories. But children occasionally demonstrate imagination–reality confusions, as measured by their implicit reactions to certain kinds of pretend scenarios and their occasionally incorrect explicit reports about fictional entities. These confusions could be taken to show that children have an immature reality–imagination distinction. However, it is more accurate to conclude that this distinction is well developed but can be influenced by features of the task, such as the presence of strong negative emotions, and by individual difference variables, such as fantasy orientation.

Key Words: development, imagination, pretense, reality–imagination distinction, source monitoring, stories

Children engage with their imaginative faculties in a variety of ways as they grow and develop. They play simple pretend games starting at about the age of two (Fein, 1981; Nicolich, 1977; Singer & Singer, 1990), which are then elaborated into longer pretend sequences and sometimes into ongoing relationships with imaginary companions (Taylor, 1999) and paracosms (see chapter 27). Children also listen to and make up fictional stories throughout the early preschool years and beyond (Applebee, 1978; Appleyard, 1990; Engel, 1995), and they engage in counterfactual reasoning both implicitly (e.g., in causal learning; see Gopnik & Schulz, 2007) and explicitly (e.g., German & Nichols, 2003; Leavers & Harris, 2000; Sobel, 2004).

These studies and others suggest that children are quite competent at navigating between imagination and reality. However, it would be imprudent to credit children with a true understanding of these imaginative activities without first considering how

much they understand about the imaginative nature of these activities. Although there are important ways in which the boundary between reality and imagination is permeable (an issue that is discussed later in this chapter), children may see *all* aspects of pretend games and stories as extensions of reality. If children experience this kind of confusion about the difference between imagination and reality, then their abilities to engage with pretend sequences, fictional stories, and counterfactual scenarios may reflect an immature blurring of the line between reality and imagination, rather than a mature ability to disengage with the real world when necessary.

Famously, this was Jean Piaget's view about children's imaginative abilities. In a discussion of children's pretend games, he wrote, "The striking feature of these symbolic combinations is the extent to which the child reproduces or continues the real world... the child has no imagination, and what we ascribe to him as such is no more than a lack of

coherence” (Piaget, 1962, p. 131). Many researchers since Piaget, and many parents as well, have shared this worry: Children might seem to be pretending or understanding fictional episodes, but really they are demonstrating a profound confusion of the non-real with the real.

Systematic research on this topic over the past several decades has done a great deal to overturn this view of children’s imagination. In many studies, researchers have found that by around the age of three children are generally successful at explicitly distinguishing reality from various types of imaginative activities, most notably pretend games and fictional stories. This chapter reviews the evidence of this success as well as some evidence that children do exhibit imagination–reality confusions under certain circumstances. This chapter also discusses the development of this ability, including when children first begin to separate pretend sequences and fictional stories from real-life events, whether and how this ability changes over time, and what internal and external factors can influence children’s ability to make this distinction. This chapter includes a discussion of how children are able to make this distinction, drawing on research on memory processes as a guide to children’s successes and failures. Following these discussions is a brief review of more advanced aspects of the ability to separate imagination from reality, such as children’s tendency to separate multiple imagined worlds from each other and children’s ability to understand that some events are implausible or unlikely rather than impossible. The chapter concludes by summarizing what is known about the imagination–reality distinction in development and making suggestions for future research in this area.

Children’s Success at Distinguishing Imagination from Reality

This section focuses on the two major imaginative processes present in infancy and childhood, pretense and fictional episodes, and how each of these is distinguished from reality. Although the discussion here and throughout the chapter treats these two forms of imagination separately, they are certainly related to each other as well as to other imaginative processes (Taylor, 1997).

The Pretense–Reality Distinction

One of the first domains in which children demonstrate their imaginative abilities is pretense, specifically object substitution (Fein, 1981; Lillard, 1993). The available evidence suggests that toddlers

can understand at least some aspects of pretend sequences and do have some ability to distinguish pretense from reality. For example, in one test of their understanding of pretense, 15-month-olds were shown a pretend sequence in which an actor poured pretend water into a blue cup. The actor then pretended to drink from either the “full” blue cup or an empty red cup standing next to it. The children looked longer at the unexpected action of drinking from the red cup than at the expected action of drinking from the blue cup, showing that they could detect the violation in this pretend action sequence and they expected the pretend events to be internally consistent (Onishi, Baillargeon, & Leslie, 2007; see also Harris & Kavanaugh, 1993). These results demonstrate that very young children have expectations about pretense sequences even before they are producing such sequences themselves.

But do children this age have an understanding of the nonliteral nature of these pretend actions? One of the tools that even very young children have at their disposal to distinguish pretense from reality is the presence of physical differences between pretense actions and serious actions. Some of these differences manifest themselves in the way that adults talk during pretend sequences versus real sequences. Reissland and Snow (1996) analyzed the speech patterns of parents in parent–child interactive dyads during pretend and nonpretend play when the children were 11 and 15 months old. They found that parents used higher fundamental frequency and a wider pitch range in play situations than in nonplay situations. A similar study found that parents modified the content of their speech as well, using more interactive frames and more indirect commands in the play context, compared with more instructional frames and more direct commands in the nonplay context (Reissland, 1998). But these studies did not examine the reactions of the toddlers in these situations, so it is unclear whether they used these cues to categorize action sequences.

In addition to vocal cues, toddlers have access to other signals that can help them to determine whether an event is real or pretend, such as physical actions. In a careful examination of the physical correlates of real and pretend actions, Lillard and Witherington (2004) found that mothers who pretended to eat a snack with their 18-month-old children smiled more, talked more, and used faster movements than when they really ate a snack with their children. But the same critique that applies to Reissland’s work applies here: Just because these

cues are available in the environment does not necessarily mean that children can use them to differentiate the pretend from the real sequences. Lillard and Witherington addressed this issue by observing the children in these dyads and scoring them on whether they understood the pretend nature of snack sequence. They found that children's understanding of the pretense, as measured by their smiling and task-appropriate actions, was correlated with the amount of time the mothers spent looking at the child during the sequence as well as with some measures of the mothers' smiling. Although all of the toddlers in the study demonstrated some understanding of the pretend sequence, the physical cues were most effective for those children who had greater experience with pretend play outside of the laboratory.

Although this study offered one of the first systematic demonstrations of the difference between mothers' actions in real and pretend sequences, it presents two methodological issues. First, there is some difficulty in claiming that the children in this study genuinely understood the pretend nature of the sequences. The authors used behavioral cues, like smiling, as a proxy for whether children understood the pretense actions because they were unable to directly ask the 18-month-olds to categorize the sequences as real or pretend. Although this is appropriate given the age group in this study, a stronger measure is necessary to confirm that children can use visual cues as signals to an action's pretend nature. Second, this method included an important confound: The real action sequence always involved real snack food, whereas the pretend action sequence did not. It is probable that toddlers can use the availability of actual objects to distinguish pretend from real scenarios, regardless of any linguistic or action cues provided by their pretend partner. Indeed, this difference could be one of the first environmental cues that infants and toddlers use to categorize actions as real or pretend. But can children distinguish reality from pretense when these content cues are absent? If so, what action cues are most helpful to them in making this distinction?

These two issues were addressed by Richert and Lillard (2004), who asked preschool-age children to categorize videos of real and pretend action sequences when the objects (or lack of objects) were hidden from view. Three- and four-year-olds were generally accurate at making these categorization judgments, although they were not as accurate as seven-year-olds or adults. Further, children in all of the age groups as well as adults were more accurate

at categorizing the pretend videos that included a greater proportion of looking at the child as opposed to at the task, longer pauses in the actor's movement, and more sound effects. These investigations demonstrate that there are cues in the child's environment that signal whether a given action is real or pretend, and that young children can use at least some of these cues to categorize these actions.

As with this study, the majority of the work on children's abilities to distinguish pretense from reality tends to use explicit categorization measures, which provide a stronger basis on which to claim that children understand the pretense–reality distinction. By necessity, these tasks have focused on somewhat older children. These tasks often take the form of asking children to create or engage with an imaginary entity or the counterfactual identity of an object, and then asking whether the entity or counterfactual identity is real. For example, Wellman and Estes (1986) read three-, four-, and five-year-olds stories about a character who either had a real object or was pretending to have an object. The children were then asked if the character could actually see or act on the object. Children in all three age groups were highly accurate at reporting that the character could see and act on the real object, as well as an object that was real but not physically present with the character, but not the imagined object.

Another common measure in these categorization studies is to have children pretend that there is an object or entity in a closed box and then ask children whether the entity is really there or is merely imaginary. For example, the first study to use this method (Harris, Brown, Marriot, Whittal, & Harmer, 1991) showed four- and six-year-olds two empty boxes and asked them to pretend that one box contained a monster and the other box contained a puppy. When asked whether there was actually a monster or a puppy in the box, children accurately responded in the negative. Other studies using this method have also found that children rarely make mistakes in their explicit reporting on the status of the entities they are imagining, claiming that items that are present in the room are real, whereas the items in the box are not (e.g., Bouchier & Davis, 2000a,b; Golomb & Gallasso, 1995; Woolley & Phelps, 1994; Woolley & Wellman, 1993). Interestingly, children's spontaneous actions toward the boxes often contradicts their explicit report that the boxes are empty, an issue that is discussed later.

Other tasks have probed the pretense–reality distinction in somewhat more subtle ways, although

they have also relied on explicit report measures. For instance, one can ask what children understand about the difference between an object's real identity and its pretend identity (the pretense–reality distinction), as compared with what they understand about the difference between an object's real identity and its appearance (the appearance–reality distinction). In the most direct comparison of these two distinctions, Flavell, Flavell, and Green (1987) asked three-year-olds about the real, apparent, and pretend identities of objects with hidden identities, such as a sponge that has been painted to look like a rock: "What is this, really and truly? What does it look like, right now, to your eyes? What am I pretending it is?" Three-year-olds would sometimes mistakenly report the apparent identity as the object's true identity, but would only rarely report the pretend identity as the object's true identity. These results provide evidence that three-year-olds make a clear distinction between objects' true identities and the counterfactual identities assigned to them during a pretend game, a form of pretense–reality distinction. These results are supported by a search of children's naturalistic use of the words *real* and *really* in the CHILDES database (Woolley & Wellman, 1990). These researchers found that children use *real* and *really* to contrast reality with imagination starting late in the second year of life, but they do not talk spontaneously about the kind of illusory reality presented in appearance–reality tasks until about four and a half years of age.

Examining other kinds of spontaneous remarks and reactions can provide important clues to children's ability to make the pretense–reality distinction. Wyman, Rakoczy, and Tomasello (2009a) looked at three-year-olds' reactions to a character who used a prop according to its real function (e.g., writing with a pen) during a game in which the prop had been given a pretend identity (e.g., using the pen as a toothbrush). When the character had been absent for the stipulation of the object's pretend identity, children tended to accept the character's literal use of the prop. But if the character had been present for the stipulation, children tended to object to the character's actions or intervene so as to bring the character's use of the prop in line with its pretend identity (see also Rakoczy, 2008). Similar spontaneous reactions were observed in a study by Golomb and Kuersten (1996) when these experimenters allowed reality to intrude into a pretend sequence, for example, by eating a real cookie instead of a pretend cookie during a pretend picnic. Preschoolers in this study were surprised at

the experimenter's actions, showing that they had encoded the boundary between real events and pretend events (see also DiLalla & Watson, 1988). These results show that children recognize the difference between engaging with objects and environments according to their true identities as opposed to according to a pretend identity.

Along similar lines, children can reason about multiple pretend identities for a single object, demonstrating that they understand that the normative nature of these identities and the independence of these identities from objects' true identities. For instance, Harris and Kavanaugh (1993, Study 3) tested young two-year-olds on their understanding of the dual usage of a pretend prop. They used the same set of props (a popsicle stick, a round yellow block, and a piece of paper towel) in two different pretend sequences: a breakfast game, in which the popsicle stick was a spoon, the block was an egg, and the paper towel was a napkin; and a bedtime game, in which the popsicle stick was a toothbrush, the block was a bar of soap, and the paper towel was a pillow. In both cases, children responded appropriately to the experimenter's prompts to use each object in the script, demonstrating no difficulty with the change in pretend identities. In support of these results, Wyman, Rakoczy, and Tomasello (2009b) also found that three-year-olds were able to use a single neutral object, like a block, for two different functions in two pretend games (see also Gopnik & Slaughter, 1991; Weisberg & Bloom, 2009). However, this study also asked the children to report explicitly on the object's pretend identity within each game, and found that children were much more likely to perform the appropriate action with the object than they were to label it correctly. Despite this difficulty in explicitly reporting on an object's changing identity, this series of studies shows that children understand at least implicitly that pretend identities are malleable and do not necessarily correspond to the objects' true identities.

Finally, even children who create their own imaginary companions are aware of these companions' status as fictional—despite the amount of time and emotional energy children invest in play with their companions. After conducting detailed interviews with 86 children with imaginary companions, Taylor, Shawber, and Mannering (2009) found only two children who demonstrated any confusion about their companions' status. One of these children did not seem to have a clear idea of her companion's status, whereas the second explicitly claimed that her companion was invisible rather than imaginary.

The other 84 children, or 98 percent of the sample, were categorized as accurately understanding their companion's pretend status. Further, Taylor (1999) reports that many children spontaneously report that their companions are imaginary:

We have the distinct impression that after children spend a period of time answering detailed questions about a pretend friend for a researcher who listens carefully and even takes notes, they begin to wonder if the adult might be confused. So at some point during the interview, children are apt to help the interviewer by saying, 'It's just pretend, you know' or 'She isn't real.' (p. 112)

The Fiction–Reality Distinction

Thus far, this chapter has considered children's understanding of the differences between pretend games and reality, asking how they might use cues in the environment to distinguish pretend from true actions, whether they can explicitly report on the pretend status of their imagined scenarios, and whether they understand the difference between an object's true and pretend identities. But children are not just pretenders. They are also avid consumers of fictional stories and fictional characters. Do children understand that these event sequences and entities do not exist in reality, as they understand that pretend identities do not correspond to reality?

Children's ability to make this distinction may be as well developed for stories and characters as it is for pretend identities because both are forms of imagination and share many features in common. However, it is also possible that there are differences between these two types of imaginative activities, based on the role of children's creative control in these two cases. When children pretend, they are aware of their ability to direct the progress of a pretend episode, and often do so through use of stage directions (e.g., Bretherton, 1989; Scarlett & Wolf, 1979). But fictional stories are usually outside of the child's control, having been created by an author and presented in the form of a book or movie. Additionally, the flow of events within a story is rigid, obeying the author's whims, rather than flexible, conforming to the child's desires. Finally, creating a counterfactual identity for an object or creating a pretend object out of thin air can vividly bring to mind the object's true identity, drawing children's attention to the fact that the imagined object does not actually exist. But stories, particularly those in movies, are often presented in highly realistic ways, and hence might confuse

children about the reality status of the events and entities that they depict.

Despite these concerns, our best current evidence suggests that children do not experience imagination–reality confusions when it comes to fictional stories or characters. Most of the studies that have investigated this issue have asked children to report explicitly on the reality status of fictional episodes or characters by asking children to provide explicit labels or to sort pictures into “real” and “make-believe” boxes. By the age of four, children are able to respond accurately and consistently on these tasks, although these explicit reports pose some difficulty for younger children (e.g., Dierker & Sanders, 1996; Samuels & M. Taylor, 1994; B. J. Taylor & Howell, 1973). For example, Morison and Gardner (1978) tested the fiction–reality distinction with children in kindergarten and in second, fourth, and sixth grades. The children were given a set of cards with pictures of real and fictional entities (e.g., a knight or a fairy) and were asked to sort them into reality and fantasy categories. Children at all age groups were extremely good at this task, rarely confusing reality for fiction. The few mistakes that children did make were in saying that fictional characters were real, rather than in saying that real people were fictional. In a similar task with younger children, Wellman and Estes (1986, Study 3) asked three- through five-year-olds about the existence of fictional entities, such as a dog that flies. They were also asked whether they could imagine or dream about such an entity. Children in this study were highly accurate on the reality status question; 99 percent of children in each age group answered correctly. They were also highly accurate in reporting that they could imagine or dream about such events, even though the events themselves were not real.

Children are also accurate when categorizing specific characters from publicly available stories, not just generic entities. Skolnick and Bloom (2006b) asked children to explicitly label pictures of fictional characters, like Nemo the clownfish from the movie *Finding Nemo*, as real or make-believe. Four-year-olds were as accurate as adults on this task. Woolley and Cox (2007) read children unfamiliar storybooks and asked whether the main character in each book was real and whether the events in the books did or could actually happen. Even the three-year-olds in this study were good at claiming that the characters did not actually exist and the events did not actually happen, although only by four years were they accurate at claiming that realistic but fictional story events could possibly happen

in reality. In addition, children understand the distinction between fictional characters and historical figures, judging that even individuals who look and behave differently from them can be real, and vice versa (Corriveau, Kim, Schwalen, & Harris, 2009).

Even though children tend not to confuse real and fictional entities when asked directly, they do not necessarily see these as natural categories into which to sort entities. In Morison and Gardner's (1978) study, the same children who correctly separated real from fictional entities when asked to do so did not spontaneously sort these entities into these two categories when asked to put together the items in a triad that go together. During this free-sorting task, children were more likely to create functional pairs (e.g., witch with broom) than fantasy-based pairs (e.g., witch with fairy), and their justifications for these pairings rarely invoked the entities' fictional status. However, children demonstrate a similar tendency to sort items thematically, rather than taxonomically, across a variety of tasks (e.g., Smiley & Brown, 1979), so their performance here may not indicate any particular difficulty with seeing the commonalities among fictional entities.

In a variation on these tasks, Sharon and Woolley (2004) asked children about fictional properties in addition to fictional entities. They gave children the option of saying that they were not sure about the entity's or property's status, in addition to offering the standard "real" and "fictional" response options. In contrast with previous work, Sharon and Woolley found that only half of the fictional entities were categorized correctly by their preschool-age participants, although performance did improve with age. The children were better at the property task, attributing fantastical or impossible abilities to the fictional characters and not to the real people. Although it is unclear why these results are different from the general pattern of success at the fiction–reality distinction at four years of age, two variables are suggestive. First, the inclusion of a "not sure" option in this task but not in others might have changed children's responses. Children might be able to categorize entities accurately if forced to choose between "real" and "fictional," but experience a degree of uncertainty about these judgments, which was captured in this study by the "not sure" choice. Second, Sharon and Woolley's test set of entities included Santa Claus and the Easter Bunny, which many children are encouraged to believe to be real. Judgments about these entities are not likely to reflect children's overall knowledge about real and fictional characters.

The Development of the Imagination–Reality Distinction

The studies reviewed thus far have shown that children tend to have remarkable success at distinguishing both pretend sequences and fictional entities from reality, even at a very young age. Although children do demonstrate early success with understanding the imagination–reality distinction for both of these types of imaginative processes, this understanding improves with age. For example, Samuels and Taylor (1994) asked a group of older three-year-olds and a group of five-year-olds to categorize pictures of real and impossible events (such as a woman picking an apple off a tree or a moose mixing batter in a bowl) as real or pretend. They found that the younger children tended to claim that both types of events could occur in real life, whereas the older children accurately discriminated between the two types. Harris et al. (1991, Study 1) report a similar developmental progression, whereby four-year-olds made more mistakes than six-year-olds in categorizing real and imaginary objects. In Morison and Gardner's (1978) study of kindergartners and second, fourth, and sixth graders, the children in the youngest age group made the most classification errors, and these errors decreased in the older age groups. As a final example, Woolley and Cox (2007) tested three-, four-, and five-year olds' understanding of the reality status of characters in fiction books. In their task, even three-year-olds successfully reported that these characters were "only in the book," but performance still improved with age.

In all of these studies, children were asked explicitly to categorize entities or events as real or fictional. But children also interact spontaneously with imaginary entities, especially in their pretend play. Do these interactions also show an increase in understanding of the imagination–reality distinction over time? Or are children merely becoming better at reporting explicitly on this difference without any change in their behavior? These issues are bound up with questions of whether and under what circumstances children confuse imagination with reality, but the basic answer is that children's behavior changes over development, just as do their explicit reports.

DiLalla and Watson (1988) investigated this issue explicitly, outlining a stage theory for children's understanding of pretense–reality distinction. In this study, an experimenter interrupted a joint pretense session with children ranging in age from two-and-a-half to six years of age, by changing the

pretend identity of a prop, leaving the room, and changing her own identity within the game. The youngest children had some difficulty dealing with these interruptions, as measured by their trouble in returning to the pretend game following an interruption. The ability to smoothly resume the game following the interruptions increased with age. From these results, DiLalla and Watson argue that children aged three and younger have only a fuzzy boundary between reality and pretense, which later develops into a rigid boundary and finally into an integrated boundary, allowing children to separate reality from the pretend situation and to move fluidly between them as needed.

These studies show that children become better at understanding and navigating the imagination–reality distinction as they get older, but they do not explain why. One suggestion for the reason behind this change comes from a study by Woolley and Van Reet (2006), which investigated the ways in which contextual information affects children’s understanding of a novel entity. In this study, three-, four-, five-, and six-year-olds were introduced to novel entities in three conditions: fantastical, scientific, and everyday. The difference between these conditions was in the context that surrounded the reference to the novel entity; for example, “Dragons/Scientists/Children try to collect Xs.” Participants were then asked make imagination–reality judgments about these novel entities. The three-year-olds’ judgments were not affected by context, but those of the older children were. By age four, children trended toward judging the entities introduced in the scientific context as real more often than those introduced in the fantastical context, although judgments in neither of these conditions differed from those made about entities introduced in the everyday context. By age five, children’s judgments showed a significant effect of context, judging entities introduced in the scientific and everyday contexts as real more often than entities introduced in the fantastical context. These results suggest that one mechanism for children’s developing ease at making the imagination–reality distinction is their developing ability to integrate contextual cues and information about a source with new facts that they learn (see also chapter 3; Jaswal & Malone, 2007; Koenig, Clement, & Harris, 2004).

Finally, all of these studies report only on differences among age groups, with older children performing more accurately overall than younger children. These aggregate data make it difficult to determine the underlying cause of this developmental change.

One possibility is that there is a general trend toward greater accuracy as children develop. All, or nearly all, children may start out somewhat tentative about the distinction between reality and imagination and become more confident or more willing to report on this distinction as they get older. A different possibility is that there is a bimodal distribution of abilities, such that some children are always accurate at making the imagination–reality distinction and these children become more prevalent in the older age groups. On this view, the development of the ability to make the imagination–reality distinction is sudden, rather than gradual. More work is needed to determine which of these two possibilities more accurately reflects children’s performance.

Children’s Imagination–Reality Confusions

The evidence reviewed thus far shows that children are good at distinguishing both pretend sequences and fictional stories from reality. However, there are situations in which children confuse imagined events with reality (see Bouchier & Davis, 2002, for review). One classic example comes from a study by Harris et al. (1991, Studies 3 and 4). Children in these studies were introduced to two empty boxes. They were asked to pretend that one box contained a puppy that would lick their finger if they put it in the box, and that the other box contained a monster that would bite their finger if they put it in the box. As mentioned, children were good at explicitly reporting that neither the puppy nor the monster was real. But their behavior tells a different story. They were reluctant to approach the “monster” box, whether the experimenter was in the room watching them or not, and were much more likely to approach the “puppy” box.

Later studies have replicated and expanded on this effect. For example, Johnson and Harris (1994) asked three-, five-, and seven-year-olds to pretend that there was either a fairy (magical entity) or an ice cream (real entity) in an empty box. Although children confirmed with a high level of accuracy that their pretending had not actually made anything appear in the box, over half of the children in all age groups approached and looked into the box when left alone, indicating that they thought that there was something in the box. Similar results were obtained by Bouchier and Davis (2000b, Study 2), who used clear as opposed to opaque boxes in this task, controlling for the possibility that the emptiness of the boxes was not salient enough to the children. Five- and six-year-olds in this study were

still more likely to open the box in which they had pretended there was positive entity before or instead of the box in which they had pretended there was a negative entity, suggesting that the mere availability of contradictory real-world information does not prevent children from behaving as though these entities were real.

Imagination–reality confusions are most prevalent in those studies that ask children to pretend there is something in an empty box, but they occur in other situations as well. A series of studies by Eugene Subbotsky (e.g., 1992, 2004) presented children with situations in which magical transformations seemed possible or likely, and then observed children’s reactions to these situations. For example, Subbotsky showed children a “magic box” that can make objects disappear or transform when the correct magic words are said. Despite their explicit denials that this is possible, children left alone with the box used the magic words to try to get the box to work (Subbotsky, 1985). It is possible that this behavior does not necessarily reflect an imagination–reality confusion because the children were left alone with nothing else to do and might have tried the magic words just in case they worked, not actually believing they would. Although he acknowledges this possibility, Subbotsky reports that many children would try saying the magic words over and over and seemed genuinely disappointed when the box failed to work (see chapter 4 for further discussion of research by Subbotsky).

All of these studies have used live-action situations to demonstrate imagination–reality confusions. But it is important to note that such tasks do not always lead to these kinds of confusions, and there are some studies of children’s behavior toward pretend objects that demonstrate a clear distinction between pretense and reality. One of the best examples of this is a study by Woolley and Phelps (1994), who used a similar design to Harris et al. (1991). Three- and four-year-olds in this study pretended that an ordinary object, like a pencil, was in an empty box. To explicitly measure their understanding, the children were asked whether this object was really in the box. To implicitly measure their understanding, a second experimenter entered the room and asked the child in earnest to help her find a pencil. Although some of the younger three-year-olds explicitly claimed that the pretend object had become real, almost none of the children at any age directed the second experimenter toward the box to find a pencil. Contrary to Harris et al. (1991) and other studies like it, this response

tendency indicates that children did not believe that the imagined entities were real. In a similar demonstration, Golomb and Kuersten (1996) found that children resisted breaking the pretense–reality boundary in play when an experimenter acted in literal ways on pretend props. They introduced several violations of the pretense–reality boundary into a play sequence; for instance, by stepping over a blue cloth that represented a wide river in the pretense, or by taking a real bite out of a Play-Doh cookie. Children at ages three, four, and five noticed and commented on these violations and even objected to them, suggesting that they distinguished the pretend events from real events.

Finally, observing children’s responses to boxes with imagined entities in them might not provide an accurate measure of their tendency to confuse pretense with reality. For example, Golomb and Galasso (1995) failed to replicate Harris et al. (1991), finding that when children were given the option of engaging in other activities besides opening the boxes, they tended not to approach either box, regardless of valence. More strikingly, Bouchier and Davis (2000a, Study 2) found that about one-third of the four- to six-year-old children in their study chose to approach and look into closed boxes during an experimenter’s absence, but before the children had pretended that anything was inside them. These responses suggest that children’s tendency to open the boxes in these types of studies has more to do with simple curiosity, rather than a belief that the objects created by their imagination have become real.

The Role of Emotions

Taken together, these results indicate that children may sometimes be confused about the nature of imagined objects, although these confusions do not occur all the time. Thus, it is not the case that children are either perpetually confused or perpetually clear about this distinction between imagination and reality. Rather, it is more likely that several features of certain kinds of pretend situations are implicated in inducing imagination–reality confusions.

One of the most important of these features is emotions. Children are more likely to mis-categorize pretend or fictional entities that have a strong emotional valence, particularly a negative emotional valence (e.g., Bouldin & Pratt, 2001; Carrick & Quas, 2006; Woolley & Phelps, 1994). Intuitively, worries about children having difficulty separating imagination from reality tend to occur when they are afraid—about monsters under their beds,

for example. Also, recall that Harris et al. (1991) contrasted a scary monster with a friendly puppy, finding that children tended to avoid the monster and approach the puppy. Bouchier and Davis (2000b, Study 3) teased apart whether this behavior was caused by a tendency to approach the positive entity or avoid the negative entity by asking children to either open both boxes or throw both away. Children chose to open both boxes, suggesting that their desire to approach the positive entity trumped their desire to avoid the negative entity.

These kinds of emotion-based errors do not only occur with pretend situations. Samuels and Taylor (1994) asked older three- and five-year-olds to categorize a set of pictures as “real” or “pretend.” Half of the pictures depicted neutral events, and half depicted negatively emotionally charged events. For the neutral events, children tended to say that these could occur in real life, but for the negative events, they tended to say that these could not occur in real life. That is, children tended to incorrectly deny the possibility of events that they found upsetting. Further, children who said they were not scared of the negative pictures categorized them more accurately than those who claimed to be scared. In a similar demonstration, Dierker and Sanders (1996) asked four- and five-year-olds to categorize happy, neutral, and frightening pictures of real and impossible events. Children were generally accurate at distinguishing the real pictures from the fictional ones. When they did make errors, they tended to mis-categorize real events as fictional, a pattern that was particularly prevalent for the frightening stimuli.

Carrick and Quas (2006) also tested the effect of emotions on children’s categorization abilities by showing three- through five-year-olds pictures of real and fictional events that varied in emotional valence along an approach–avoidance axis as well as a positive–negative axis. Children were asked to categorize pictures of happy (approach–positive), frightening (avoid–negative), angry (approach–negative), and neutral events and were asked how each picture made them feel. Carrick and Quas found an effect of emotional valence whereby children were more likely to claim that positive and neutral events could happen and that frightening or angry events could not, regardless of the event’s true reality status. That is, as in previous studies, children’s errors were in mis-categorizing positive imagined events as real and negative real events as fantastical. Additionally, children’s individual ratings of the stimuli made a difference to their imagination–reality judgments

of these individual items: Events that were judged as more negative were also judged as less likely to happen.

These results, taken together with children’s responses to negatively charged pretend stimuli, suggest that telling the difference between reality and imagination can be made more difficult by the presence of such stimuli. But there is some reason to be skeptical that children’s categorization difficulties in the face of negative stimuli represent true imagination–reality confusion. Even adults experience fear at horror movies, and may even act to reduce this fear, like checking the closets before going to sleep or leaving the lights on. These actions could be taken as evidence of imagination–reality confusion, but would more charitably be interpreted as emotional contagion. The tendency of pretend scenarios to induce this kind of emotional contagion, as illustrated by children’s avoidance of the box with the “monster” inside, thus may not be enough to demonstrate that children are genuinely confused about the difference between reality and imagination (see Gergely, 2002; Harris, 2002; Ruffman, 2002; Woolley, 1997).

Finally, there is an interesting contrast between the evidence for imagination–reality confusions gathered from pretense tasks and those that rely more heavily on explicit reporting. In pretense tasks that employ some variation on the monster-in-the-box scenario, children’s confusions involve behaving as if the imaginary monster were real, mistakenly categorizing an imagined entity as real. But in explicit report tasks, children often make the opposite mistake, claiming that even real-world scary entities are only imaginary. In one case, strong negative emotions push children to crediting the possibility that imagined entities can be real; in the other case, strong negative emotions push children to respond based on their desire that some real entities are only imaginary. This contrast suggests that there may be two different mechanisms governing these two types of confusion. Children’s explicit reports may be governed by wishful thinking, whereas their actions toward imagined entities may be governed by a kind of “just in case” mechanism—perhaps the same one that leads adults to avoid drinking sugar water from a glass labeled “cyanide” (Rozin, Millman, & Nemeroff, 1986).

Other Situational Factors

Although emotions play the most prominent role in children’s imagination–reality confusions, children are also likely to make mistakes about the

reality status of an entity when the possibility of the pretend event has been made salient. This is known as the availability hypothesis (based on Tversky & Kahneman, 1973; see Bouchier & Davis, 2000b, 2002). When children imagine something, the cognitive availability of this event is increased: The event is currently in mind, and will come to mind more easily in the future. This increase in availability leads to an increase in children's intuitive sense of the probability of this event. Simply put, thinking about something makes it seem more likely to happen, regardless of the fantasy content of the event.

Thus, when an experimenter asks a child to imagine an event, this event becomes more salient and cognitively available, and could make the child more likely to report that the event can actually happen. This process can help to explain why children who imagine entities in empty boxes may later act as if these entities are real (e.g., Harris et al., 1991; Johnson & Harris, 1994; Woolley & Wellman, 1993). In a direct test of this process, Bouchier and Davis (2000a) asked a group of four- to six-year-olds to pretend that there were positive and negative entities in empty boxes, as in previous studies, and asked a separate group of four- to six-year-olds to label the boxes with pictures of positive and negative entities instead of pretending. When the experimenter was absent, children in the two conditions were equally likely to open the boxes. This behavior suggests that the existence of non-real entities can be made cognitively available by processes other than pretending, and that availability played a role in previous studies that have asked children to pretend about entities in boxes. However, Bouchier and Davis (2000b) failed to find evidence that availability was a particularly strong contributing factor to children's behavior toward pretend entities. They asked five-year-olds to pretend that something was in a box, and then either asked the children to open the box to confirm it was empty (Study 1) or engage in the same pretense about a transparent box (Study 2). These manipulations were meant to reduce the influence of availability because both made it clear to the child that the pretended entity was not actually in the box. But children behaved in the same way toward these boxes as they did before they opened them or when they were opaque, indicating that mere availability is not necessarily enough to encourage children to believe in imaginary entities. This is only one test, however, and it is still possible that availability plays some role in children's imagination–reality confusions.

Finally, and not surprisingly, children tend to demonstrate more imagination–reality confusions when they have been given evidence that pretend events can possibly become real. Much of Subbotsky's work has this character. His presentations of stimuli are like magic shows, demonstrating impossible events to children through use of tricks and then asking them to reason about these events. For example, Subbotsky (1990) showed children a magic car that appeared to move on its own, and claimed that he was moving it via telekinesis. When left on their own with the car, children tended to try to make it move with their minds as well. To take another example, Lee, Cameron, Doucette, and Talwar (2002) tested whether children would believe the implausible statement that a ghost came out of a book and broke a glass. When presented with a real broken glass as evidence of the ghost's efficacy and an adult confederate who claimed that the ghost had done it, three- and four-year-olds tended to believe this claim, although older children were more skeptical.

Children's beliefs in fantasy characters like the Tooth Fairy and Santa Claus likely proceed by similar mechanisms because adults often take great pains to convince children that these fantasy beings exist (see Clark, 1995; see chapter 5). Woolley, Boerger, and Markman (2004) demonstrated the ease with which children can be encouraged to believe in such beings by creating a new one: the Candy Witch, who comes on Halloween to take children's leftover candy and replace it with a toy. Children in a kindergarten class were introduced to the idea of the Candy Witch, and half of the children in the class actually did have their candy replaced by a toy. After Halloween, most of the children reported believing that the Candy Witch did exist, but those who had been "visited" were even more likely to believe. Thus, when adults or other trusted authorities make it look as if the impossible can happen, children tend to believe them. But the best and most charitable interpretation of these confusions is as evidence that children believe what they are told and what they see for themselves, not as evidence that their abilities to discriminate reality from imagination are generally faulty.

Individual Differences

The discussion thus far has considered factors of the situation or the task that can induce imagination–reality confusions in children. But there are also individual differences among children that can

lead to such confusions, independent of any features of the method.

For one, children differ from each other in their fantasy orientation—in how interested and involved in imaginative endeavors they are. This is usually measured by asking children about their engagement in imaginative activities (e.g., “Do you like to pretend?” “Do you talk to yourself when you are lying in bed?”) (see Singer, 1961; Singer & Streiner, 1966; Taylor, Cartwright, & Carlson, 1993). At this point, unfortunately, it is not entirely clear how fantasy orientation relates to children’s abilities to make the imagination–reality distinction. On the one hand, children who have more interest in imaginative play likely have more experience traveling between imagination and reality, and hence might be more likely to make an accurate distinction. On the other hand, these children are precisely the ones who are interested in engaging with non-real events, which might make them more willing or apt to blur the lines between imagination and reality (see Richert, Shawber, Hoffman, & Taylor, 2009, for a similar argument). One hint that the former option is more likely to be the case comes from recent work on children’s ability to learn a novel solution to a problem in a fictional story and then transfer this solution to an analogous real-world problem. Children who scored higher on measures of fantasy orientation were less likely to transfer the solution, but only when the stories were fantastical, not when they were realistic (Richert & Smith, 2011). This result suggests that children with a higher fantasy orientation may maintain a stricter boundary between reality and imagination than their peers, although more research is needed to substantiate this conclusion.

Another relevant difference between groups of children is that some children have imaginary companions, whereas others do not. As with fantasy orientation in general, there is reason to think that children with imaginary companions might behave differently than their peers without imaginary companions when it comes to distinguishing imagination from reality. This issue was investigated directly by Bouldin and Pratt (2001), who tested children with and without imaginary companions on their reactions to the potential presence of a monster. The four- to seven-year-olds in this study were prompted with the idea of a monster by being asked to help an experimenter describe a monster for a story she was writing. They then saw a silhouette of a monster projected briefly on the side of a tent in the room. The children were then allowed by play

freely for 90 seconds, during which time they could explore the tent or play with other toys while the experimenter “wrote her story.” Their behavior during this period was observed, and they also engaged in a post-test interview that assessed the extent to which they believed a monster was present in the tent. Bouldin and Pratt found that children with imaginary companions were more likely to spontaneously say they had seen a monster during the free play period, and they were more likely to explicitly report they thought there was a monster in the tent during the post-test interview. These results suggest that children with imaginary companions are at least more willing to entertain the possibility of an imaginary event being true, although there was little evidence for imagination–reality confusions among children in either group. As with the question of the effect of general fantasy orientation on the imagination–reality distinction, more research on this topic is needed, and it is not yet clear whether having an imaginary companion is beneficial or detrimental to children’s understanding of this distinction.

Finally, it is possible that children differ as to how much credence they give to the possibility that imagined or fictional events can become real. Some children might be credulous by nature, willing to believe in the reality of imagined events given even scant evidence, whereas others might be skeptical, requiring more evidence to believe in the possibility of imagined events. This was one of the explanations proposed by Harris et al. (1991) as the reason why children sometimes acted as though they believed an imagined monster was real, even though their explicit reports indicated that they understood it was not (see also Bouchier & Davis, 2000b; Johnson & Harris, 1994). On this explanation, those children who are more credulous should be more likely to report that imagined entities could possibly become real and act in accordance with this possibility—for example, by avoiding the box with the “monster” inside. Skeptical children should be more able to report accurately on the imaginary status of pretend entities. However, in previous work, the existence of these two groups of children has been inferred from the data rather than examined as a variable in its own right. Future work should develop instruments to screen for these two types of responses to imagined situations and collect more firm evidence of the influence of these two different attitudes on children’s behavior.

Although this discussion has treated these individual difference factors separately, it is highly likely they are inter-correlated. For instance, children

with imaginary companions tend to score higher on measures of fantasy orientation (e.g., Bouldin & Pratt, 2001; Taylor, Cartwright, & Carlson, 1993), although it is not yet known whether or how either of these factors might influence or be influenced by children's natural levels of skepticism. It is also not yet known which of these factors is primary: Are children naturally credulous or skeptical, which leads them to have a particular type of relationship with the imagination? Or are children naturally more or less fantasy-oriented, which influences their levels of credibility? In addition, it is not yet known how strong these individual difference factors are in predicting imagination–reality confusions or how they might interact with the situational factors reviewed in the preceding. For example, differences between the behavior of credulous and skeptical children could become more or less pronounced depending what other factors are in play. When there is physical evidence that the pretend entity does not exist (as in the transparent box manipulation used in Bouchier & Davis, 2000b), or the emotion levels are low (as in Woolley & Phelps, 1994, in which children imagined everyday objects rather than monsters), these differences should be slight. But the differences between these groups of children are likely to become more pronounced in situations that could lend themselves to a credulous point of view, such as when there is no concurrent evidence that the imagined monster does not exist.

In summary, although children can generally distinguish pretend and story events and entities from reality starting at a very early age, there are situational and individual factors that can lead to systematic errors in making this distinction.

The Source Monitoring Framework

Knowing that children can distinguish imagination from reality does not necessarily show how they are able to do so. It may be possible to gain some insight into this question by looking at research on memory processes. Memories, like fictional events, must be distinguished from current reality. Further, both adults (see Loftus & Pickrell, 1995) and children (see Bruck & Ceci, 1999) can be induced to believe that events that never happened did actually happen—essentially, a form of imagination–reality confusion. A brief examination of this particular phenomenon, known as false memories, can help to explain what factors may influence children to judge different events as real or imaginary.

One of the most prominent unifying theories that treats the issue of false memories is the source

monitoring framework (Johnson, 1988; Johnson & Raye, 1981, 2000). This theory is discussed in detail in chapter 7. Briefly, this theory's main claim is that the process of memory is highly reconstructive: When people search through their memories, they activate related information, including information about the sensory and emotional content of a memory, meta-memory assumptions, and general prior knowledge. People use this type of information to decide whether an event actually happened, or they imagined it, dreamed it, or heard about it from someone else. To put this claim in the negative, memories do not come with tags indicating whether they are true or false, or where they came from. The process of tagging, insofar as there is one, is an active, on-line process that is an integral part of memory retrieval. When deciding whether a memory is true or false, the content and quality information that is activated along with the memory thus becomes crucial. A series of studies has shown that, in comparison with true memories, false (or imagined) memories tend to have less detailed sensory information as well as relatively impoverished emotional content (see Johnson, Hashtroudi, & Lindsay, 1993, for review).

These facts can help to explain how children tell the difference between imagination and reality. Just as true and false memories have a certain pattern of sensory and emotional detail associated with them, imagined events should also be associated with a different pattern of sensory and emotional detail. For example, a true memory might have far more perceptual detail than a false memory, which may have more than the memory of an imagined experience.

The source monitoring framework can additionally help to sharpen questions about the development of children's ability to make this distinction. For instance, older adults use slightly different processes from younger adults to differentiate true from false memories; older adults tend to lend more weight to the emotional content of a memory when deciding whether it is true (Johnson & Multhaup, 1992). Given that there is a developmental shift at this end of the age spectrum, it is likely that children might also use a different set of criteria than adults for differentiating reality from imagination. As discussed in the previous section, one of the key factors in children's imagination–reality confusions is emotions: Children are more likely to behave as if imagined entities are real if these entities have a strong negative emotional valence. These results suggest that children, like older adults, put more

weight on the emotional content of an event when deciding whether it is real or imaginary.

Perhaps most interestingly, using the source monitoring framework to understand the imagination–reality distinction makes a strong claim about the nature of the mind: The underlying mental representation for real and imagined events is in the same mental currency (see also Bosco, Friedman, & Leslie, 2006; Loftus, 1979; Nichols, 2004). This means that these categories must be differentiated by their associated details, the cognitive operations associated with them, and general content knowledge, and not by any factors that are intrinsic to their reality status. This explains why imagination–reality confusions can occur at all because from the point of view of most of our cognitive processes, real and imagined events behave in the same way.

Children’s Abilities Beyond the Imagination–Reality Distinction

Children can readily distinguish reality from imagination, despite some isolated difficulties. Is this the extent of their abilities? What else might children understand about more advanced issues surrounding the imagination–reality distinction?

One interesting question to ask is whether children make only a binary distinction between reality and imagination, or they organize the many fictional stories they know and the many pretend games they play in a systematic manner. It is possible that children only distinguish reality from imagination, categorizing everything that is real as such and labeling everything that is not real as imaginary. This binary scheme correctly encapsulates everything real within the real world, but it incorrectly lumps together everything that is not real. In this scheme, the child’s imaginary companion, characters from different books and movies, and objects’ counterfactual identities might all coexist within a single fictional world with no further distinctions.

But children have a more subtle understanding of the imagination than this. Not only do they accurately separate imagined entities from reality, they additionally create separations within the realm of the imagination, separating multiple imagined episodes from each other. Children do this for fictional stories, judging that a character like *SpongeBob SquarePants* is fictional both to them and to a fictional character in a different story, like *Batman* (Skolnick & Bloom, 2006b). Children also do this for the pretend games they play, judging that the pretend identities of an object created in one game do not carry over into a second

game (Weisberg & Bloom, 2009; see also Wyman, Rakoczy, & Tomasello, 2009b). These results are striking because they show that children spontaneously impose structure on the category of fictional entities, even after separating these entities from reality.

Further, children’s understanding of fictional characters also includes an understanding of the ways in which these characters’ identities are shaped. Rhemtulla and Hall (2009) introduced children to a novel fictional character who had several distinguishing traits, either because of the nature of his character (Boris has a banana on his ear that he got when he was a baby) or the idiosyncratic history of the representation of the character (the picture of Boris has a banana on its ear because a friend drew it on the book). Children generalized the character-based properties, but not the representation-based properties, to a different representation of the character. These results suggest that children can reason abstractly about the nature of fictional characters and may be able to override spatiotemporal factors in their generalization of fictional properties.

When asking about children’s understanding of the imagination–reality distinction, it is important to consider that the line between reality and imagination is not always sharply drawn. Some events in fictional stories are clearly impossible, and children are good at categorizing these as such, claiming that they are merely fictional (Woolley & Cox, 2007) or would require magic to happen (Johnson & Harris, 1994). But when they are presented with improbable events that are not strictly impossible but are nevertheless outside of their experience, children ages six and younger tend to incorrectly judge these events as impossible (Shtulman & Carey, 2007; see also Shtulman, 2009; Weisberg & Sobel, 2012). By age eight, children can accurately categorize improbable events as possibly real, and only categorize as impossible those events that genuinely break real-world laws. Although more work is required on this issue, these results suggest that a full understanding of the nature of the imagination–reality distinction continues to develop even after children have demonstrated competence at making this distinction for the real and imagined events and entities they typically encounter.

Finally, it is worth noting that erecting an impermeable barrier between reality and imagination is often a mistake. Both children and adults can learn true, real-world information from imagined scenarios because most aspects of reality are preserved in imaginative episodes (see chapter 10;

Skolnick & Bloom, 2006a; Weisberg, 2009). Work on this topic has often focused on the negative impacts of media on children's real-world interactions, particularly violent or aggressive behavior. Famously, Albert Bandura's "Bobo doll" studies exposed children to a videotaped model behaving aggressively toward a toy, and found that children were later likely to emulate these actions (Bandura, Ross, & Ross, 1961, 1963; see also Bandura, 1971). More recent work in this vein has found that viewing portrayals of violence in the media has long-lasting and negative consequences for children's development and social interactions (Anderson et al., 2003; Huesmann, Moise-Titus, Podolski, & Eron, 2003; Kirsh, 2006). In addition, those children who tend to engage in violent pretend play have poorer executive control skills and demonstrate more difficulty on theory of mind tasks than their peers, although the direction of causality is not clear (Dunn & Hughes, 2001). These are examples of situations in which children allow inappropriate modes of interaction that they have seen modeled in a fictional context to influence them in real life.

But children can also learn mundane facts and even positive behaviors from fictional stories and other kinds of imagined episodes. Indeed, it has been argued that at least part of the utility of children's pretend play games is that these games allow children to try out roles and practice social interactions that will later help them to navigate real interpersonal situations and real emotions (e.g., Bretherton, 1989; Gopnik, 2009; Harris, 2000; Singer & Singer, 1990). Play therapy takes advantage of this aspect of play, using pretend scenarios to help children to express and work through relational and emotional issues (Axline, 1989; Landreth, 2002; see chapters 33 and 34). Much of children's literature is designed specifically to teach children moral lessons and facts that they are meant to apply in reality, not quarantine as merely imaginary. But do children understand that the imagination–reality distinction does not apply to all aspects of imaginary episodes, and that they can incorporate at least some information from pretend games and stories into their real-world background knowledge?

Relatively little work has been devoted to answering this question, but the few studies that have been conducted on this topic seem to show that children's explicit learning from fictional stories is fragile. For example, Ganea, Pickard, and deLoache (2008) used a storybook to teach 15- and 18-month-olds a novel word. These children engaged in a naturalistic reading of a storybook that included a novel

object name and were tested on their learning of this label and their generalization of it. Children in both age groups did learn the novel name, although the older children were somewhat better at this task and more likely to generalize (see also Preissler & Carey, 2004). But iconicity was an important factor in this study: Children performed better when they had seen a realistic line drawing of an object rather than a cartoon depiction. Richert et al. (2009) found a similar effect of realism in a series of studies that asked preschoolers to generalize a problem solution presented in a story to an analogous problem presented in real life. Although this transfer task was difficult in general, children were more likely to apply the solution when it was presented in a realistic than in fantastical story context (see also Richert & Smith, 2011).

Work with older children shows that children can transfer facts from a fictional story to a real-world situation. Fazio and Marsh (2008) read six- and seven-year-olds two stories, each of which contained some true and some false facts about the world. The children were then asked to respond to a general knowledge test, which included some questions about the facts that had been presented in the stories. They found that children of both age groups learned the facts from the fictional stories, answering more of the relevant questions on the test correctly if they had heard the fact in the story than if they had not. Children also learned misinformation from the stories, producing the incorrect fact as an answer more often if they had heard it in the story than if they had not.

In contrast, Mares and Acosta (2008) found that children failed to learn a moral from a simple story designed to teach about social relationships. Rather than generalizing the theme of the story, which was about tolerance to people with disabilities, children preferred to draw narrow, story-specific lessons, like "be nice to three-legged dogs" (see also Narvaez, 2002; Narvaez, Gleason, Mitchell, & Bentley, 1999). But given that children are at least occasionally willing to transfer object labels, problem solutions, and facts from fictional stories into reality, children's difficulty in transferring moral lessons may owe more to their difficulties in extracting general themes from narratives, rather than to difficulties in navigating the imagination–reality boundary.

These studies of children's importation of information from a fictional context have all used explicit measures to study whether children have retained and can appropriately retrieve information from a

fictional story. And although a recent review suggests that children do engage in some implicit transfer of prosocial attitudes and actions from fictional stories to real-life situations (Mares & Woodard, 2005), more work is needed to expand on these findings. In particular, future studies should focus on the more subtle impacts that imaginative scenarios can have on children's behaviors and ways of interacting with the world.

Conclusion

Understanding that there is a distinction between what is real and what is imagined is an important step in the development of children's imaginative abilities. Current evidence suggests that this distinction is in place by around age three, enabling children to discriminate between the real and pretend identities of objects and also to explicitly separate real from imagined events and entities when asked. Children also organize multiple fictional worlds beyond this binary distinction and, by the time they enter grade school, understand the more subtle issues of probability and transfer of fictional information into reality.

Despite these successes, children do demonstrate some imagination–reality confusions, as measured by their implicit reactions to certain kinds of pretend scenarios and their occasionally incorrect explicit reports about fictional entities. One might conclude that these confusions reflect a fundamentally immature capacity to distinguish imagination and reality. However, on balance it seems more accurate to say that children's imagination–reality distinction is well developed but can be influenced by various features of the task measuring it. Strong negative emotions can lead children to act as if a pretend entity has become real, as can increased cognitive availability and the encouragement of a trusted adult. Similarly, children may differ in the strength of their division between imagination and reality, and individual difference variables such as fantasy orientation, imaginary companions, and natural levels of skepticism can sway children's reports on and reactions to imagined situations. But cases in which children make errors in properly separating imagination from reality do not reveal particularly strong differences between children and adults. Rather, as Woolley (1997) concludes, the difference between children and adults likely lies in task demands and in children's relatively lesser experience and knowledge, rather than in any radically different cognitive processing of imagined information.

Future Directions

There is much that still remains unknown about children's understanding of the distinction between imagination and reality. Some areas that are ripe for investigation have been mentioned throughout the chapter, but here the focus is on several of the broader areas that are underserved by the current literature.

Origins of the Imagination–Reality Distinction

One major topic about which very little is known is the origins of the imagination–reality distinction, particularly as concerns pretend play. Children can produce and comprehend pretend sequences from a very early age, starting around 15 to 18 months (e.g., Fein, 1981; Harris & Kavanaugh, 1993; Onishi, Baillargeon, & Leslie, 2007). But do they understand the nonliteral nature of pretend actions at this age? If so, what is the nature of this understanding? If not, when and how does this understanding first arise?

One possibility is that infants and very young toddlers do not have a concept of impossibility or fictionality from the beginning. They may see a pretend act, like someone pretending to drink water out of an empty cup, and interpret it as merely an impoverished or strange instance of a true action. At this age, it is their noticing of the difference between this action and typical, serious actions that leads to their enjoyment of play, rather than any understanding that these actions are of a qualitatively different character than the typical actions.

A different possibility is that infants from the very earliest ages are equipped with the cognitive machinery to understand that some actions take place in a fictional world rather than the real world. From the very first time they witness a pretend action, they may understand its pretend nature in some way. In this view, what changes as children develop is the ability to verbally express their understanding of this distinction, rather than the understanding itself. Careful observational and experimental studies of young toddlers and infants can help to clarify the origins of the imagination–reality distinction and would contribute greatly to our knowledge about this distinction in childhood.

Differences Among Different Imaginative Abilities

A second major issue that warrants further attention is the question of whether the imagination–reality distinction is different for various types

of imaginative endeavors. Children play pretend games, hear and create fictional stories, and reason counterfactually, all of which involve imaginative processes. The literature on this topic has generally suggested that the imagination–reality distinction is made in the same way for all of these types of imaginative processes, but this is not necessarily the case. Children might come to understand this distinction first through their own play because this is developmentally before their creation of stories and involves their own agency. Later, they may use this understanding to bootstrap into making an imagination–reality distinction for other forms of fictional thinking. It is also possible that children have a complete understanding of the nature of the imagination from their earliest play experiences, leaving no gap between their understanding of the imagination–reality distinction for pretend games and for stories or counterfactuals. Or, children might lack any deep understanding of this distinction until somewhat later in development, at which point the distinction might be more or less strong for various types of imaginative endeavors. It is not possible at this point to choose among these options, partially because research on the imagination–reality distinction has tended not to look at pretend games, fictional stories, and counterfactuals within the same study or even with the same methods. Direct comparisons of children’s ability to understand counterfactual identities in play with their abilities to categorize real and fictional entities will help to resolve this issue.

The Imagination–Reality Distinction for Counterfactual Scenarios

Along with this comparative research, it would be helpful to learn more about how children think about the imagination as applied to simple counterfactual scenarios, such as the statements in counterfactual syllogisms. Although it is generally agreed that thinking counterfactually and creating pretend scenarios and fictional stories involve the same or extremely similar cognitive abilities (e.g., Amsel & Smalley, 2000; Gopnik, 2009; Lillard, 2001; Skolnick & Bloom, 2006a), studies of the imagination–reality distinction have tended to focus on pretending and stories without considering counterfactuals as an equivalent type of imaginative process. Conversely, the vast majority of the work on explicit counterfactual reasoning in childhood has asked whether children can evaluate counterfactual statements (e.g., “what would have happened if...”, see Dias & Harris, 1990; Harris, German, & Mills,

1996) without considering whether children separate these types of counterfactual statements from reality (see chapter 21).

If children have a full understanding of the differences between reality and imagination, it is likely that this understanding extends to counterfactual statements as well. But the types of counterfactuals presented in developmental studies tend to be more impoverished than fictional stories or pretend episodes, and they also tend to be more similar to reality than these other two types of fictional world. These considerations suggest that children may struggle to understand counterfactual statements and scenarios as fictional as readily as they do games and stories. Future research should explore the nature of the imagination–reality distinction for counterfactual scenarios and should explicate the similarities and differences between these scenarios and pretend play games and fictional stories. Indeed, one of the intended contributions of this volume to the literature is to bring together discussions of the topics of counterfactuals, pretend play, and fictional stories that are too often studied separately.

Developmental Change

One final issue that requires further research attention is the question of developmental change. Why do children get better at making the imagination–reality distinction over time? Does this developmental progression occur gradually or suddenly? Is this simply a matter of children getting better at reporting on the distinction, or does something fundamental about their understanding of the distinction change over time? The answers to these questions are related to the answers to the questions about the origins of the distinction previously discussed, as the way in which the ability to make the distinction arises will surely shape its developmental trajectory.

Further Reading

- Bourchier, A., & Davis, A. (2002). Children’s understanding of the pretence–reality distinction: A review of current theory and evidence. *Developmental Science*, 5(4), 397–413.
- Harris, P. L. (2000). *The work of the imagination*. Oxford, UK: Blackwell.
- Mitchell, P., & Riggs, K. J. (Eds.). (2000). *Children’s reasoning and the mind*. Hove, UK: Psychology Press.
- Roth, I. (Ed.). (2007). *Imaginative minds: Concepts, controversies and themes*. Oxford, UK: Oxford University Press.
- Subbotsky, E. V. (1992). *Foundations of the mind: Children’s understanding of reality*. Cambridge, MA: Harvard University Press.
- Woolley, J. D. (1997). Thinking about fantasy: Are children fundamentally different thinkers and believers from adults? *Child Development*, 68, 991–1011.

References

- Amsel, E., & Smalley, J. D. (2000). Beyond really and truly: Children's counterfactual thinking about pretend and possible worlds. In P. Mitchell, & K. J. Riggs (Eds.), *Children's reasoning and the mind*, pp. 121–147. Hove, UK: Psychology Press.
- Anderson, C. A., Berkowitz, L., Donnerstein, E., Huesmann, L. R., Johnson, J. D., Linz, D., et al. (2003). The influence of media violence on youth. *Psychological Science in the Public Interest*, 4(3), 81–110.
- Applebee, A. N. (1978). *The child's concept of story: Ages two to seventeen*. Chicago: University of Chicago Press.
- Appleyard, J. A. (1990) *Becoming a reader: The experience of fiction from childhood to adulthood*, Cambridge, UK: Cambridge University Press.
- Axline, V. (1989). *Play therapy*. New York: Churchill Livingstone.
- Bandura, A. (1971). *Social learning theory*. New York: General Learning Press.
- Bandura, A., Ross, D., & Ross, S. A. (1961). Transmission of aggression through imitation of aggressive models. *Journal of Abnormal and Social Psychology*, 63, 575–582.
- Bandura, A., Ross, D., & Ross, S. A. (1963). Imitation of film-mediated aggressive models. *Journal of Abnormal and Social Psychology*, 66(1), 3–11.
- Bosco, F. M., Friedman, O., & Leslie, A. M. (2006). Recognition of pretend and real actions in play by 1- and 2-year-olds: Early success and why they fail. *Cognitive Development*, 21(1), 3–10.
- Bouldin, P., & Pratt, C. (2001). The ability of children with imaginary companions to differentiate between fantasy and reality. *British Journal of Developmental Psychology*, 19, 99–114.
- Bourchier, A., & Davis, A. (2000a). Individual and developmental differences in children's understanding of the fantasy-reality distinction. *British Journal of Developmental Psychology*, 18, 353–368.
- Bourchier, A., & Davis, A. (2000b). The influence of availability and affect on children's pretence. *British Journal of Developmental Psychology*, 18, 137–156.
- Bourchier, A., & Davis, A. (2002). Children's understanding of the pretence-reality distinction: A review of current theory and evidence. *Developmental Science*, 5(4), 397–413.
- Bretherton, I. (1989). Pretense: The form and function of make-believe play. *Developmental Review*, 9, 383–401.
- Bruck, M., & Ceci, S. J. (1999). The suggestibility of children's memory. *Annual Review of Psychology*, 50, 419–439.
- Carrick, N., & Quas, J. A. (2006). Effects of discrete emotions on young children's ability to discern fantasy and reality. *Developmental Psychology*, 42(6), 1278–1288.
- Clark, C. D. (1995). *Flights of fancy, leaps of faith: Children's myths in contemporary America*. Chicago: University of Chicago Press.
- Corriveau, K. H., Kim, A. L., Schwalen, C. E., & Harris, P. L. (2009). Abraham Lincoln and Harry Potter: Children's differentiation between historical and fantasy characters. *Cognition*, 113, 213–225.
- 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.
- Dierker, L. C., & Sanders, B. (1996). Developmental and individual differences in children's ability to distinguish reality from fantasy. *Imagination, Cognition, and Personality*, 16, 25–49.
- DiLalla, L. F., & Watson, M. W. (1988). Differentiation of fantasy and reality: Preschoolers' reactions to interruptions in their play. *Developmental Psychology*, 24(2), 286–291.
- 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.
- Engel, S. (1995). *The stories children tell: Making sense of the narratives of childhood*. New York: Henry Holt and Company.
- Fazio, L. K., & Marsh, E. J. (2008). Older, not younger, children learn more false facts from stories. *Cognition*, 106, 1081–1089.
- Fein, G. G. (1981). Pretend play in childhood: An integrative review. *Child Development*, 52(4), 1095–1118.
- 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.
- Ganea, P. A., Pickard, M. B., & DeLoache, J. S. (2008). Transfer between picture books and the real world. *Journal of Cognition and Development*, 9(1), 46–66.
- Gergely, G. (2002). Some confusion about pretence-reality confusions. *Developmental Science*, 5(4), 417–419.
- German, T. P., & Nichols, S. (2003). Children's counterfactual inferences about long and short causal chains. *Developmental Science*, 6(5), 514–523.
- Golomb, C., & Galasso, L. (1995). Make believe and reality: Explorations of the imaginary realm. *Developmental Psychology*, 31(5), 800–810.
- Golomb, C., & Kuersten, R. (1996). On the transition from pretense play to reality: What are the rules of the game? *British Journal of Developmental Psychology*, 14(2), 203–217.
- Gopnik, A. (2009). *The philosophical baby: What children's minds tell us about truth, love, and the meaning of life*. New York: Farrar, Straus and Giroux.
- Gopnik, A., & Schulz, L. (Eds.). (2007). *Causal learning: Psychology, philosophy, and computation*. Oxford, UK: Oxford University Press.
- Gopnik, A., & Slaughter, V. (1991). Young children's understanding of changes in their mental states. *Child Development*, 62, 98–110.
- Harris, P. L. (2000). *The work of the imagination*. Oxford, UK: Blackwell.
- Harris, P. L. (2002). Delving into uncle Albert's cabinet: Further thoughts on the pretence-reality distinction. *Developmental Science*, 5(4), 419–421.
- Harris, P. L., Brown, E., Marriot, C., Whittal, S., & Harmer, S. (1991). Monsters, ghosts, and witches: Testing the limits of the fantasy-reality distinction in young children. *Developmental Psychology*, 9(1), 105–123.
- Harris, P. L., German, T., & Mills, P. (1996). Children's use of counterfactual thinking in causal reasoning. *Cognition*, 61, 233–259.
- Harris, P. L., & Kavanaugh, R. D. (1993). Young children's understanding of pretense. *Monographs of the Society for Research in Child Development*, 58(1).
- Huesmann, L. R., Moise-Titus, J., Podolski, C.-L., & Eron, L. E. (2002). Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977–1992. *Developmental Psychology*, 39(2), 201–221.

- Jaswal, V. K., & Malone, L. S. (2007). Turning believers into skeptics: 3-year-olds' sensitivity to cues to speaker credibility. *Journal of Cognition and Development, 8*(3), 263–283.
- Johnson, C. N., & Harris, P. L. (1994). Magic: Special but not excluded. *British Journal of Developmental Psychology, 12*, 35–51.
- Johnson, M. K. (1988). Discriminating the origin of information. In T. F. Oltmanns, & B. A. Maher (Eds.), *Delusional beliefs*, pp. 34–65. New York: Wiley.
- Johnson, M. K., Hashtroudi, S., & Lindsay, D. S. (1993). Source monitoring. *Psychological Bulletin, 114*, 3–28.
- Johnson, M. K., & Multhaup, K. S. (1992). Emotion and MEM. In S.-A. Christianson (Ed.), *The handbook of emotion and memory: Research and theory*, pp. 33–66. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Johnson, M. K., & Raye, C. L. (1981). Reality monitoring. *Psychological Review, 88*, 67–85.
- Johnson, M. K., & Raye, C. L. (2000). Cognitive and brain mechanisms of false memories and beliefs. In D. L. Schacter, & E. Scarry (Eds.), *Memory and belief*, pp. 35–86. Cambridge, MA: Harvard University Press.
- Kirsh, S. J. (2006). Cartoon violence and aggression in youth. *Aggression and Violent Behavior, 11*, 547–557.
- Koenig, M. A., Clément, F., & Harris, P. L. (2004). Trust in testimony: Children's use of true and false statements. *Psychological Science, 15*(10), 694–698.
- Landreth, G. L. (2002). *Play therapy: The art of the relationship*. New York: Brunner-Routledge.
- Lee, K., Cameron, C. A., Doucette, J., & Talwar, V. (2002). Phantoms and fabrications: Young children's detection of implausible lies. *Child Development, 73*(6), 1688–1702.
- Leevers, H. J., & Harris, P. L. (2000). Reasoning from false premises. In P. Mitchell, & K. J. Riggs (Eds.), *Children's reasoning and the mind*, pp. 67–86. Hove, UK: Psychology Press.
- Lillard, A. S. (1993). Pretend play skills and the child's theory of mind. *Child Development, 64*, 348–371.
- Lillard, A. S. (2001). Pretend play as twin earth: A social-cognitive analysis. *Developmental Review, 21*(4), 495–531.
- Lillard, A. S., & Witherington, D. C. (2004). Mothers' behavior modifications during pretense and their possible signal value for toddlers. *Developmental Psychology, 40*(1), 95–113.
- Loftus, E. F. (1979). *Eyewitness testimony*. Cambridge, MA: Harvard University Press.
- Loftus, E. F., & Pickrell, J. E. (1995). The formation of false memories. *Psychiatric Annals, 25*(12), 720–725.
- Mares, M.-L., & Acosta, E. E. (2008). Be kind to three-legged dogs: Children's literal interpretations of TV's moral lessons. *Media Psychology, 11*, 377–399.
- Mares, M.-L., & Woodard, E. (2005). Positive effects of television on children's social interactions: A meta-analysis. *Media Psychology, 7*, 301–322.
- Morison, P., & Gardner, H. (1978). Dragons and dinosaurs: The child's capacity to differentiate fantasy from reality. *Child Development, 49*(3), 642–648.
- Narvaez, D. (2002). Does reading moral stories build character? *Educational Psychology Review, 14*, 155–171.
- Narvaez, D., Gleason, T., Mitchell, C., & Bentley, J. (1999). Moral theme comprehension in children. *Journal of Educational Psychology, 91*, 477–487.
- Nicolich, L. M. (1977). Beyond sensorimotor intelligence: Assessment of symbolic maturity through analysis of pretend play. *Merrill-Palmer Quarterly, 23*, 89–99.
- Nichols, S. (2004). Imagining and believing: The promise of a single code. *Journal of Aesthetics and Art Criticism, 62*(2), 129–139.
- Onishi, K. H., Baillargeon, R., & Leslie, A. M. (2007). 15-month-old infants detect violations in pretend scenarios. *Acta Psychologica, 124*(1), 106–128.
- Piaget, J. (1962). *Play, dreams and imitation in childhood*. New York: Norton.
- Preissler, M. A., & Carey, S. (2004). Do both pictures and words function as symbols for 18- and 24-month-old children? *Journal of Cognition and Development, 5*, 185–212.
- Rakoczy, H. (2008). Taking fiction seriously: Young children understand the normative structure of joint pretend games. *Developmental Psychology, 44*(4), 1195–1201.
- Reissland, N. (1998). Context dependency in parental speech. *British Journal of Developmental Psychology, 16*, 363–373.
- Reissland, N., & Snow, D. (1996). Maternal pitch height in ordinary play situations. *Journal of Child Language, 23*, 269–278.
- Rhemtulla, M., & Hall, D. G. (2009). Monkey business: Children's use of character identity to infer shared properties. *Cognition, 113*, 167–176.
- 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., Shawber, A. B., Hoffman, R. E., & Taylor, M. (2009). Learning from fantasy and real characters in preschool and kindergarten. *Journal of Cognition and Development, 10*(1), 41–66.
- Richert, R. A., & Smith, E. I. (2011). Preschoolers' quarantining of fantasy stories. *Child Development, 82*(4), 1106–1119.
- Rozin, P., Millman, N., & Nemeroff, C. (1986). Operation of the laws of sympathetic magic in disgust and other domains. *Journal of Personality and Social Psychology, 50*(4), 703–712.
- Ruffman, T. (2002). Pretence-reality confusions in children and adults. *Developmental Science, 5*(4), 416–417.
- Samuels, A., & Taylor, M. (1994). Children's ability to distinguish fantasy events from real-life events. *British Journal of Developmental Psychology, 12*(4), 417–427.
- Scarlett, W. G., & Wolf, D. (1979). When it's only make-believe: The construction of a boundary between fantasy and reality in storytelling. *New Directions for Child Development, 6*, 29–40.
- Sharon, T., & Woolley, J. D. (2004). Do monsters dream? Young children's understanding of the fantasy/reality distinction. *British Journal of Developmental Psychology, 22*(2), 293–310.
- Shulman, A. (2009). The development of possibility judgment within and across domains. *Cognitive Development, 24*, 293–309.
- Shulman, A., & Carey, S. (2007). Improbable or impossible? How children reason about the possibility of extraordinary events. *Child Development, 78*(3), 1015–1032.
- Singer, D. G., & Singer, J. L. (1990). *The house of make-believe: Children's play and the developing imagination*. Cambridge, MA: Harvard University Press.
- Singer, J. L. (1961). Imagination and waiting ability in young children. *Journal of Personality, 29*, 396–413.
- Singer, J. L., & Streiner, B. F. (1966). Imaginative content in the dreams and fantasy play of blind and sighted children. *Perceptual and Motor Skills, 22*, 475–482.
- Skolnick, D., & Bloom, P. (2006a). The intuitive cosmology of fictional worlds. In S. Nichols (Ed.), *The architecture of the*

- imagination: New essays on pretense, possibility and fiction*, pp. 73–86. Oxford, UK: Oxford University Press.
- Skolnick, D., & Bloom, P. (2006b). What does Batman think about SpongeBob? Children's understanding of the fantasy/fantasy distinction. *Cognition*, 101(1), B9–B18.
- Smiley, S. S., & Brown, A. L. (1979). Conceptual preference for thematic or taxonomic relations: A nonmonotonic age trend from preschool to old age. *Journal of Experimental Child Psychology*, 28, 249–257.
- Sobel, D. M. (2004). Exploring the coherence of young children's explanatory abilities: Evidence from generating counterfactuals. *British Journal of Developmental Psychology*, 22, 37–58.
- Subbotsky, E. V. (1985). Pre-school children's perception of unusual phenomena. *Soviet Psychology*, 23, 91–114.
- Subbotsky, E. V. (1990). The preschooler's conception of the permanence of an object (verbal and actual behavior). *Soviet Psychology*, 28(3), 42–67.
- Subbotsky, E. V. (1992). *Foundations of the mind: Children's understanding of reality*. Cambridge, MA: Harvard University Press.
- Subbotsky, E. V. (2004). Magical thinking in judgments of causation: Can anomalous phenomena affect ontological causal beliefs in children and adults? *British Journal of Developmental Psychology*, 22, 123–152.
- Taylor, B. J., & Howell, R. J. (1973). The ability of three-, four-, and five-year-old children to distinguish fantasy from reality. *Journal of Genetic Psychology*, 12(2), 315–318.
- Taylor, M. (1997). The role of creative control and culture in children's fantasy/reality judgments. *Child Development*, 68, 1015–1017.
- Taylor, M. (1999). *Imaginary companions and the children who create them*. New York: Oxford University Press.
- Taylor, M., Cartwright, B. S., & Carlson, S. M. (1993). A developmental investigation of children's imaginary companions. *Developmental Psychology*, 29, 276–285.
- Taylor, M., Shawber, A. B., & Mannering, A. M. (2008). Children's imaginary companions: What is it like to have an invisible friend? In K. Markman, W. Klein, & J. Suhr (Eds.), *The handbook of imagination and mental simulation*. New York: Psychology Press.
- Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5, 207–232.
- Weisberg, D. S. (2009). The vital importance of imagination. In M. Brockman (Ed.), *What's next? Dispatches on the future of science*. New York: Vintage Books.
- Weisberg, D. S., & Bloom, P. (2009). Young children separate multiple pretend worlds. *Developmental Science*, 12(5), 699–705.
- Weisberg, D. S., & Sobel, D. M. (2012). Young children discriminate strange from impossible events in fiction. *Cognitive Development*, 27(1), 90–98.
- Wellman, H. M., & Estes, D. (1986). Early understanding of mental entities: A reexamination of childhood realism. *Child Development*, 57(4), 910–923.
- Woolley, J. D. (1997). Thinking about fantasy: Are children fundamentally different thinkers and believers from adults? *Child Development*, 68, 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., & Cox, V. (2007). Development of beliefs about storybook reality. *Developmental Science*, 10(5), 681–693.
- Woolley, J. D., & Phelps, K. E. (1994). Young children's practical reasoning about imagination. *British Journal of Developmental Psychology*, 12(1), 53–67.
- Woolley, J. D., & Van Reet, J. (2006). Effects of context on judgments concerning the reality status of novel entities. *Child Development*, 77(6), 1778–1793.
- Woolley, J. D., & Wellman, H. M. (1990). Young children's understanding of realities, nonrealities, and appearances. *Child Development*, 61, 946–961.
- Wyman, E., Rakoczy, H., & Tomasello, M. (2009a). Normativity and context in young children's pretend play. *Cognitive Development*, 24, 146–155.
- Wyman, E., Rakoczy, H., & Tomasello, M. (2009b). Young children understand multiple pretend identities in their object play. *British Journal of Developmental Psychology*, 27, 385–404.