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Grounded in reality: How children make sense of the unreal



Angeline S. Lillard^{a,*}, Jacqueline D. Woolley^b

^a University of Virginia, USA

^b University of Texas, USA

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ABSTRACT

In summarizing the nine articles comprising the Special Issue, Cognizing the Unreal, the editors make two major points. The first is that several articles show that children come to learn about what is real through their perceptions (particularly apparent in the articles by Markova & Legerstee, Goldstein & Bloom, Aguiar & Taylor, Gjerse, Hall, & Hood, and Woolley & McInnis). Second, children's beliefs about what is real appear to be helped by their accessing underlying abstract structures and comparing these across domains, an idea supported by Shultman & Yoo, Corriveau & Harris, and Van Reet, Pinkham, & Lillard's articles, and given credence by Magid, Sheskin, & Shulz. This latter article proposes that the reason children pretend might be because it is a venue in which children learn to engage in cross-domain abstraction. The authors end with reflection on the cultural proclivity to give very young children fantasy. This proclivity might not serve children well, since (the articles suggest) it is through reality (both perceptions of and abstractions about reality) that children come to understand fantasy.

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This Special Issue featured nine articles concerning children's cognizing of the unreal. Here we consider what conclusions we can draw from the set of articles regarding how children come to think about what is not true or real or perceptually accessible. Each of the articles addressed a unique facet of non-reality, and each uncovered meaningful developmental challenges and progressions in children's concepts.

* Corresponding author at: Department of Psychology, University of Virginia, P.O. Box 400400, Charlottesville, VA 22904-4400, USA. Tel.: +1 434 982 4750; fax: +1 434 979 0411.

E-mail address: Lillard@virginia.edu (A.S. Lillard).

The first article, by Markova and Legerstee, explored how toddlers enter the realm of pretense, examining their pretend and imitative behaviors with their mothers and then with an experimenter, from 15 to 24 months of age. As in previous research, the authors found that pretending increases across this time period; interestingly, however, children's rate of imitation of pretense remained the same. Furthermore, maternal pretending predicted children's imitation of their mother's pretense. Hence when mothers pretend, children reenact her pretend actions, and they do so equally often at 15 months as at 24. This is perhaps not surprising. What is not at all obvious is their second main finding: Maternal imitation of children's pretense actions predicted children's pretending. This suggests that perhaps by mirroring back children's pretend actions, mothers encourage children's pretending more broadly. These findings highlight the mutual action dialog that leads to early pretending in (at least) Euro-American cultures, and thus provide a hint as to how children first enter the realm of the unreal.

When adults pretend in front of young children, those children need to figure out that the acts are not real. This challenge continues with exposure to acting. Acting is in a sense similar to pretend play, in that actors and observers engage in willing suspension of disbelief. Goldstein and Bloom asked when children come to realize that actors do not really feel the feelings and physical states that they portray. They found a development between ages 3 and 5 in coming to realize that human actors are not really experiencing the emotions and physical traits they portray. Yet across preschool, and unlike adults, children believed that people whose portrayals were very exaggerated were more likely to be actually experiencing the projected states. In other words, they believed in hyper-real conveyances. It will be interesting in further research to see when this belief in exaggerated portrays is corrected to align with adult beliefs.

Three other articles were also concerned with the basic issue of how children conceptualize "unreal" (virtual, inanimate, acted, or perceptually inaccessible) entities and behaviors. Aguiar and Taylor presented children with a virtual versus a stuffed dog, and had them indicate which one had specific properties. Interestingly, despite the fact that only the virtual dog appeared to move on its own, both entities were seen as equally agentive. However, the stuffed dog was particularly characterized by friendship and comfort, whereas the virtual one was particularly characterized by entertainment. Neither, interestingly, was viewed as educational. Virtual toys are rapidly gaining market share, and are designed to be educational and friend-like. How children actually conceptualize such entities as compared to other toys is important to understand and this article breaks new and potentially fertile ground in addressing this question.

Gjersoe, Hall, and Hood were also concerned with children's attribution of characteristics to inanimate creatures—in this case of mental states to toys. They found that children do not anthropomorphize indiscriminately; rather they attribute mental states more to their attachment objects than to other favorite toys. This is especially the case when those objects have faces, but interestingly even "blankies" were seen to have mental states more so than other favorite toys.

The fourth manuscript to deal with how children conceptualize unreal things zeroed in on an important contrast: what is merely invisible rather than truly unreal. Invisibility is a property common to many fantastical entities, and to some very important real ones as well (germs, neutrinos). Woolley and McClinnis addressed how children conceive of invisibility in both real and in not-real entities. They found that a basic aspect of children's cognitive development, the ability to make the appearance-reality distinction, is related to understanding invisibility. Young children's concepts of visibility and reality status were intertwined at first, and gradually became disentangled between ages 3 and 7.

Taken together, one suggestion from the articles discussed thus far is that perception plays a very important role in children's coming to understand what is not real. Observing their mother's imitation furthers children's own pretense; the cuddly stuffed animal that one can hold (unlike the animated virtual character) can be a friend; and the findings that "seeing is believing" and that knowing that appearances can be deceiving both predict understanding invisibility. In stark contrast to this are two findings showing misunderstanding. Gjersoe and colleagues' showed that young children believe their attachment objects, especially those with faces, have mental states. Goldstein and Bloom reported that all preschoolers (unlike adults) think exaggerated actors are more likely to be truly experiencing their projected states than are more realistic ones. Perceptual information in these instances leads children astray; the strength of the accented characteristics leads children to think people are actually

experiencing what they are pretending to experience; the child's feelings coupled with the face lead the child to assume human-like characteristics in the attachment object.

Three other articles focused on what constrains children's beliefs about what is real. Shtulman and Yoo addressed how children's developing notions of possibility co-occur with and thus might prompt their coming to no longer believe in Santa Claus. Whereas parents present their children with pretend play and virtual entities, fully expecting their nonreality to be perceived, cultural myths are different: Parents provide testimony and evidence that they expect will mislead children into believing that what is not real actually is real. That children privilege adult testimony so much that they believe in things that violate their knowledge about the physical, psychological, and biological worlds evidences the power of adult testimony in forming children's concepts about reality. Shtulman and Yoo found that as children figured out that it would actually be possible (albeit unlikely) to find an alligator under one's bed, yet that one cannot ever eat lightening for dinner, they also began to deny this North Pole-abiding gentleman his reality status. Thus, finally looking past testimony to abandon belief in Santa Claus is associated with developing cognitions about what is actually real and possible.

Corriveau and Harris were also concerned with how children identify the reality status of special characters, in this case in narratives. Instead of focusing on how this knowledge aligns with developing understanding of physical causality, they focused on how it aligns with children's understanding of false representations in three domains: false photographs, false signs, and false beliefs. Their logic rested on the fact that historical and fantasy narratives differ in terms of purporting to represent reality: the former do, and the latter do not. Likewise, they argued, false beliefs and signs purport to represent reality, but false photographs do not: they are of reality at another point in time. The obtained evidence supported their prediction: understanding of false beliefs and signs, but not photographs, predicts understanding that characters in fantasy stories are pretend, whereas characters in real stories are real. We are intrigued but also puzzled by this finding, because in many ways photographs seem exactly like historical accounts: They reflect reality at a prior point in time. It will be important to explore this issue further.

Van Reet, Pinkham, and Lillard looked at how judgments of reality status for imagined entities (like ghosts), novel entities (like "surnits"), and real entities (like cars) might be influenced by the context in which the entities are introduced. In particular, they were interested in how the level of detail provided in a context influenced adults' and especially 10-year-olds' judgments, with emphasis on explanations for those judgments. Children were not vastly different from adults in what entities they endorsed, but they were somewhat more likely to endorse imagined and novel entities when those entities were presented in more elaborate descriptive contexts. Interesting developmental differences were also seen in explanations for their judgments. All participants supported their judgments for real entities with reference to direct experience: they'd seen it, for example. For imagined entities, they referred to general knowledge about traits and properties. This sort of justification was also applied to novel entities that were presented with more detail. For example, having been given a several-sentence description including that a surnit is a fish and has small teeth, a child might say, "Surnits are not real because fish don't have teeth." When novel entities were presented with little detail, however, participants justified their disbeliefs with indirect experiences, like never having heard testimony to the novel entities' existence.

These three articles concerned with what constrains beliefs about what is real and not-real point to the possibility of children tapping a higher level of abstraction in making their judgments. Perhaps they compare abstract knowledge of physical possibility in the real world to the Santa myth, abstract knowledge of false representations across different domains, and abstract knowledge of the property structures that they know go along with real things. This ability to reason about abstract structures was the topic of the last article, by Magid, Sheskin, and Shulz, which addressed a question raised in our introduction to the issue: Why do children pretend? More broadly, why do we cognize the unreal?

Magid and colleagues propose that a major purpose of the imagination is in its role as a domain-general mechanism that can produce ideas without evidence. They demonstrated in a series of studies that preschoolers will represent abstract and invisible properties of objects in a problem space, and (even without evidence) will generate solutions to problems in that space. To demonstrate this possibility, they developed two machines, one of which had a bead that could slide along a half ring, representing continuous movement, and the other of which had a pulley wheel that could designate

two locations, discretely. Either of these controllers could be plugged into a monitor that showed either discrete or continuous movement, or played discrete or continuous sound. Across four experiments, they showed that children believed that the discrete controller was responsible for discrete sounds and motion, and the continuous one for continuous sounds and motion. Although the experiments themselves do not concern pretend or fantasy, they do open the possibility that children can reason in this abstract way. They suggest that maybe children pretend because it hones their ability to engage in this cross-domain abstract representational process, in which people generate solutions or explanations that “fit” a problem space at a high level.

These articles suggest that children come to cognize the unreal through their real world perceptions and reasoning about underlying structures. Hence, one needs to know reality first. Perhaps this seems obvious, but note that it contrasts with cultural mores and some theory. Mobiles, books, videos and nursery decorations for children often feature unreal elements, like talking and flying animals in an array of primary colors. We give children Santa Claus, the Easter Bunny, and fairies. We strongly endorse the idea that children learn through their fantasy play. And yet these articles suggest that children learn to demarcate fantasy from what is real only gradually, by contrasting it with the perceptual and abstract information they glean from the real world.

Thinking about the unreal represents an important domain of human cognition, and how children come to grapple with the unreal is not well-mapped. With increasing technology, children are faced with myriad non-realities, from doctored photographs to reality TV characters to video game avatars. Because of this, it is critical that we understand how they think about a range of non-realities. At the same time, exploring these issues in depth also has the potential to advance our knowledge about children’s understanding of the real world as well, and thus, their cognitive development more generally.

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