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Brief article

What does Batman think about SpongeBob? Children's understanding of the fantasy/fantasy distinction

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Abstract

Young children reliably distinguish reality from fantasy; they know that their friends are real and that Batman is not. But it is an open question whether they appreciate, as adults do, that there are multiple fantasy worlds. We test this by asking children and adults about fictional characters' beliefs about other characters who exist either within the same world (e.g., Batman and Robin) or in different worlds (e.g., Batman and SpongeBob). Study 1 found that although both adults and young children distinguish between within-world and across-world types of character relationships, the children make an unexpected mistake: they often claim that Batman thinks that Robin is make believe. Study 2 used a less explicit task, exploring intuitions about the actions of characters—whom they could see, touch, and talk to—and found that children show a mature appreciation of the ontology of fictional worlds.

Keywords: Cognitive development; Theory of mind; Fiction; Reality/fantasy distinction; Perspective taking

Young children appreciate the distinction between fictional creations and entities in the real world; they make the reality/fantasy distinction. For instance, five-year-olds can separate pictures of real things from pictures of pretend things (Morison & Gardner, 1978), and can also distinguish fantastical events from real ones (Samuels & Taylor, 1994) (see also DiLalla & Watson, 1988; Golomb & Galasso, 1995; Harris, Brown, Marriot, Whittal,

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& Harmer, 1991). Additionally, although some young children may have imaginary friends, they are quite aware that these friends are not real (Taylor, 1999).

But as adults, we are not limited to a binary reality/fantasy distinction; we assume that there exist multiple fictional worlds (Lewis, 1978). We understand, for instance, that although James Bond and Anna Karenina are both fictional, they each occupy their own fictional world. While vacationing in the Riviera, Bond might read about Anna Karenina—but he cannot seduce her. Admittedly, there are cases in which characters from different words interact (e.g., the movies *Who Framed Roger Rabbit* and *Shrek*; some episodes of *The Simpsons*), but these stand out as clever and interesting precisely because they violate our ordinary expectations. Our natural default, when exposed to a novel story, is to create a unique world that is separate not only from the real world but also from all other fictional worlds.

As adults, then, we make both a reality/fantasy distinction, which separates everything fictional from everything real, and a series of fantasy/fantasy distinctions, which separate different fictional worlds from each other. This rich ontology of fictional worlds might be a late-emerging developmental accomplishment, the product of extensive experience with different forms of fiction. Children might believe that there is just a single fantasy world, and hence differ from adults in believing that Batman thinks SpongeBob SquarePants is real. This sort of one-world construal would not interfere with children's understanding of stories, and might be a natural initial assumption to make. On the other hand, a more sophisticated ontology might be present from the start. We explore this issue in the experiments reported below.

1. Methods

1.1. Participants

Twenty-four adults (mean age = 28 years, range = 18–52, 10 women) and 24 children (mean age = 4;10, range = 3;7–6;2, 16 girls)[1] participated in this study. The adults were recruited from universities and their surrounding areas and were given candy in exchange for their participation. The children were recruited either from a laboratory database or from preschools and day-care centers. An additional five adults and six children were tested but excluded from the final analyses for incorrectly answering an attention-checking question (see below for details).

1.2. Stimuli and procedure

We used the same procedure to test both adults and children except that (a) children were interviewed one-on-one while adults received a paper survey, and (b) children received a brief warm-up to help them practice using the words 'real' and 'make believe.'

[1] Despite the large range for children's ages, we found no correlation between age and responses for either Study 1 or Study 2, and so we treat all children as part of the same age group.

In the warm-up, each child was asked about the reality status of the child himself or herself, the experimenter, Superman, and the Cat in the Hat; those who answered these questions incorrectly were corrected.

Adults were shown pictures of eight well-known characters, two from each of four worlds (Spiderman, Batman, Beauty and the Beast, and The Muppets), and, before they received any further questions, were asked to report whether they knew each of these characters. All adults knew most of the characters; if an adult did not know a character, his or her responses to any questions including that character were excluded from analysis.

For the children, we created a set of laminated pictures or photographs of characters from children's movies, books, and television shows. There were nine worlds, including Spiderman, Finding Nemo, SpongeBob SquarePants, and Blue's Clues. The experimenter showed each child participant one main character at a time and asked, 'Do you know who this is? Do you know his/her name?' If the child did know the main character, the experimenter would ask the child about a different character from the same world. For example, if the child said that she knew who Batman was, the experimenter would ask about Robin. If the child did not know the main character, all characters from that world would be put aside and the experimenter would ask about the next character in the set. This continued until each child positively identified six characters, two from each of three worlds.

After this stimuli selection phase, participants received three types of questions in a random order: reality/fantasy questions, fantasy/fantasy questions, and within-world questions.

Reality/fantasy: The experimenter asked each child for a name of a friend and had the child draw a picture of the friend. Adults were asked to write down the name of one of their friends. All participants were asked, 'Do you think your friend [name] is real or make believe?' Six children and five adults who incorrectly answered 'make believe' were excluded from further analysis. The rest of the reality/fantasy questions asked participants about the status of each fictional character: 'Do you think [character] is real or make believe?'[2] Adults received four reality/fantasy questions and children received three, one for each main character.

Fantasy/fantasy: These questions tested what the participants believed about the relationships between fictional worlds by asking what each main character thinks about the main character from a different world. For example, 'Does Batman think that SpongeBob is real or make believe?' Adults received 12 of these questions and children six, one for each relationship between the four or three main characters.

Within-world: The experimenter asked what each of the three main characters from each world would think about a second character from the same world. For example, 'Does Batman think that Robin is real or make believe?' Adults received four of these questions and children three, one for each fictional world.

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[2] Participants were additionally asked to judge what the friend would say: 'Does your friend [name] think that [character] is real or make believe?' These questions were added so as to provide consistency with the other types of questions; responses were virtually identical to the 'Do you think…' questions, and so were not analyzed further.

2. Results and discussion

We scored 'real' answers as 1 and "make believe" answers as −1. Average responses that are significantly above chance (0) thus indicate an answer of 'real;' average responses significantly below chance indicate an answer of 'make believe.' See Fig. 1 for the average adult responses to the three types of questions, and Fig. 2 for the children's averages.

Reality/fantasy: Both adults and children make a reliable distinction between reality and fantasy. The average response in both age groups was significantly below 0, indicating an overall response of 'make believe' (adult mean = −0.8, $t(23) = 7.4$, $p < 0.01$; child mean = −0.7, $t(23) = 6.4$, $p < 0.01$).

Fantasy/fantasy: As predicted, adults claim that a character from one fictional world believes that characters from different worlds are make believe: Batman and SpongeBob are fictional to each other (mean = −0.5, $t(22) = 3.5$, $p < 0.01$). Children's responses show the same pattern (mean = −0.6, $t(23) = 5.4$, $p < 0.01$).

In addition, children's responses to the fantasy/fantasy questions are not significantly different from their responses to the reality/fantasy questions (mean difference = 0.1; $t(23) = -1.0$, $p > 0.10$). This indicates that children are committed to an answer of 'make believe' for the divisions between fantasy worlds as strongly as for the division between reality and fantasy. Children's performance also does not significantly differ from adults' for either the reality/fantasy questions ($t(46) = 0.3$, $p > 0.10$) or the fantasy/fantasy questions ($t(45) = 0.8$, $p > 0.10$).

Within-world: Adults report that characters within a fictional world are real to each other (mean = 0.7, $t(23) = 5.7$, $p < 0.01$). Children, however, show chance performance (mean = −0.1, $t(23) = 0.9$, $p > 0.10$). In other words, many children report that Batman thinks Robin is make believe. Despite this confusion, children's responses to the within-world questions are significantly different from their responses to the fantasy/fantasy

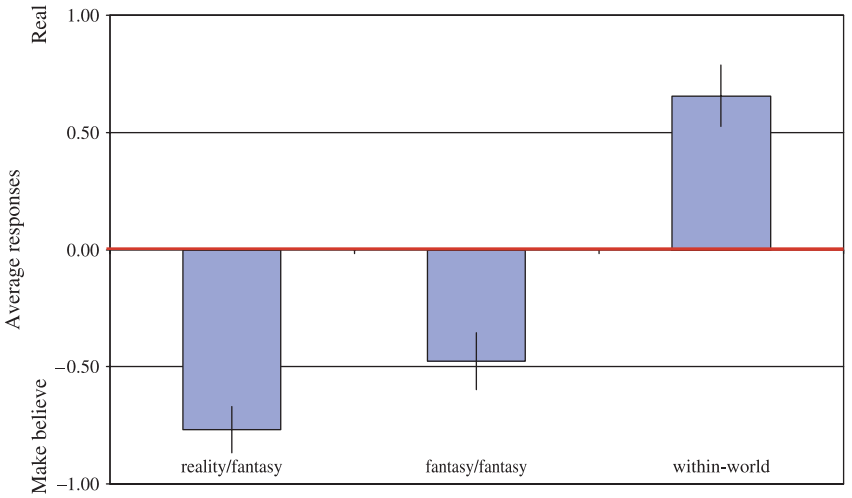

Fig. 1. Average adult responses, Study 1 ($n = 24$).

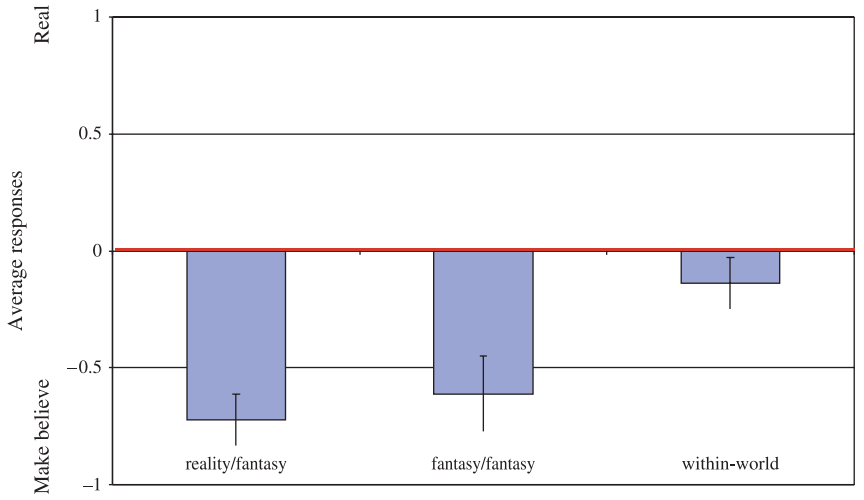

Fig. 2. Average child responses, Study 1 ($n = 24$).

questions (mean difference = 0.5; $t(23) = 3.3$, $p < 0.01$). This indicates that, at minimum, children understand that the relationship between within-world pairs of characters, such as Batman and Robin, is different from that of across-world pairs, such as Batman and SpongeBob.

In sum, even though children correctly distinguish between within-world pairs and across-world pairs, as adults do, children differ from adults in their chance performance on the within-world questions. They are seemingly confused about what Batman believes about Robin. This is a surprising result; it seems unlikely that children really believe that Batman thinks Robin is not real. If they did, they should find stories with these characters incomprehensible. For instance, Batman often rescues Robin from the clutches of an evil villain. Why would he do that if he genuinely believed that Robin was make believe? In general, understanding a narrative seems to require at least a tacit belief that characters within that narrative are real to one another.

One explanation for the children's confusion here is that they find it hard to take a character's perspective when answering our questions. When a child is asked what Batman thinks about Robin, she might sometimes fail to consider the situation from Batman's point of view, and instead give the answer that she herself would give: 'make believe.' This ability to take another's perspective on a non-physical situation is known as conceptual perspective taking, to distinguish it from perceptual perspective taking, which involves different views of the same physical object (Taylor, 1988). There is considerable evidence that children have difficulty with conceptual perspective taking before the age of five (Dixon & Moore, 1990; Marvin, Greenberg, & Mossler, 1976; Ruffman & Olsen, 1989). It may be, then, that the within-world questions presented a particularly difficult perspective taking task and hence may not have given an accurate measure of children's understanding of this connection between characters.

A different measure is suggested by Wellman & Estes (1986), in which three-, four-, and five-year-olds were told stories about a character who either had a cookie or who was imagining a cookie. The experimenters asked the children whether the character in the story could access or act on the imaginary object. The children agreed that the character could eat the real cookie but not the imaginary cookie, and the character could show the real cookie, but not the imaginary cookie, to a friend.

Study 2 follows this action-based approach, asking children which actions are appropriate between pairs of characters rather than merely asking them to explicitly label these connections as 'real' or 'make believe.'

3. Study 2

3.1. Methods

3.1.1. Participants

Twenty-five children (mean age = 4;11, range = 3;9–6;3, 15 girls) participated in this study. As with Study 1, the participants were recruited from either a laboratory database of families or from local preschools and day-care centers. An additional two children were tested but excluded from the final analyses for failing an attention-checking question (see below for details).

3.1.2. Stimuli and procedure

As in Study 1, we asked each child individually to select characters that he or she was familiar with, and we asked the child only about those characters. Each child selected four characters, two from each of two different worlds. We used only two worlds here, rather than three as in Study 1, because we were asking more questions about each character and wanted to keep the number of questions low to avoid fatigue. This character-choosing procedure and the warm-up questions were the same as in Study 1.

We were interested in the same three connections between characters as in Study 1: reality/fantasy, fantasy/fantasy, and within-world. In the current study, we asked children whether the actions of seeing, touching, or talking would be appropriate for each connection, based on Wellman & Estes (1986). For example, a set of within-world questions would be: 'Can Batman see Robin? Can Batman touch Robin? Can Batman talk to Robin?' We used the same three actions in the same order for each type of connection. After asking about the three actions, we repeated our explicit judgment questions from Study 1: 'Does Batman think that Robin is real or make believe?' We hypothesized that priming the child with the actions would improve their performance on these explicit judgments. We always asked this explicit question last so as not to bias children's responses to the action questions by forcing them to make an explicit judgment.

We also asked children to make the same action judgments about one of their friends and to report explicitly whether their friend was real or make believe. Two children incorrectly claimed that their friend was make believe, so their responses were excluded from the sample as in Study 1.

All questions were asked in a fixed order for all participants. We first asked the child about his or her friend, then about the reality/fantasy distinction, the within-world connection, and the fantasy/fantasy distinction for one of the two worlds. After completing these three types of questions for one fictional world, we asked the same questions for the second world.

3.2. Results and discussion

For the action judgments, there were two possible responses to each question: yes or no. 'Yes' responses were coded as 1 and 'no' responses were coded as −1; chance performance was thus 0. Greater positive responses indicate that more actions are possible between the characters, implying that the characters are real to each other. Greater negative responses indicate that actions are not possible between the characters, implying that the characters are not real to each other. See Fig. 3 for children's responses.

Reality/fantasy: Children reported that they could not see, touch, or talk to the fictional characters more often than chance (mean = −0.7, $t(24) = 7.3$, $p < 0.01$). For the explicit question, they reported that the characters were indeed make believe: (mean = −0.8, $t(24) = 6.7$, $p < 0.01$).

Fantasy/fantasy: Children indicated that characters from different worlds cannot act on each other (mean = −0.6, $t(24) = 4.2$, $p < 0.01$). When explicitly asked, children claimed that characters from one world believe that characters from a different world are make believe (mean = −0.5, $t(24) = 3.4$, $p < 0.01$), confirming their action judgments and replicating Study 1.

Within-world: Children's responses to the action judgments indicated that characters within a world can act on each other, implying that they are real to each other (mean = 0.8,

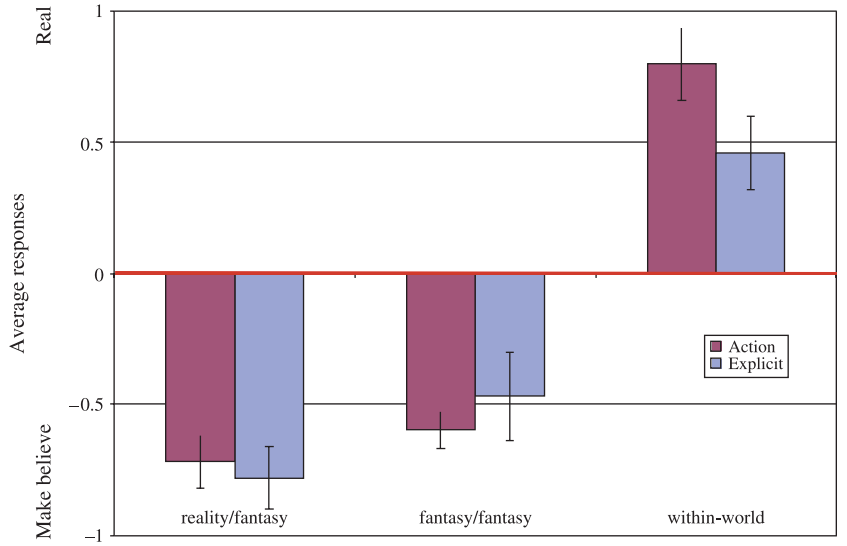

Fig. 3. Average child responses, Study 2 ($n = 25$).

$t(24) = 11.1$, $p < 0.01$). Contrary to findings from Study 1, children's explicit judgments were significantly higher than chance (mean = 0.5, $t(24) = 2.7$, $p < 0.05$).

Comparing across question types, children's responses to the action within-world questions are significantly higher than their responses to both the action reality/fantasy questions (mean difference = 1.5; $t(24) = 14.6$, $p < 0.01$) and the action fantasy/fantasy questions (mean difference = 1.4; $t(24) = 10.1$, $p < 0.01$). Similarly, children's responses to the explicit within-world questions are significantly higher than their responses to both the explicit reality/fantasy questions (mean difference = 1.2; $t(24) = 6.6$, $p < 0.01$) and the explicit fantasy/fantasy questions (mean difference = 0.9; $t(24) = $y5.1. $p < 0.01$).

In sum, the data from Study 2 serve to strengthen two of the conclusions of Study 1. First, children have a solid grasp of the division between reality and fantasy. Second, children divide the fictional universe as adults do, claiming that characters from different worlds are fictional to each other. This consistent pattern of responses allows us to reject the hypothesis that children make only a binary reality/fantasy distinction, lumping all fictional characters into a single world in which all the characters are real to each other. Children, like adults, believe that characters from different worlds are fictional to each other.

4. General discussion

Previous studies have concluded that children distinguish between what is real and what is fictional. The two current studies confirmed this conclusion using both explicit questions and questions that asked whether actions are possible across the reality/fantasy divide. We additionally found that both adults and children judge that characters from different worlds are fictional to each other, indicating that they divide the fictional space finely, perhaps creating a new fictional world for each story that they encounter.

This is the first study to examine the issue of relationships among fictional worlds, to our knowledge, and it opens many avenues for further research. One concerns the developmental origin of this nuanced understanding of fictional worlds. This might well be the product of experience. Children can observe the separateness of fictional worlds by realizing, for instance, that the characters in the SpongeBob SquarePants television program do not interact with the characters in the Batman television program. They may use such observations to conclude that these worlds are distinct. Alternatively, children may have an unlearned, default understanding that there are multiple fictional worlds. For instance, a child who pretends to be a tiger at time 1 and pretends to be a firefighter at time 2 might naturally assume that the world of tiger-pretense and the world of firefighter-pretense are separate. Indeed, three- and four-year-old children seem to make just such separations in their pretend play (Harris, 2000). This issue can be further explored in younger children by extending some of the pretense studies developed by Leslie (1994) and others.

Our understanding of fiction extends beyond simply appreciating the distinctions among worlds. For instance, children must learn to properly interpret fictions within fictions, as when a story character is dreaming or creating a story of his or her own (e.g., the story sequence in *Chitty Chitty Bang Bang*, the play-within-a-play in *Hamlet*). Wellman and Estes's (1986) results suggest that young children have some understanding

of this, as their participants were able to reason accurately about a fictional character who imagines a cookie, but this issue should be explored in more detail.

In addition to these intra-fictional relationships, questions remain about inter-fictional relationships. How do multiple fictional worlds interact? Although children and adults in the current task judged that characters in different worlds are fictional to each other, it is possible that this separation is stricter between some worlds than others. Experience with multiple worlds and knowledge of genre could lead people to expect characters from some worlds, but not others, to interact.

These intuitions are complicated by the fact that some fantasy/fantasy relations are asymmetrical. Such asymmetries are possible because our intuitions about what a character believes are based on how realistic that character's world is. James Bond inhabits a world quite similar to our own, and so his beliefs should resemble those of a real person. Like us, he should think Cinderella is make-believe. On the other hand, Cinderella inhabits a world that is sufficiently dissimilar to our own that its inhabitants should not share many of our beliefs. Our intuition, then, is that Cinderella should not believe that James Bond is make-believe; she should have no views about him at all.

This raises a further issue, which is that our studies involved a forced-choice question of the form 'Does *X* think *Y* is real or make-believe?' But there are some cases, as in the example above, where the answer might be that *X* has never heard of *Y*. This might have been the appropriate response to some of our questions, making them a particularly difficult test of our participants' intuitions. Given that our intuitions about whether *X* could know about *Y* rest on how closely *X*'s world resembles the real world, we can predict when such asymmetries should and should not occur. On one extreme, Ian McEwan's novel *Saturday* takes place in London on February 15, 2003. The natural assumption is that, with the exception of those specific events that McEwan writes about, the story's world is our world. It is unsurprising, then, when his main character has a chance encounter with Prime Minister Tony Blair (real to him) and complains about how boring it is to read about Madame Bovary (fictional to him). On the other extreme, the world of SpongeBob is so different from our own that it might lack any contact at all with other worlds, and he is unlikely to have heard of either Tony Blair or Madame Bovary (for further discussion, see Skolnick and Bloom, in press).

The investigation of fictional worlds can provide a useful tool for exploring cognitive development. But these issues also present a significant domain of research in their own right. We spend much of our lives engaged with worlds that we know are not real, as is reflected in venues as otherwise diverse as soap operas, blockbuster movies, comic books, fairy tales, pornography, and children's interactions with their imaginary companions. Understanding how we make sense of such worlds and how this understanding develops in young children is an important project for psychology.

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