PAPER

Development of beliefs about storybook reality

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Abstract

The goal of this research was to assess children's beliefs about the reality status of storybook characters and events. In Experiment 1, 156 preschool age children heard realistic, fantastical, or religious stories, and their understanding of the reality status of the characters and events in the stories was assessed. Results revealed that 3-year-olds were more likely to judge characters as real than were 4- and 5-year-olds, but most children judged all characters as not real for all story types. Children of all ages who heard realistic stories made more claims that the events in the stories could happen in real life than did children who heard fantastical stories. Five-year-olds made significantly more claims that events in religious stories could happen in real life than did younger children. In Experiment 2, 136 4- and 5-year-olds heard similar stories. Results replicated those from Experiment 1, and also indicated a growing awareness of the basic nature of realistic fiction.

Introduction

In many cultures, storybooks play an important role in young children's lives. Children in the United States, for example, are read storybooks by parents and caregivers even in infancy (see e.g. Heath, 1992). Much empirical attention has been directed toward the potential benefits of storybook reading for later literacy (see e.g. Dickenson & Smith, 1994; Meyer & Wardrop, 1994; Wood, 2002). Storybooks are also purported to provide emotional benefits to children. Bettelheim (1977) suggested that by identifying with a literary hero, children are better able to cope with the difficulties of their everyday lives. He also discussed how children learn about people's problems and solutions to those problems through stories. The field of bibliotherapy (see e.g. Lenkowsky, 1987; Berg-Cross & Berg-Cross, 1976) is based on the concept that reading appropriate literature to young children will produce affective change and promote personality growth and development.

In addition to their potential emotional benefits, storybooks provide important opportunities for children to learn about the real world (Ganea, Bloom & DeLoache, 2007). Human beings are unique in our ability to acquire information through books, and we use books as a source of knowledge about everything from cooking to space exploration. Thus both adults and children have the potential to learn a lot about the world

through books, especially aspects of the world that cannot be experienced directly. Yet with the ability to learn from books comes the risk of misinformation and misunderstanding. As Shtulman and Carey (2007) explain, 'In granting the veracity of nonexperienced events, we may inadvertently come to believe in the occurrence of events that did not actually take place (fictional events) or, worse yet, events that could not in principle take place (impossible events)' (p. 3).

The content of children's storybooks makes this a potentially difficult problem for children. Although many children's storybooks depict real events and real entities, many depict primarily fantastical entities and events. Critically, many seamlessly interweave fantasy and reality: A girl flies away on the back of a swan, for example. Certainly girls are real, but riding on the back of a flying swan is not a real event. For a child who has never seen a swan, how is she to know whether they are real beasts or creatures of the author's imagination? According to developmental research, young children appear to understand a great deal about ordinary events and are able to distinguish them from extraordinary ones, and they have definite beliefs about things that can and cannot happen in reality (Browne & Woolley, 2004; Shtulman & Carey, 2007). For example, work by Keil (1989) and by Rosengren, Kalish, Hickling and Gelman (1994) indicates that preschool age children have a good sense of what sorts of biological transformations are possible in real life.

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This suggests that it is unlikely that children of this age believe that, for example, frogs could really turn into princes. Additionally, by the age of 3 or 4, young children make various reality/non-reality distinctions, which indicates that they have formed distinct categories of real and pretend entities (Flavell, Green & Flavell, 1986; Wellman & Estes, 1986; Woolley & Wellman, 1990).

One might extrapolate from this that children may also be clear about the reality status of events and characters they encounter in storybooks. Yet whether this is true is an empirical question that has received scant attention. Based on his research, Applebee (1978) claimed that children's earliest interpretations of stories are that they are events that happened in the past – they are historical rather than fictional. According to Applebee, children begin to doubt the reality of stories at around age 5 or 6. Yet confusions remain, as evidenced by Applebee's inclusion in his book of a discussion in which a group of 6-year-olds arrive at a consensus that Cinderella is real. Tucker (1981) proposed that it is not until age 7 that children are beginning to let go of literal beliefs in fiction. This body of work suggests that children initially believe that all storybook characters and events are real, but start to lose this belief around the age at which they begin formal schooling.

Some studies, however, suggest that reality/fantasy differentiation regarding storybook events develops toward the end of the preschool years. B. Taylor and Howell (1973) showed 3- to 5-year-old children a set of pictures taken from children's storybooks, some realistic (e.g. a mother bird feeding its young), and some fantastical (e.g. a rabbit sweeping the floor while another rabbit bakes a cake). Children were asked to indicate whether the depicted events could really happen. Results indicated that by age 5 children were able to identify the pictures correctly. Using a similar method, but varying the emotional content of the pictures, Samuels and M. Taylor (1994) also found that older preschoolers (mean age 5;0) were able to differentiate real from fantastical pictures, but younger preschoolers (mean age 3;10) were not. They also found that children tended to say that events with negative emotional valence, whether real or fantastical, could not really happen.

Although not specifically addressing children's understanding of storybook characters and events, an experiment by Subbotsky (1994) sheds additional light on this issue. Four- and 5-year-old children were asked whether various physical violations were possible in real life and in a fairy tale. His results indicated that by age 4 children know what sorts of events are possible in fairy tales versus in reality. For example, when questioned about the possibility of a child passing through a wall, 4- to 6-year-old children understood that this sort of event could not happen in the real world but could happen in fairy tales.

In contrast to Applebee's (1978) and Tucker's (1981) claims, this body of work suggests that an understanding of the reality status of storybook events might be present during the later preschool years. The primary goal of the present research is to determine whether and when children distinguish fantasy and reality in storybooks. We assess two components of this understanding: (1) factuality – whether the characters and events really did exist/happen at some point in time – and (2) possibility – whether the characters and events could possibly exist/happen, and also assess children's understanding of their relations. An understanding of the relations between factuality and possibility seems critical for a child's ability to learn from books, especially those that focus on children and their everyday challenges and accomplishments. For example, even though *Oliver Button* is a fictional story, boys can still learn to dance.

An additional goal is to begin to explore how children make these decisions. One heuristic young children might use to make these decisions is something like what Applebee describes: Assume that all storybooks represent reality, that they are historical. If children operate with this heuristic they would mistakenly judge fantastical storybooks as representing reality. Children might also use the opposite heuristic, however: Assume that all storybook content is not real, or fictional. Here, we would have the opposite problem: Children would judge that even realistic storybooks are fiction. This could have implications for children's ability to apply information from books to their lives and their world. A third heuristic is also possible. Children might assess whether they think the events in the book are possible in reality, and use that decision to decide whether the characters really exist(ed). For example, perhaps children reason that because pumpkins cannot really turn into carriages, anyone participating in such an event cannot really exist. Our first step in addressing these questions involves asking children whether the characters they encounter in storybooks really exist or existed. We also solicit children's judgments about the possibility of storybook events, and examine whether children might use these judgments as a basis for deciding about the factuality of storybook characters. In Study 2, we explore these issues more fully by including factuality and possibility judgments for both characters and events.

A final goal of the present research is to explore children's conceptions of the people and events in religious stories. Like other stories that portray adults and children as main characters, religious stories also depict humans as main characters. However, unlike the characters in most children's stories, the people in religious stories are

intended to represent real people who once existed. Despite this, people in religious stories often experience or cause events that seem fantastical: Moses parts the waters of a river; Daniel emerges alive after spending a night in a lions' den. Because ordinary-seeming people experience unusual events or interact with supernatural beings, these stories might seem more like fantastical stories to children. Do children conceive of characters and events in religious stories as real? If so, are they granted the same reality status as those in realistic, non-religious stories? Inclusion of religious stories made it possible to address children's religious cognition as it relates to their storybook concepts.

The methodology used in previous research limits somewhat the conclusions that can be drawn about when and how children make reality status decisions about storybooks. All of the studies reviewed involved presenting children with isolated hypothetical scenarios (Subbotsky, 1994) or pictures of events (Samuels & M. Taylor, 1994; B. Taylor & Howell, 1973); none assessed children's reactions to and judgments about actual storybooks. There are aspects of hearing a story in its entirety that could make judgments about it different from those regarding hypothetical scenarios and isolated pictures. One is that stories contain character development, relations between characters, and plots. These factors serve to involve the child in the story, which could potentially result in fantasy–reality confusion. Conversely, children might be better at judging the reality status of storybooks when they have heard the whole story. Perhaps hearing an entire fantasy story, for example, gives children more opportunity to experience the fantastical elements of the story and hence more opportunities to contrast those elements to real life. In the present research children were questioned about reality status after hearing an entire storybook. Because this format is more similar to the storybook-reading events that occur in children's everyday lives, it was expected to provide a more accurate assessment of children's beliefs about the events and characters in storybooks.

Experiment 1

Method

Participants

One hundred and fifty-six children participated. There were 52 3-year-olds (M = 3;8, range = 3;0–3;11), 48 4-year-olds (M = 4;6, range = 4;0–4;11), and 56 5-year-olds (M = 5;9, range = 5;0–6;2). Responses from six additional children, including four 3-year-olds, one 4-year-old and one 5-year-old, were dropped from the final analyses. Five of these children did not finish the session, and one received hints from his father (who was in the testing room). Seventy-five females and 81 males participated. The children were predominantly Caucasian but from a range of ethnic backgrounds, including Asian American and Hispanic American. One hundred and seventeen children were recruited from a database of children from the local community, maintained by the psychology department. Thirty-five children were recruited from an Episcopal Day Care Center and four from a small family-style day care center.

Materials

Materials were 12 children's books involving a human as the protagonist. There were three types of books: (1) realistic, in which people interact with family and/or friends (e.g. a girl is called in to dinner by her mother), (2) religious, in which people interact with God (e.g. God saves a man from lions), and (3) fantastical, in which people interact with fantastical entities (e.g. a boy fights a monster). An initial sample of 18 children's books was selected, with six of each type, on the basis of length and age appropriateness. Seventy-two adults each rated six of the books (selected randomly for each participant) on their fantastical, realistic, or religious nature (exact questions are included in Appendix A). Of the six fantastical books, the four that received the highest fantasy ratings (M = 2.75 out of 3) were selected for use in the experiment. Of the six realistic books, the four that had the highest realistic ratings (M = 2.53) were selected. For the religious books, the four with the highest religiosity ratings (M = 2.6) were used. The final list of books and ratings is presented in Appendix B.

Procedure

Children were randomly assigned to the Realistic, Fantastical, or Religious condition. Participants were read four books in random order. After hearing each story, participants were asked three story-specific reality status questions, one assessing event possibility and the other two assessing the factuality of the character: (1) Could (a focal event from the story) really happen in real life or just in the story? (2) Is (a main character in the book) a real person or just a person in the book? and (3) Could (a main character in the book) come and visit you . . . could he come play with you or is he just in the book? Before each set of questions, children were reminded of the main character or event in the book. For example, if children were read *Oliver Button is a Sissy*, they were asked: (1) 'Oliver Button learned how to dance. Could

that really happen in real life or just in the story?' (2) 'Is Oliver Button just a person in the book or is he a real person?' and (3) 'Could Oliver Button come and visit you? Could he come and play with you right now or is he just in the book?' Response options for the three questions were alternated within each participant. Children were asked to explain their answers to the third question ('Why can't s/he come play with you?'). To assess children's religious background, parents were given a questionnaire requesting information about their and their child's religious affiliation and related activities (Appendix C).

Results and discussion

Reality status of events

To check for differences between the books within each condition, we performed chi-squared analyses on children's responses for the four books within each condition. Item analyses indicated that children judged the events in the books within each of the conditions similarly. Thus, the books were grouped together as intended and subjected to further analyses.

For Question 1 ('Could (the event) happen in real life?'), affirmative responses were scored as 1 and negative responses received a 0. Preliminary analyses revealed no effects of sex nor any interactions involving it. As shown in Figure 1, children of all ages treated the different types of stories differently in terms of the possibility of the focal events. Very few children of any age claimed that the fantastical events could really happen ($M = .07$, $SD = .20$). The figure also shows an increase with age in claims that both realistic and religious events in the books could really happen. A 3 (age) × 3 (condition) ANOVA was conducted on a score representing the average of children's responses to Question 1 across the four books, and confirmed the patterns shown in the graphs. This
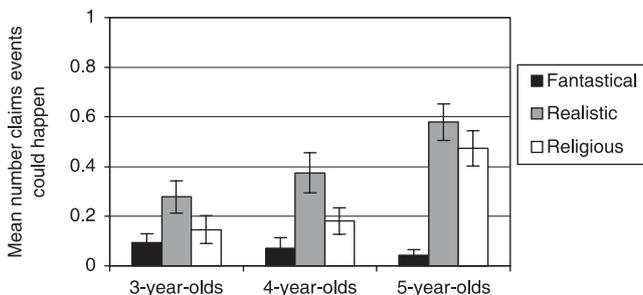
analysis revealed main effects of age, $F(2, 301) = 9.34$, $p < .001$, and condition, $F(2, 301) = 25.93$, $p < .001$. These were qualified by a significant age × condition interaction, $F(4, 301) = 3.97$, $p < .01$.

To explore the interaction, simple effects analyses were conducted for each age group and for each condition. When indicated, post-hoc tests were conducted using Fisher's PLSD, α = .05. A one-way ANOVA on the 3-year-olds' scores revealed a significant effect of condition, $F(2, 99) = 3.63$, $p < .03$. As shown in Figure 1, 3-year-old children who heard realistic books judged the events as possible in real life ($M = .28$, $SD = .39$) more often than did 3-year-olds who heard fantastical books ($M = .10$, $SD = .23$). Events in religious books ($M = .15$, $SD = .28$) were not judged differently from events in either the fantastical or realistic books. The results were somewhat similar for 4-year-olds, with children who heard realistic books judging the events to be possible in real life ($M = .38$, $SD = .46$) more often than children who heard fantastical books ($M = .07$, $SD = .22$), $F(2, 93) = 5.85$, $p < .01$. However, 4-year-olds who heard realistic books also judged that the events could happen in reality more often than did 4-year-olds who heard religious books ($M = .18$, $SD = .32$). Events in religious books were not judged differently from events in fantastical books. Finally, both 5-year-olds who heard realistic books ($M = .58$, $SD = .44$) and those who heard religious books ($M = .47$, $SD = .43$) judged that the events were possible in reality more often than did children who heard fantastical books ($M = .04$, $SD = .14$), $F(2, 109) = 21.72$, $p < .001$.

These patterns suggest development in children's conceptions of events in both realistic and religious storybooks. To assess this statistically, one-way ANOVAs, with age as the independent variable, were conducted for each condition. For the realistic storybooks, 5-year-olds ($M = .58$, $SD = 44$) were more likely to say that the events could really happen than were 3-year-olds ($M = .28$, $SD = .39$), $F(2, 103) = 4.75$, $p < .02$. For the religious storybooks, 5-year-olds ($M = .47$, $SD = .43$) were more likely to say that the events could happen than were both 4- ($M = .18$, $SD = .32$) and 3-year-olds ($M = .15$, $SD = .28$). There was no effect of age on judgments about the fantastical books; the average rating for the events in these books was .07 (out of 1).

To assess the extent to which children were consistent across the four books of each type, tallies were computed for each type of storybook. The tallies represent the number of books of that type for which each child claimed that the main event could happen in real life. Chi-square goodness-of-fit tests were conducted to assess whether patterns of response were significantly different from random responding. As shown in Table 1, children of all ages were consistent in rejecting the reality

Figure 1 *Experiment 1: Mean number claims events could happen (+SE) by age and condition.*

Table 1 *Experiment 1: Number of children claiming that events in 0, 1, 2, 3, or 4 books could happen by storybook type and age*

	Number of children who claimed events could happen in				
	0 books	1 book	2 books	3 books	4 books
Fantastical					
3	16	3	1	1	0[a]
4	11	2	1	0	0[a]
5	15	3	0	0	0[a]
Realistic					
3	9	1	3	3	1[c]
4	8	1	2	1	4[b]
5	4	2	3	4	6
Religious					
3	9	0	2	1	0[a]
4	9	4	2	1	0[b]
5	3	4	7	2	3

Note: [a] indicates X^2 goodness-of-fit test significant at $p < .01$; [b] indicates significance at $p < .05$; and [c] indicates $p < .06$.

status of the events in the fantastical books. Both 3- and 4-year-olds were also consistent in their responses to the realistic and the religious books. The only inconsistencies occurred in the 5-year-old children's ratings of the realistic and religious books. For both of these types of books, 5-year-olds' responses were not significantly different from chance responding. Given that younger children consistently judged events in these books as not-real, the inconsistency in the 5-year-olds' responding could reflect a transitional understanding of or belief about the reality status of the events in these types of books, although older children would need to be included to assess this possibility.

Reality status of characters

Two questions assessed belief in the reality status of the characters in the books. For Question 2 ('Is (character) a real person or is s/he just in the book?'), a response that indicated that a character was a real person was scored as 1, whereas one that indicated that the character was a person in the book received a 0. For Question 3 ('Could (character) come and play with you today or is she just in the book?'), a response that indicated that a character could come and play was scored as 1, whereas one that indicated that a character was only in the book received a 0. Responses to these two questions were significantly correlated, r (156) = .59, $p < .001$. Thus, to assess children's beliefs about the characters in the books, their responses to Questions 2 and 3 were averaged

and then average scores were computed across the four stories. Preliminary analyses revealed no effects of sex. A 3 (age) × 2 (condition) ANOVA revealed only a main effect of age, with 4- ($M = .21$, SD = .27) and 5-year-olds ($M = .15$, SD = .25) judging that the characters in the stories were real significantly less often than 3-year-olds ($M = .37$, SD = .38), $F(2, 309) = 14.77$, $p < .001$.

To explore whether children responded negatively to Question 3 ('Could the character come and play with you . . . ?') because they believed that the character was real once but was now dead, versus believing that the character was just fictional, explanations were solicited ('Why can't s/he come play with you?'). Children generated a total of 621 explanations, that were coded into four categories: (1) the character was just in the book, (2) the character was not real, (3) the character was dead, and (4) no answer, don't know, or otherwise uncodable. Two independent judges coded half of the explanations, which resulted in 96% agreement (Cohen's kappa = .94). The most common explanation across book types was that the character was just in the book (56%), which suggests that children believed the characters to be fictional. However, because this response is essentially a repetition of one of the response alternatives, this suggestion should be taken with caution. The next most common response (20%) was that the character was 'pretend' or 'not real'. Very few responses were that the character was dead or in heaven (5%). Thus, although it is not entirely clear what many children meant in responding that the characters were 'just in the book', explicit references to the characters as real people in a historical sense were rare.

Overall, the results indicate that children were highly skeptical of the existence of characters in storybooks, and became even more skeptical with age. Thus children did not appear to be using the first heuristic. Children were also fairly skeptical about the possibility of the events in the storybooks. Their judgments regarding the possibility of the real events in particular was surprisingly low. This attitude toward events is also reflected in work by Shtulman and Carey (2007), who show that young children often deny the possibility of unusual or improbable (but possible) events, such as a man with a beard down to his toes. However, with age, children increasingly granted the possibility of both the religious and the realistic storybook events. Perhaps children must learn, as they get older, to relax their initially skeptical attitude for certain subsets of books. The finding of these opposing trends suggests that children also were not using the third heuristic described in the introduction; their judgments about the historical status of the storybook characters did not seem to be governed by their ideas about the possibility of the storybook events.

Instead the majority of children appeared to use the second heuristic; assume storybook characters are fictional entities.

Effects of religiosity

The next set of analyses was aimed at addressing whether religious background affected children's claims that the characters in the religious books really existed and that the events in religious books were possible. Parent questionnaires were scored such that responses indicating greater levels of involvement in religion were awarded higher scores. The question scores were then averaged, resulting in a mean score of 1.04 (SD = .66) with a range of 0–2.4. Correlational analyses revealed a significant relation between parents' reports of family religiosity and children's claims that the events in the religious books could really happen, $r(96) = .30$, $p < .01$. There was no relation between religiosity and children's judgments about the events in either the fantastical or realistic storybook conditions. It appears, thus, that the increase with age in claims that the religious events can happen in reality is at least partly due to religious involvement.

To examine the respective contributions of age and religiosity to children's judgments regarding the religious events, a multiple linear regression was conducted on children's claims that the religious events could happen, using age, religiosity, and the interaction term as predictors. The interaction term did not make a significant contribution to the variance; thus it was removed, and the independent contributions of age and religiosity were assessed. Both age, $\beta = .29$, $t(95) = 3.33$, $p < .01$, and religiosity, $\beta = .28$, $t(95) = 2.95$, $p < .01$, contributed significantly to the variance, $F(2, 95) = 9.95$, $p < .01$, with an overall R^2 of .18.

Recall that the sample was drawn both from the population of children in a lab database and children who attended a religious preschool. A chi-squared analysis was performed to investigate whether children from these two test locations had different family religiosity scores. This analysis revealed that indeed a greater proportion of children from the religious preschool had high religiosity scores compared to the lab participants, $X^2(2) = 14.44$, $p < .01$. Children from the religious preschool were also significantly more likely to claim that the religious events could really happen ($M = .46$. SD = .41) than were children tested at the lab ($M = .24$, SD = .37), $t(96) = 2.38$, $p < .02$, suggesting that direct teaching at the religious preschool might be responsible for the religiosity effect. However, within the lab sample, family religiosity still had an effect, with children from highly religious families ($M = .34$, SD = .41) more likely to claim that the events in religious books could happen than children

from less religious families ($M = .16$, SD = .32), $t(74) = 2.21$, $p < .05$.

Experiment 2

Findings from Experiment 1 indicate that children as young as 3 are skeptical of the real existence of most story characters, and also are able to differentiate fantasy from reality with regard to storybook events. These findings also suggest that children are not using the first heuristic to make reality status decisions about storybook characters; the majority of children at all ages denied that the characters in the stories were real in a historical sense. Results also indicate that children are not using at least one form of the third heuristic: Judge the character's reality status on the basis of whether the events in the story could really happen. Children's judgments about characters did not show the pattern of variation by condition displayed in their judgments of event possibility. Also arguing against the use of the third heuristic, religiosity was related to children's judgments of the possibility of the events, but not to judgments regarding the existence of the characters. It appears that, for the most part, children are using the second heuristic: Assume storybook characters are not real.

The goal of Experiment 2 was to probe more fully relations between children's beliefs about storybook factuality and beliefs about possibility. In Experiment 1 we asked children about the factuality of the characters and the possibility of the events. To obtain a more complete picture of these relations, in Experiment 2 children were asked about both the characters' real existence and their possible existence, and also whether the events really happened and if they could possibly happen. Because Experiment 1 revealed intriguing developmental differences between 4-year-olds and 5-year-olds in their judgments of religious books relative to both fantastical and realistic books, we focused on 4- and 5-year-olds in this experiment.

Method

Participants

One hundred and thirty-six children participated in the study. Participants were 71 4-year-olds ($M = 4;5$, range = 4;0–4;11) and 64 5-year-olds ($M = 5;5$, range = 5;0–5;11). Seventy females and 65 males participated. The children were predominantly Caucasian but from a range of ethnic backgrounds, including Hispanic American, Asian American, and African American. All children were recruited from a database of children from the local community, maintained by the psychology department.

Materials

Materials were nine children's books involving a human as the protagonist. There were three types of books: (1) realistic, in which people interact with family and/or friends (e.g. a boy climbs a mountain with his grandfather), (2) religious, in which people interact with God (e.g. God helps a man save people from a flood), and (3) fantastical, in which people interact with fantastical entities (e.g. a princess outsmarts a dragon). The books chosen for this experiment were a subset of those used in Experiment 1, with one exception. *Noah's Trees* was replaced with a more traditional retelling of the *Noah's Ark* story.

Procedure

Children were randomly assigned to the Realistic, Fantastical, or Religious condition. Participants were read three books in random order. After hearing each story, participants were asked a series of familiarity questions to determine whether or not they had heard the story before and, if so, where and how often they had heard it. For the character questions, the first question was a memory check, and asked if the main character was in the book that the participant had just heard (e.g. 'In the story was there a boy named Owen?'). The experimenter then either confirmed a correct answer, or reminded the participants who answered incorrectly that the character was, in fact, in the story. (There were 13 incorrect answers to this question out of a total of 208 responses; 94% correct.) Children were then asked the factuality question – whether the character from the story really existed (e.g. 'Is Owen a real person or is he just a person in the story?'). Children who responded that the character was not real were then asked the possibility question – whether the main character could represent someone in real life (e.g. 'In real life, could there be someone who is like Owen . . . or not?').

For the event questions, the memory check assessed whether the focal event had happened in the book. There were 49 incorrect responses to this question (out of 208; 76% correct). When children answered incorrectly, the experimenter opened the book and discussed with the child how the event had actually happened in the story. Children were then asked the factuality question – whether the focal event had really happened ('Did (focal event) happen in real life or just in the story?'). Children who answered that the event had not really happened were asked the possibility question – whether the event could happen in real life (e.g. 'In real life, could (focal event) happen or is that just in the story?'). Response options were alternated within each participant. The order of character and event questions was counterbalanced across all stories (half received character questions first, half received event questions first).

To assess children's religious background, parents were given the questionnaire used in Experiment 1. To further assess book familiarity, parents were also asked to rate their child's familiarity with each of the three books read to the child.

Results and discussion

Item analyses indicated that children responded similarly across the different books within each condition. Thus the books were grouped into the three intended storybook types – realistic, fantastical, and religious – and submitted to further analyses. Preliminary analyses revealed no effects of sex on children's responses to the focal questions.

Reality status of characters

Reality status of characters was assessed with two questions: (1) Factuality question: 'Is (the focal character) a real person or just a person in the story?' and (2) Possibility question: 'In real life, could there be someone who is like (the focal character) . . . or not?' Affirmative responses (for the Factuality question, responses that the character was real) were scored as 1 and negative responses ('in the story' for the Factuality question) as 0. Responses were averaged across the three books resulting in two average reality status scores for each condition.

Mean scores for the Factuality question, as shown in Figure 2, indicated that children were generally quite skeptical of the storybook characters' real existence. As the figure shows, 4-year-olds responded similarly across all conditions, whereas 5-year-olds' judgments varied by condition. A 2 (age) × 3 (condition) ANOVA confirmed the patterns shown in the figure. The ANOVA revealed no main effects, but revealed a significant age × condition
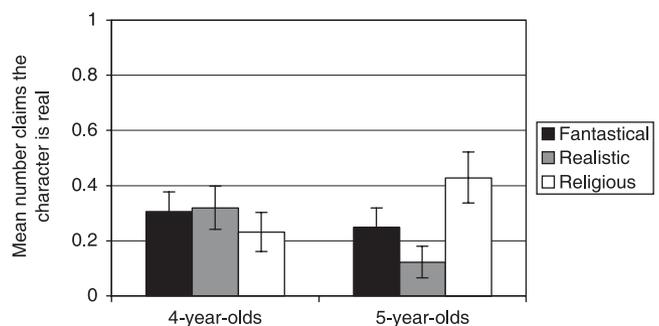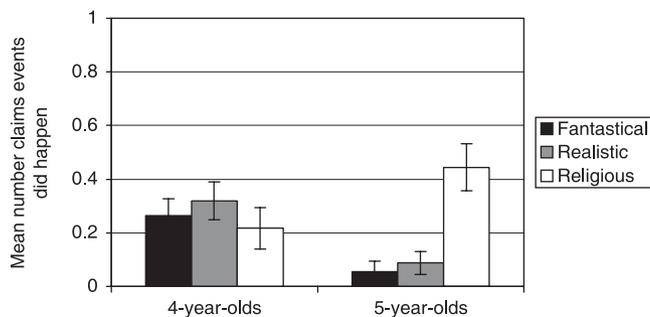

Figure 2 *Experiment 2: Mean number of claims character is real (+SE) by age and condition.*

interaction, $F(2, 129) = 3.39$, $p < .04$. Simple effects analyses for story types indicated that 4-year-olds responded similarly across all conditions (overall $M = .29$, SD = .36), whereas 5-year-olds who heard religious books ($M = .43$, SD = 42) responded significantly more often that the characters were real than did 5-year-olds who heard realistic books ($M = .12$, SD = .25), Fisher's PLSD, $\alpha = .01$. There was a trend for 5-year-olds who heard religious books to rate characters as real more often than did 5-year-olds who heard fantastical books ($M = .25$, SD = .34, $p = .09$). Simple effects analyses of age showed a trend for 5-year-olds to be less likely than 4-year-olds to claim that characters in realistic books really existed, $F(1, 42) = 3.66$, $p = .06$, and also a trend toward being more likely than 4-year-olds to claim that characters in religious books really existed, $F(1, 42) = 2.9$, $p = .09$.

For the Possibility question, a 2 (age) × 3 (condition) ANOVA revealed no main effects or interactions. Across age and condition children were only moderately likely to claim that the characters in the books could represent someone in real life ($M = .39$, SD = .42). This finding that children's possibility judgments did not vary as a function of story type, whereas judgments as to factuality did, reinforces findings from Experiment 1, suggesting that children were not using judgments about possibility to guide factuality claims.
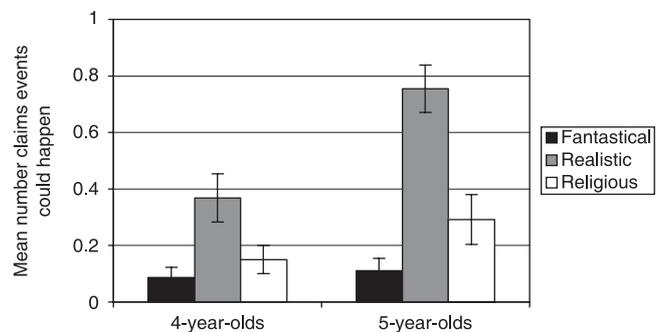
Reality status of events

Reality status of events was assessed with two questions as well: (1) Factuality question: 'Did (the event) happen in real life or did it just happen in the story?' and (2) Possibility question: 'In real life could (the event) happen or is that always just in a story?' Affirmative responses were scored as 1 and negative responses as 0. Responses were averaged across books resulting in two average reality status scores for each condition.

As shown in Figure 3, for the Factuality question, there was also significant skepticism about whether the events in the stories really happened. Four-year-olds responded similarly across all conditions regarding whether the events really happened (overall $M = .27$, SD = .34), whereas 5-year-olds' judgments varied by condition. A 2 (age) × 3 (condition) ANOVA confirmed these patterns. The ANOVA revealed a main effect of condition, $F(2, 129) = 3.60$, $p < .03$, as well as a significant age × condition interaction, $F(2, 129) = 7.36$, $p < .001$. Five-year-olds who heard religious books ($M = .44$, SD = .40) were significantly more likely to say that the events did happen than were 5-year-olds who heard fantastical ($M = .06$, SD = .19) and realistic ($M = .09$, SD = .19) books. Age comparisons revealed a significant decrease with age in factuality judgments for both realistic books, $F(1, 42) = 6.75$, $p < .02$, and fantastical books, $F(1, 46) = 7.9$, $p < .01$. These were accompanied by a trend toward an increase with age in factuality judgments for religious books, $F(1, 42) = 3.83$, $p = .06$.

The Possibility question assessed whether children believe that, even though the particular event in the story did not really happen, that sort of event could possibly happen. Figure 4 shows that children of both ages who heard realistic books judged the events as possible in reality more often than did children who heard fantastical or religious books. A 2 (age) × 3 (condition) ANOVA revealed significant main effects of age, $F(1, 120) = 11.49$, $p < .001$ and condition, $F(2, 120) = 27.53$, $p < .001$, and an interaction between age and condition, $F(2, 120) = 4.13$, $p < .05$. Simple effects analyses indicated that 4-year-olds who heard realistic books ($M = .37$, SD = .42) more often judged the events as possible in the real world than did 4-year-olds who heard both fantastical ($M = .09$, SD = .17) and religious ($M = .15$, SD = .22) books. Like the 4-year-olds, 5-year-olds who heard realistic books ($M = .75$, SD = .37) more often judged the events

Figure 3 *Experiment 2: Mean number of claims that events really happened (+SE) by age and condition.*

Figure 4 *Experiment 2: Mean number of claims that events could happen (+SE) by age and condition.*

as possible than did 5-year-olds who heard fantastical ($M = .11$, SD = .21) and religious ($M = .29$) books. These patterns, in conjunction with those from the factuality question, provide additional support for the claim that children are not using the third heuristic to make factuality decisions.

Analyses of age differences indicated that 5-year-olds ($M = .75$, SD = .37) judged the events in realistic books as possible significantly more often than did 4-year-olds ($M = .37$, SD = .42), $F(1, 41) = 10.13$, $p < .01$. These findings fit with the age trends found by Shtulman and Carey (2007) showing that an understanding of possibility is developing, and is becoming distinct from probability, between the ages of 4 and 8. This finding also appears to indicate that an appreciation of the relevance of events in realistic books to everyday life increases with age. It may be that an understanding of the notion of possibility facilitates such appreciation.

Effects of religiosity

Regarding factuality, religiosity scores were related to claims that more of the focal characters in religious books were real, $r = .30$, $p = .05$, and to claims that that more of the focal events in religious books really happened, $r = .32$, $p < .04$. There were no significant relations between realism judgments and religiosity.

In considering what aspects of family religiosity might contribute to greater belief in the reality of religious characters and events, one possibility is that children from religious families may be more familiar with the stories, having heard them perhaps at home, at church, in Sunday school, or other places. This greater familiarity may contribute to a stronger sense that the characters and events in religious stories are real. Using an average of children's and parents' familiarity ratings, we found that familiarity and religiosity were significantly positively related, $r (44) = .58$, $p < .001$. Familiarity and claims that the characters and events were real were also positively correlated, $r (44) = .29$, $p < .05$ and $r (44) = .36$, $p = .06$, respectively.

Overall, age, religiosity, and familiarity were all moderately correlated with claims that the religious events really happened, $rs = .35$, $.32$, and $.36$, respectively, all $ps < .05$. We used regression analyses to analyze the respective contributions of these variables to variation in children's claims about the reality status of the characters and events. Due to the large number of zeros in both dependent variables and the familiarity variable, the distributions for these variables were non-normal. Thus, we converted the data into simple dichotomous measures whereby any level of belief in the reality of the characters or events, or any level of familiarity, was coded as 1. These new dichotomous variables were then used in a Logistic

Regression including age, familiarity, religiosity, and the interaction terms as predictors. This analysis for events indicated that only age contributed significantly to the variance in the dichotomous dependent measure (Wald = 4.29, $p < .04$). Thus, a linear regression was performed on only those cases in which some degree of belief in the reality of the events was indicated ($n = 44$). This analysis revealed no significant predictors. In summary, age appears to predict whether children were likely to respond that at least one of the events really happened; however, there is not a linear relation between age and number of claims that events really happened.

General discussion

The goal of this research was to probe the development of children's understanding of the reality status of characters and events in storybooks. In discussing one of the children in his research, Applebee (1978) recounts, 'Carol is now beginning to ask about "true" and "not true" stories. This is a new development (at almost 5 years). Up until now everything has been accepted as real' (p. 39). Applebee and others have proposed that young children hold literal beliefs in fiction, and outgrow these with age (Applebee, 1978; Bettleheim, 1977; Tucker, 1981). Our findings, in contrast, reveal skepticism about the factuality of the characters and events in storybooks. However, results also reveal a growing appreciation with age that certain types of storybook events can represent reality. Results also reveal development in children's sensitivity to the distinction between the factuality of storybooks and their realistic nature. We will begin the discussion by addressing children's beliefs about factuality.

Factuality of characters and events in storybooks

Children were generally quite skeptical of the existence of characters in storybooks. Results from Experiment 1 revealed that 3-year-olds, when asked whether the characters in storybooks existed in the real world, were indeed more likely than older children to claim that they did. Yet overall scores were low, with only about one-third of 3-year-old children's responses reflecting belief that the characters were real. Experiment 2 also revealed moderate skepticism regarding the reality status of characters in books, but a growing increase in belief in the real existence of characters in religious books.

With regard to the factuality of events in storybooks, children were also fairly skeptical. In Experiment 2, less than one-third of the 4-year-olds responded that the events in all three types of books really happened, and less than 10% of the 5-year-olds claimed that the events

in realistic and fantastical books really happened. Thus, overall, by the age of 4, children seem aware of the fictional status of storybook events. However, whereas 4-year-olds hearing all three types of books treated them similarly in terms of their reality status, 5-year-olds who heard religious books more often claimed that the events really happened than did 5-year-olds who heard realistic or fantastical books. The difference between 4-year-olds and 5-year-olds appears to be due to two potentially independent trends. Five-year-olds were both more likely than 4-year-olds to claim that religious events really happened, and less likely to claim that realistic and fantastical events really happened.

What could account for these patterns? Results suggest that children are not solely relying on beliefs about possibility to guide judgments about factuality. One factor that might be related to children's ability to evaluate the factuality of fantastical stories may be their emerging awareness of how the events in the story fit with their world knowledge. Lee, Cameron, Doucette and Talwar (2002) presented children with a story about a girl who claimed that a ghost jumped out of her book and knocked over a glass. Children were asked both about who they thought broke the glass, and if they thought ghosts were real. Results showed that, with age, children were less likely to accept the girl's claim that the ghost had broken the glass. More importantly, though, independent of age, children who denied the reality status of ghosts were less likely to accept the girl's claim. This factor may help explain the decrease with age in the present study in claims that the fantastical events actually happened. Children who doubted whether dragons were real, for example, may have been less likely to accept the factuality of the events in that story. However, not only were older children more likely to reject the factuality of fantastical events, but they were more likely to reject the factuality of realistic story events as well. Thus it is also possible that a more general understanding of the nature of fiction is responsible for this pattern. Future research should be aimed at addressing the validity of these two explanations.

Possibility of characters and events

Children in Experiment 2 were asked to judge the possible existence of each character, in addition to the factuality. Children were only somewhat willing to accept that someone like the main character could exist in real life, with about one-third of all children assenting that someone like the story character could really exist. Unlike factuality judgments, these judgments were not affected by the story type. With regard to the events in the stories, children were also somewhat skeptical about the possibility of them happening in real life. However, certain types of

storybook events were considered to be possible in reality more often than other types of events. Even among the youngest children – the 3-year-olds in Experiment 1 – those who heard realistic books were more likely to claim that the events could happen in reality than were those who heard fantastical books. Likewise, 4-year-olds in both Experiments 1 and 2 who heard realistic books were more likely to claim that these events could happen in real life than were children who heard fantastical and religious books. There were also developmental differences. In Experiment 1, 5-year-olds hearing religious storybooks were equally likely as children hearing realistic ones to claim that the events could happen in real life. Across both experiments, older children were more likely than younger children to claim that storybook events, particularly religious and realistic ones, could really happen. These findings take on additional significance in light of children's sensitivity to the distinction between factuality and possibility.

Factuality vs. possibility

The results of these studies provide new evidence regarding children's ability to differentiate between factuality and possibility. Although 4-year-olds differentiated between whether the events did and could happen about half the time, 5-year-olds were almost twice as likely to acknowledge this possibility. When reading realistic fiction, to achieve any intended benefit, including acquiring knowledge about the world, it seems reasonable to assume that children must be able to understand that the events in the book, although fictional, are relevant to their daily lives. Our results appear to reflect an emerging understanding of the nature of realistic fiction, which may lay the foundation for learning about the world through books.

This distinction seems to appear earlier with regard to books than with regard to television. Work by Wright, Huston, Reitz and Piemyat (1994) shows that possibility, or what they term 'realism', judgments for television are generally higher across genres in older versus younger children, and that differentiation between genres in terms of realism increases between the ages of 5 and 7. Whereas 7-year-olds in their study differentiated between different types of shows in terms of their social realism, 5-year-olds did not. In the present research, preschool age children judged different storybook genres differently in terms of their possibility, and, by age 5, children were able to distinguish factuality from possibility within the genre of realistic storybooks. This difference might arise from children's greater familiarity with storybooks, or could also conceivably be related to the static nature of books versus the dynamic nature of television. It is also possible that this difference is due to the fact that

parents or other caregivers are more likely to be present when children are hearing storybooks that when they are watching television. Parents or other caregivers may provide children cues about the factuality and possibility of storybook events that they might not receive about television. For example, a parent might ask a child if they knew any boys, like Oliver Button, who liked to dance, or if they themselves liked to dance.

Another potential explanation for the developmental differences between the 4- and 5-year-olds in our research concerns children's understanding of possibility. Research by Shtulman and Carey (2007) indicates that although virtually all children between the ages of 4 and 8 differentiate real from impossible events, the ability to differentiate impossible from merely improbable events develops significantly during this age range. The youngest children in their studies, 4-year-olds, treated improbable and impossible events identically in judgments of their reality status. In our studies, 4-year-olds were also able to differentiate real from impossible events, as evidenced by their differential ratings with regard to whether the realistic events could happen versus the fantastical events. However, the lack of differentiation of factuality from possibility regarding the realistic books could reflect a limitation in young children's understanding of improbable events. Even though the realistic books were selected to represent ordinary everyday events, most 4-year-olds may have considered them improbable possibly because they had not personally experienced them. Because, according to Shtulman and Carey (2005), the distinction between improbable and impossible is still developing at this age, children claimed that these events could not really happen (i.e. were impossible). The development we observed between 4 and 5 years of age may reflect 5-year-olds beginning to understand that, although storybook events might be less likely to happen in their exact form in real life, it is at least possible that they could happen.

Children's religious cognition

One unique contribution of this research is to situate children's beliefs about religious stories alongside their beliefs about fantasy and reality. Although there is a long tradition in anthropology, history, and theology of studying interrelations between magic and religion, it is only recently that researchers in developmental psychology have begun to probe relations between children's beliefs about fantasy, reality, and religion (see e.g. M. Taylor & Carlson, 2000; Woolley, 2000). The findings of this experiment suggest a gradual differentiation of the three domains of reality, fantasy, and religion as portrayed in storybooks. In Experiment 1, both 3- and 4-year-olds treated religious stories similarly to fantastical stories in terms of the possibility of the events really happening. But by age 5, children had elevated events in religious storybooks almost to the status of events in realistic storybooks, and thus were thinking about them very differently than were the 4-year-olds. This age difference between the 4- and 5-year-old children was replicated in Experiment 2.

Results indicate that this change may be due in part to religious background, although the findings from these two studies are not entirely conclusive. In our ongoing research we are attempting to discern what aspects of religious background, including familiarity with the stories, might contribute to children's beliefs, as well as probing what aspects of the religious stories themselves might play a role. Perhaps the simple presence of God in a story confers reality upon the events. Another possibility is that children are picking up on the historical nature of the names of the characters. To assess these factors, we are presenting children with stories that describe impossible events, some based on familiar Bible stories and some based on unfamiliar stories (Cox & Woolley, 2006). In addition to manipulating familiarity, we also manipulate reference to God and the modern versus historical names of the characters. Our goal is to tease apart the nature of the effects we found with regard to children's religious cognitions in this study.

In conclusion, the primary goal of this research was to capture the beliefs children have about the characters and events in the types of storybooks they hear in their everyday lives. Results revealed an earlier differentiation of fantasy and reality than had been found in previous studies on this topic. This may be due to hearing storybooks in their entirety, rather than being asked about isolated events. Consistent with other studies, these results revealed an increasing differentiation of different types of content in storybooks during the preschool years. However, development during these years appears to consist, not just in coming to understand that fantastical characters and events in books are not real, but in coming to understand that characters and events in other types of books can represent real people and events. This finding has important implications for children's cognitive development. Many children's books attempt to teach children about the real world – what it is like to be a firefighter, how animals survive winter, even how to be a friend. If indeed children are initially skeptical about the real-world relevance of these sorts of books, readers might want to be particularly explicit to their preschool-age listeners about their representation of reality. Finally, this research contributes to an understanding of how children's beliefs about religious characters and events fit into their basic ontologies, which adds to the growing literature on children's metaphysical thinking.

Appendix A: Adult book rating questions

1. Please categorize this book as one of the following:

   (Fantastical books involve entities that aren't real and/or events that don't happen in everyday life (non-religious), realistic books involve real people and/or everyday events, religious books deal with parables, teachings, customs, and belief in the Judeo-Christian religion.)
   A. Fantastical   B. Realistic   C. Religious

2. For however you categorized the book, please rate it in terms of how (category you selected in #1) it is:

1	2	3
a little bit fantastical/ realistic/ religious	moderately fantastical/ realistic/ religious	highly fantastical/ realistic/ religious

Appendix B: Final book selection and ratings

	Assessment of how Real/Fantastical/ Religious
Realistic books	
Oliver Button is a sissy	2.4
Owen and the mountain	2.5
Tonight and tomorrow	2.4
Dinner's ready Jessie	2.8
Fantastical books	
Paper bag princess	2.8
There's something in the attic	2.5
Moon soup	2.9
Dad's dinosaur day	2.8
Religious books	
Jonah and the whale	2.8
David and Goliath	2.4
Noah's trees	2.8
Does God tie his shoes?	2.4

Appendix C: Parent religiosity questionnaire

1. Do you have a religious affiliation?   *Yes   No*
   1a. If so, what is your religious affiliation?

2. (If you said *yes* to #1) How would you classify your level of involvement with your religion?
   Very active   Moderately active   Inactive

3. (If you said *yes* to #1) If you are active, what sort of religious activities do you engage in?
   At home:
   In your place of worship:

4. Do you talk with your child about religion? *Yes No*
   4a. If so, how often do you and your child talk about religion?
   Frequently   Sometimes   Not often
   (more than 5 times/week) (1–5 times/week) (less than once/week)

5. How strongly do you encourage your child's involvement in religious activities?
   Very strongly   Moderately   Not at all

6. Please list any religious activities in which your child participates.
   At home:
   At your place of worship:

7. How often would you say your child engages in the sorts of activities you listed above?
   Frequently   Sometimes   Infrequently
   (more than 5 times/week) (1–5 times/week) (less than once/week)

Acknowledgements

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