



## Return of the Candy Witch: Individual differences in acceptance and stability of belief in a novel fantastical being

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Recent research indicates that preschoolers make sophisticated choices in accepting testimony as a source of knowledge. Nonetheless, many children accept fantastical beings as real based on misleading testimony. The present study probes factors associated with belief in a novel fantastical figure, the Candy Witch, that 3- to 7-year-olds heard about at school. Short-term belief was predicted by an interaction of age, existing beliefs in fantastical figures, and whether the child was 'visited' by the Candy Witch. Stability of belief was assessed over the course of 3 weeks and again 1-year later. First year results revealed three patterns of belief: stable belief, wavering belief and stable non-belief. First year belief status was not related to age, but older children from the stable belief group were more likely than younger children to disbelieve 1-year later. The discussion presents a new proposal for the trajectory from belief to disbelief and an updated perspective on the role of individual differences in belief.

Much of what children learn about the world is not the result of direct first-hand experience. Rather, children often rely on indirect sources of evidence, such as clues, inferences, and the verbal testimony of others to come to conclusions about the way the world works (Harris, 2002; Harris, Pasquini, Duke, Ascher, & Pons, 2006). Because children often rely on testimony from others, they face the possibility of misinformation. In fact, children are often deliberately misled, albeit in what the misleaders believe to be their best interests (see, e.g. Dawkins, 1995). Such well-intended parental misinformation may be used to ensure children's compliance with safety rules, morals, and other behavioural standards. In other instances, misinformation is provided by parents who seek to enhance what they see as the wonder of childhood, which is one of the reasons they encourage their young children to believe in fantastical beings (Clark, 1995).

In the US, many young children believe in the existence of fantasy figures such as Santa Claus, the Easter Bunny, and the Tooth Fairy (Prentice, Manosevitz, & Hubbs,

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1978; Rosengren, Kalish, Hickling, & Gelman, 1994; Sharon & Woolley, 2004). However, belief in such figures declines steadily in the early elementary school years. For example, Prentice *et al.* (1978) found that 85% of 4-year-olds but only 65% of 6-year-olds and 25% of 8-year-olds expressed firm belief in Santa Claus. The traditional explanation of the prevalence of fantasy beliefs in early childhood is that young children have limited first-hand experience of the world and little understanding of physical causality and therefore accept adults' explanations of novel events without question (Dawkins, 1995; Piaget, 1929; *cf.* Rosengren *et al.*, 1994). According to Dawkins (1995), young children's credulity promotes rapid learning of important safety rules (e.g. 'Do not swim in that lake, there are alligators in it that might eat you.') but also results in beliefs in fantastical beings and a variety of other non-truths. The underlying claim is that children are fundamentally different from adults in their ability to distinguish fantasy from reality (*cf.* Woolley, 1997).

Recent work, however, indicates that children do not, in fact, believe everything adults tell them, but instead display limits to their credulity (Jaswal, 2004; Koenig, Clement, & Harris, 2004; Lee, Cameron, Doucette, & Talwar, 2002). Jaswal (2004) found that 3- and 4-year-olds pay attention to adults' intentional cues when determining whether their testimony is veridical. For example, if an adult says something counter-perceptual, such as naming a cat-like animal a dog rather than a cat, children are more likely to accept the label if the adult makes a reference to the unexpectedness of the label (e.g. 'You're not going to believe this, but this is actually a dog!') than when no cues to intention are available. Koenig *et al.* (2004) found that preschoolers do not accept testimony from adults indiscriminately when learning new words. Rather, they keep track of whether the adult has provided correct information in the past. In their study, children who could track an informant's reliability preferentially used testimony provided by accurate over inaccurate informants. Lee *et al.* (2002) found that 5- and 6-year-olds use their world knowledge about reality versus fantasy to determine when a person is not telling the truth. For example, after hearing someone say that a ghost jumped out of a book and broke a glass, 6-year-olds assumed that the speaker was lying to hide her misdeed.

These studies show that preschool children do not accept all information from adults as veridical. Rather, children appear to be able to use at least three cues in deciding whether to accept new information: (1) inferences about what the speaker intended to communicate, (2) the speaker's credibility, and (3) how consistent the speaker's information is with the child's own knowledge. These cues are frequently mentioned to explain adults' ability to detect deception (e.g. DePaulo *et al.*, 2003; Park, Levine, McCormack, Morrison, & Ferrara, 2002). Importantly, most research on adults' deception detection indicates that these efforts are successful only about 54% of the time (Bond & DePaulo, 2006). Thus children may not, in general, be more credulous than adults are.

Recent research also indicates that children are more adept at distinguishing fantasy from reality than the traditional view espouses. For example, research by Sharon and Woolley (2004) found a significant increase in the ability to correctly categorize a wide range of entities as either real (e.g. child; clown) or fantastical (e.g. Superman, monster) between 3 and 5 years. In this study, 3-year-olds systematically assigned human-like characteristics, such as the need to sleep and an inability to be in two places at once, to entities they had classified as real but not to those they had classified as fantastical. Thus, despite misidentifying some fantastical entities as real, even very young children seemed to expect that real entities have characteristics that distinguish them from fantastical entities.

Given children's ability to evaluate information from other people, combined with their increasing ability to properly assign reality status, it seems wrong to assume that their belief in fantastical beings results from either overall credulity or an inability to distinguish fantasy and reality. Yet, belief in certain event-related fantastical entities, most notably Santa Claus, the Easter Bunny, and the Tooth Fairy, remains prevalent in the same age range as children's ability to differentiate fantasy from reality in general increases. What is it about these event-related fantastical figures that promotes continuing belief? Several possibilities have been suggested. These entities are represented as specific individuals with characteristics that are well-known to most members of the community and frequently discussed with children (Anderson & Prentice, 1994; Harris *et al.*, 2006). They are also closely associated with specific seasons of the year (e.g. Santa Claus with Christmas) or events in the child's life (e.g. the Tooth Fairy with the loss of a baby tooth) that are often emotionally charged (Clark, 1995). In addition, parents and other adults frequently encourage behaviours (e.g. writing letters to Santa Claus) that give children a sense of having interacted with the entities (Clark, 1995; Rosengren *et al.*, 1994). All of these factors should make it easier for children to develop rich representations of the entities and to consider these representations to be of actually existing entities.

Although researchers have studied beliefs in familiar fantastical beings such as Santa Claus and the Tooth Fairy (Anderson & Prentice, 1994; Baxter & Sabbagh, 2005; Principe & Smith, 2008; Prentice *et al.*, 1978; Rosengren & Hickling, 1994; Rosengren *et al.*, 1994), there is very little information on how children form these beliefs in the first place. It is difficult to study this process using familiar fantastical beings for two primary reasons. First, by the time children are old enough to be interviewed or tested, many have already formed beliefs in Santa Claus, the Easter Bunny, and the Tooth Fairy, and have held these beliefs for varying lengths of time. To assess what factors promote initial acceptance we need to interview children when these beliefs are beginning to take shape. Second, the sources of these beliefs are multiple and varied. Children learn about these fantastical beings from their parents, siblings, and from various forms of media. In part due to this, different children hear different sorts of things about these beings. With regard to the Tooth Fairy, in particular, there is great variety in, for example, how children 'package' the lost tooth, how much money children receive, how their parents explain what she does with all the teeth, and how much detail children provide about their Tooth Fairy knowledge and experience (Principe & Smith, 2008). It is thus difficult to tease apart what each of these factors contributes to children's notions of how these beings work and to their acceptance of these entities as real. Only by creating a novel fantastical being and introducing him/her to children can we control the conditions that lead to initial acceptance and belief.

In an initial attempt at addressing these issues, Woolley, Boerger, and Markman (2004) examined factors that influenced preschool-age children's belief in a novel fantastical entity, the Candy Witch. Researchers introduced children to the Candy Witch before Halloween and interviewed them twice about their beliefs: once immediately after Halloween, and again one year later. Approximately, half the children experienced a visit from the Candy Witch on Halloween night; they set aside some portion of their Halloween candy to be exchanged, by the Candy Witch, for a new toy. Children in the no visit condition heard about the Candy Witch at their preschool, but were not visited by her on Halloween night. Results revealed that children's level of belief in the Candy Witch was closely related to their other fantasy beliefs. At both the initial interview and the 1-year follow-up interview, the number of other fantastical figures children believed

in was positively correlated with their level of belief in the Candy Witch. In addition, among children in the no visit condition, children with a high fantasy orientation expressed a higher level of initial belief than those with a low fantasy orientation.

Although level of belief in the Candy Witch did not differ between younger and older children during either the first year interview or the 1-year follow-up, the initial beliefs of older preschoolers (4- to 5-year-olds) were significantly associated with two factors hypothesized to support belief, whereas younger preschoolers' beliefs were not (Woolley *et al.*, 2004). Specifically, among older preschoolers, children in the visit condition showed higher levels of belief than their counterparts in the no visit condition, and belief in the Candy Witch was positively correlated with the extent to which children preferred toys over candy. These findings suggest that for younger preschoolers, initial belief might reflect a general predisposition to accept information from adults as true to the extent that it is consistent with existing beliefs (e.g. belief in other fantasy figures) but that older children's beliefs are more dependent upon additional factors, such as their indirect experience with the entity or the extent to which the entity's alleged behaviour furthers their own desired ends.

The current study attempted to address some unanswered questions raised by Woolley *et al.*'s (2004) study. First, Woolley *et al.* (2004) interviewed only preschool-age children and found equivalent levels of belief among younger and older children. In the present research we extended our age range to include early elementary school children. Previous research on the age at which children give up belief in Santa Claus indicates that this occurs on average at 6 years 6 months to 7 years of age, following a period of gradually increasing doubts about various aspects of 'the Santa Claus myth', for example that his sleigh is pulled by flying reindeer (Anderson & Prentice, 1994). Despite this, very few studies of children's ability to differentiate fantasy from reality include children older than preschool-age. Our goal was to chart the trajectory of belief into the early elementary school years. We expected that the early elementary school children might be less likely than preschoolers to initially accept the Candy Witch as real, or that that their beliefs about her might be more variable. Based on Woolley *et al.*'s (2004) findings, we also expected that belief in the Candy Witch among elementary school children might be more closely associated with individual difference factors such as fantasy orientation and participation in the visit condition than would the beliefs of the younger children.

We also attempted to assess the stability of children's beliefs through the use of multiple and varied measures of belief. Although Woolley *et al.* (2004) obtained a measure of belief 1 year later, their measure of early belief was obtained by the use of only one question in which children were asked to state whether the Candy Witch was real or pretend. In our study, over the course of a 2-week period, we assessed belief a total of five times, using three different measures. This allowed us to investigate stability of belief, as well as yielding the potential to uncover different levels of belief that might not have been accessible using just the standard Reality Status Question measure.

A second goal was to explore the role of parental encouragement of belief. Parental encouragement of belief has frequently been cited as an important factor in children's belief in traditional fantasy figures such as Santa Claus (Anderson & Prentice, 1994; Baxter & Sabbagh, 2005; Prentice *et al.*, 1978; Rosengren & Hickling, 1994; Rosengren *et al.*, 1994). Yet results have been inconclusive. Prentice and Gordon (1986) interviewed Jewish children 3–10 years of age about their beliefs in Santa Claus and the Tooth Fairy as well as administering a questionnaire to parents about their encouragement of these figures. Parental encouragement of belief in these fantasy

figures was not found to be related to children's beliefs. Rosengren and Hickling (1994) found a significant relationship between parents' reports of the number of fantasy characters that they encouraged their children to believe in and the number of characters that their children believed were real. Similarly, they found a relationship between parents' reports of the number of fantasy characters they had believed in as children and the number their young children believed were real. Regarding the Candy Witch specifically, Woolley *et al.* (2004) did not find an effect of parental encouragement on belief; however this may have been due to their small sample size.

Finally, we explored further the role of fantasy orientation in children's belief in the Candy Witch. Although individual differences are commonly found in the extent to which preschoolers and early elementary school children create imaginary companions and engage in imaginative play, debate continues about whether these differences are related to children's ability to distinguish fantasy and reality. One possibility is that children who are frequently immersed in fantasy and imaginative play are more likely to confuse their imagined representations for representations of real events. Bouldin and Pratt (2001) found that children with imaginary companions were more likely than other children to believe that an imagined monster had materialized inside a tent, but other studies have found no relationship or a negative relationship between fantasy orientation and fantasy beliefs (Dierker & Sanders, 1996/1997; Prentice *et al.*, 1978; Taylor, Cartwright, & Carlson, 1993; *cf.* Sharon & Woolley, 2004; Singer & Singer, 1981). Woolley *et al.* (2004) found that fantasy orientation was positively related to belief in the Candy Witch, especially among children who were not visited by the Candy Witch, but unrelated to the number of familiar fantasy figures children believed in. This suggests that fantasy orientation may predispose children to initially accept a novel entity as real, but have little effect on maintenance of belief.

## Method

### Participants

Participants were 81 children recruited from the preschool classrooms at a university child-care centre ( $N = 51$ ) and the kindergarten and first grade classrooms at a private elementary school ( $N = 30$ ). Four children did not complete several measures of belief in the Candy Witch and were excluded from the analyses. This left a final sample of 77 children (39 girls), including 50 younger children ( $M = 4$  years 8 months, range = 3 years 1 month–5 years 5 months) and 27 older children ( $M = 6$  years 7 months, range = 5 years 6 months–7 years 6 months). Most children were from middle-class backgrounds. Most children (80%) were European American, 7.5% were Asian American, 7.5% were Hispanic, and 5% were Middle Eastern.

Because of the personal nature of our request that parents help us create belief in a novel fantasy figure, it was impossible to assign children to conditions. Thus, parents self-selected into one of two conditions, *visit* and *no visit*, and various measures were taken to assess pre-experiment equivalence of parent groups (discussed following). Several weeks before Halloween parents were sent an information letter and consent form in which they were offered two-levels of participation. Parents who consented to their child's participation in the *visit condition* agreed to simulate a visit from the Candy Witch on Halloween night. These parents were provided with their choice of several small toys (a stuffed dog, a set of plastic dinosaurs, or a set of children's art supplies). After children were asleep on Halloween night, parents removed the children's candy

and put the toy in its place. Parents who consented to their child's participation in the *no visit condition* did not simulate the Candy Witch visit. Both groups gave permission for their children to be interviewed about the Candy Witch at school. Forty-nine children participated in the visit condition (30 younger:  $M = 4$  years 8 months; range = 3 years 8 months - 5 years 4 months, and 19 older:  $M = 6$  years 7 months; range = 5 years 6 months - 7 years 6 months) and 28 participated in the no visit condition (20 younger:  $M = 4$  years 8 months; range = 3 years 1 month - 5 years 5 months, and 8 older:  $M = 6$  years 7 months; range = 6 years 0 month - 7 years 6 months).

All children who completed the first year assessments were invited to return for a follow-up study the following October. Thirty-seven children (22 girls) participated, including 26 from the visit condition (15 younger:  $M = 5$  years 9 months, range = 4 years 8 months - 6 years 4 months and 11 older:  $M = 7$  years 8 months, range = 6 years 8 months - 8 years 5 months) and 11 from the no visit condition (6 younger:  $M = 5$  years 8 months, range = 5 years 5 months - 6 years 0 month, and 5 older:  $M = 7$  years 6 months, range = 7 years 1 month - 8 years 0 month). The follow-up sample did not differ significantly from the first year sample in ethnic diversity, the percentage of children in each condition or in the percentage of children who believed in the Candy Witch during the first year interviews.

### **Tasks and procedures**

In the 2 weeks prior to Halloween all children in participating classrooms were introduced to a novel entity, the Candy Witch, through two activities at their school. The first activity was a researcher-led discussion of Halloween in each classroom. During this discussion, the researcher showed the children a picture of a Candy Witch doll and told them that the Candy Witch is a nice witch who only eats candy, and who gives children new toys in exchange for candy on Halloween night. Children were told that the Candy Witch only comes to the homes of children who ask her to come and were taught a phrase to say with their parents on Halloween night if they chose to have the Candy Witch visit their home. Only parents and children in the visit condition recited this phrase. At no time did the researcher address the reality status of the Candy Witch. This presentation closely followed the script provided by Woolley *et al.* (2004).

For the second activity, a different researcher helped children make a Candy Witch puppet. A second researcher was used to suggest implicitly that several adults know about the Candy Witch, as is the case with most familiar fantastical beings. After completing their puppets, children whose parents had returned consent forms prior to this activity were asked three questions about the Candy Witch: (1) 'Is the Candy Witch big or small? (2) Is the Candy Witch nice or mean? and (3) Is the Candy Witch real or pretend?' The first two questions were included to deemphasize our interest in the Candy Witch's reality status; responses to these questions were not analyzed. These questions constituted the *pre-Halloween interview*.

After Halloween, children were interviewed individually three times: (1) *post-Halloween interview 1*, which was conducted the week after Halloween, (2) *post-Halloween interview 2*, which was conducted 2 weeks after the first interview, and (3) *1-year follow-up*, which was conducted the following October a few weeks prior to Halloween.

As part of the first year assessment, parents also completed questionnaires concerning their encouragement of belief in the Candy Witch. They were also asked about their own past beliefs in and level of encouragement of other fantastical figures

(see Appendix A for questions used in analyses; complete questionnaire is available upon request.) These last questions were used to assess whether the two parent groups differed in ways that were not unique to the Candy Witch study.

#### *Post-Halloween interview 1*

This session began with an open-ended question about what the child 'liked best' about Halloween followed by several open-ended questions assessing children's knowledge about the Candy Witch. These included a general question ('Can you tell me something about the Candy Witch?') and more specific questions about whether she had visited the child's home and, if she had, what she had done there. Next children completed the Reality Status Questionnaire (RSQ) in which they were asked whether a number of entities including the Candy Witch were real or not real. The other entities included two familiar real entities (mother and pet), 2 event-related fantastical beings (Santa Claus, Easter Bunny), 2 generic fantastical beings (witch, fairy), and one fictional entity (Cinderella). The name of each entity (e.g. mother, witch) was written on a laminated  $4\frac{1}{4} \times 11$ " sheet of construction paper. These sheets were pulled out of a bag in a different random order for each child. Children were shown the sheet and told 'This card says \_\_, what do you think, is \_\_ real or not real?' The order of response options was the same across all entities and children.

#### *Post-Halloween interview 2*

During this interview, participants watched two videos of children enacting a scripted debate regarding whether the Candy Witch was real, and then were asked to indicate with whom they agreed. For example, in one video the first actor said, 'She's not real! I've never seen her in real life,' and the second actor said, 'She *is* real! I saw her at my house after she left my new toy.' The actors in the videos were the same sex as the participants but slightly older. After watching each video, participants were asked what each child had said about the Candy Witch (i.e. to identify which child had said she was real and which had said she was not real) and were given feedback about their accuracy ('That's right, s/he said the Candy Witch is (not) real' or 'Actually, s/he said the Candy Witch is (not) real'). Children were then asked 'Who's right? The boy/girl who said she's real or the one who said she's not real? Point to the one who's right.'

Between the first and second videos, participants completed three measures of fantasy orientation (FO): an Imaginary Companion and impersonation interview (Taylor & Carlson, 1997; Taylor *et al.*, 1993); Singer's (Singer & Singer 1981; 1990) imaginative play predisposition (IPP) interview, and Taylor's (2005) pretend phone call task (see Appendix B). In the imaginary companion and impersonation interview, children were asked whether they had an imaginary friend and whether they ever pretended to be an animal; another person, and/or anything else, such as a plane or a machine. Each of the four questions was coded as 1 when the children said they had an imaginary companion or pretended to be an entity and 0 when they said they did not. An average score ranging from 0 to 1 was created by averaging the four scores. In the Singer IPP interview, children were asked to name and describe their favourite game, favourite toy, to say whether they talked to themselves in bed at night, and what they thought about before they went to sleep. Responses with clear fantastical elements (e.g. a mermaid), were coded as high fantasy (1), responses that were representational but not necessarily fantastical (e.g. a toy train) were coded as moderately fantastical (.5) and responses that

were physical activities or games with rules (e.g. baseball or checkers) were coded as low fantasy (0). The average IPP score ranged from 0 to 1. Two independent judges coded all of the IPP questions. The first and second questions regarding children's favourite game and toy both resulted in 97% agreement (Cohen's  $\kappa = .95$ ). The last question regarding what children talk about before they go to sleep resulted in 93% agreement (Cohen's  $\kappa = .86$ ). All disagreements were resolved by the judges. Children's participation in the phone task was scored for four behaviours: dialling a phone number, holding the phone to their ear, pretending to talk to their friend, and pretending to listen to their friend responding. One-point was given for each behaviour and scores were averaged, resulting in a range from 0 to 1. These were all significantly intercorrelated: phone task and IPP,  $r(73) = .26, p < .05$ , phone task and pretend score,  $r(74) = .32, p < .01$ , and IPP and pretend score,  $r(75) = .26, p < .05$ . Scores were averaged to create a composite Fantasy Orientation score, which was used in the main analyses.

At the end of the session, children were simply asked whether they thought the Candy Witch was real or not real.

#### *One-year follow-up interview*

At the beginning of this interview children were shown the picture of a Candy Witch doll that had been used in the classroom presentation the previous year and asked 6 open-ended questions that tested their memory for information from the classroom presentation. Questions included whether the Candy Witch is nice or mean; what her favourite food is; when she comes to children's houses; whether she comes to all children's houses or only some; what children do to invite the Candy Witch to their houses, and what she does there. All children answered at least two of the questions correctly indicating that they had retained some memory of the Candy Witch. Next children completed the RSQ, following the procedure used during post-Halloween interview 1.

## **Results**

Preliminary analyses revealed no sex differences in children's judgments of any real or fantastical entities, including the Candy Witch, or in any measures of factors hypothesized to be related to belief. Therefore, sex was not included as a factor in the main analyses.

Children's responses to the question about their favourite Halloween activity were examined to assess the extent to which the children from ethnic minority backgrounds had similar Halloween experiences to the European-American children. Most children ( $N = 67$ ) referred to either traditional American Halloween practices (e.g. wearing a costume and going door-to-door to ask for candy) or to the Candy Witch visit. Nine of the 10 children who gave other types of responses (e.g. 'It was fun!') were from European-American families.

#### ***Predicting belief in the Candy Witch immediately after Halloween***

The RSQ completed during post-Halloween interview 1, probed children's beliefs regarding the reality status of the Candy Witch and other real and fantastical entities. A logistic regression was used to determine which of the variables measured in this study (age in months, visit condition, number of familiar fantastical figures considered real, fantasy orientation, and parental encouragement) best-predicted responses that the Candy Witch was real. A seven-predictor logistic model was found to be the best fit

model, indicating that three variables: age, condition, and the number of familiar fantastical figures considered real, interacted to provide the best prediction of claims that the Candy Witch was real ( $\chi^2(7) = 22.55, p = .002$ , Nagelkerke  $R^2 = .377$ ). See Table 1 for more information regarding the prediction formula and the Logistic Regression output.

**Table 1.** Logistic regression model predicting immediate Post-Halloween belief in the Candy Witch

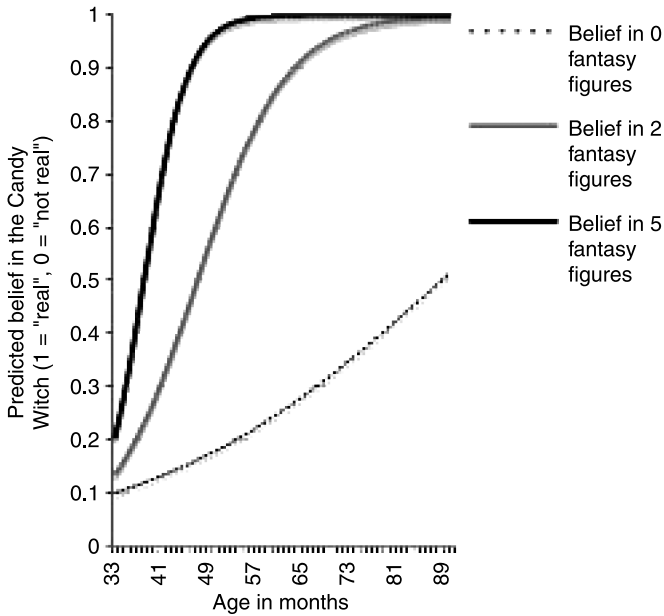
Predictor	$\beta$	SE $\beta$	Wald	df	p	Odds ratio $e^{\beta}$
Constant	-3.065	4.308	.506	1	.477	-
Age	.039	.069	.312	1	.576	1.039
Visit	-.475	5.632	.007	1	.933	.622
Fantastical figures (FF)	2.097	1.837	1.303	1	.254	8.144
Age $\times$ visit interaction	.001	.087	.000	1	.986	1.001
Age $\times$ FF interaction	-.025	.029	.729	1	.393	.975
Visit $\times$ FF interaction	-3.479	2.331	2.228	1	.135	.031
Age $\times$ visit $\times$ FF interaction	.072	.040	3.159	1	.075	1.074

Note. The prediction formula is as follows: Predicted logit of (BELIEF) = 3.065 + (.039)\*AGE + (.475)\*VISIT - (2.097)\*FANTASTICAL FIGURES - (.001)\*AGE  $\times$  VISIT-INTERACTION + (.025)\*AGE  $\times$  FANTASTICAL FIGURES-INTERACTION + (3.479) VISIT  $\times$  FANTASTICAL FIGURES-INTERACTION - (.072)\*AGE  $\times$  VISIT  $\times$  FANTASTICAL FIGURES-INTERACTION.

Figure 1 depicts the probability of belief in the Candy Witch among children in the visit condition as a function of age and the number of familiar fantasy figures considered real. Among the younger children, those who believed in all five familiar fantasy figures were more likely to believe in the Candy Witch than those who believed in two familiar fantasy figures. Among the older children, those who believed in two familiar fantasy figures were more likely to believe in the Candy Witch than those who did not believe in any familiar fantasy figures. Thus, although the number of familiar fantasy figures children believed in decreased with age among the visit condition children ( $M_{\text{younger}} = 3.1, SD = 1.5; M_{\text{older}} = 2.0, SD = .9, t(47) = 3.1, p < .01$ ), children who believed in more familiar fantasy figures relative to their age-mates were more likely to accept the Candy Witch as real than those who believed in fewer fantasy figures.

Figure 2 suggests that age and belief in familiar fantasy figures interacted in a different way among the children who were not visited. Inspection of Figure 2 indicates that probability of belief was both higher and more dependent upon the number of familiar fantasy figures considered real among the younger children than the older children. Among younger children, those who believed in all five familiar fantastical figures were more likely to believe in the Candy Witch than their peers who believed in two familiar fantastical entities. However, among older children, the probability of belief in the Candy Witch was approximately 50%, regardless of the number of familiar fantasy figures they considered to be real.

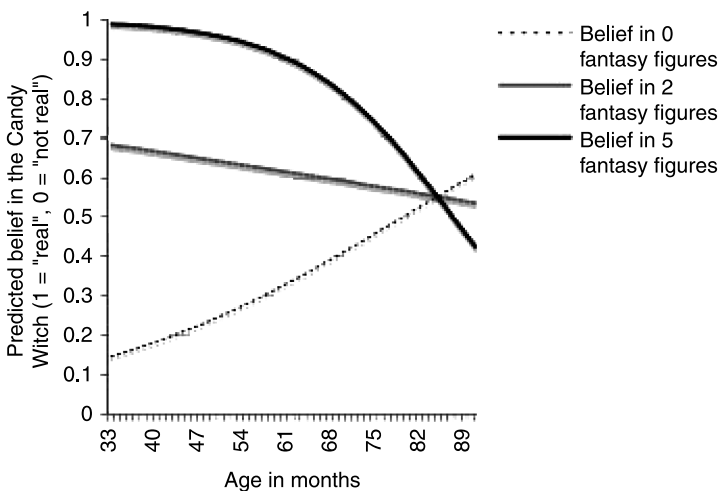
Considered together, the two figures suggest that different factors supported belief among the younger and older children. Among the younger children, belief in many familiar fantasy figures predicted belief in the Candy Witch in both the visit and no visit condition. Among the older children, belief in some familiar fantasy figures predicted belief in the Candy Witch, but only among children in the visit condition.



**Figure 1.** Prediction of visited children’s immediate post-Halloween belief in the Candy Witch based on their age and belief in other fantastical figures.

**Stability of belief in the Candy Witch across interviews and measures**

Belief in the Candy Witch was assessed with five measures collected across the three first year interviews and one measure completed at the 1-year follow-up. The measures included the CW real question (‘Is the Candy Witch real or pretend?’), which was asked during the pre-Halloween interview and at the end of the second post-Halloween



**Figure 2.** Prediction of not-visited children’s immediate post-Halloween belief in the Candy Witch based on their age and belief in other fantastical figures.

interview; the Candy Witch question from the RSQ completed during the first post-Halloween interview and at the 1-year follow-up interview, and children's judgments of which actor was right after watching each of the two peer debate videos during the second post-Halloween interview.

Table 2 shows the percentage of children who claimed the Candy Witch was real on each measure. On each measure, more children described the Candy Witch as real than described her as not real. The percentage of real judgments did not differ by age group on any of these measures,  $\chi^2(1) = 1.4-3.2$ , all  $p > .05$ . Condition was associated with belief in the Candy Witch on two of the four post-visit measures: the CW real question from post-Halloween interview 2 (visit condition  $N = 48$ , 93.8% real; no visit condition  $N = 26$ , 73.1% real,  $\chi^2(1) = 5.9$ ,  $p < .02$ ,  $\phi = .3$ ) and the RSQ Candy Witch question from the 1-year follow-up interview (visit condition  $N = 26$ , 76.9% real; no visit condition  $N = 11$ , 36.4% real,  $\chi^2(1) = 5.5$ ,  $p < .02$ ,  $\phi = .3$ ).

**Table 2.** Percentage of children describing the Candy Witch as real on each measure

Session	Measure	Real	$\chi^2(1)$
Pre-Halloween	CW real question ( $N = 64$ )	67.2	7.6**
Post-Halloween 1	RSQ ( $N = 74$ )	75.7	19.5***
Post-Halloween 2	Video task 1 ( $N = 77$ )	81.8	38.4***
	Video task 2 ( $N = 76$ )	85.5	28.7***
	CW real question ( $N = 74$ )	86.5	39.4***
One-year follow-up	RSQ ( $N = 37$ )	64.9	4.3*

Note. Real > non-real judgments; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

Table 2 provides additional details regarding the trajectory of belief over the initial 2-week period and after a year. McNemar tests revealed a significant increase in 'real' judgments between session 1 (in response to the initial reality status question) and session 2 (in response to both the second video task and the CW real question that ended post-Halloween interview 2), both  $p < .03$ . However, significantly fewer children described the Candy Witch as real in the follow-up RSQ than on these post-Halloween interview 2 measures, both comparisons by McNemar test,  $p < .03$ . Thus there was an increase in belief in the Candy Witch during the initial 2-week period, but this increase did not persist to the 1-year follow-up interview.

We also examined stability and change in individual children's beliefs across measures. Forty-one children (53%) made up what we called the *stable belief* group, that is, they said the Candy Witch was real on all first year measures. Thirty-two children (42%) made up the *wavering belief* group. These children changed their responses across measures. Finally, the *stable disbelief* group included 4 children (5%) who said the Candy Witch was not real on all first year measures. These groups did not differ on the basis of condition,  $\chi^2(2) = 3.6$ ,  $p = .16$ , or age group,  $\chi^2(2) = 1.5$ ,  $p = .5$ . However, as can be seen in Table 3, stability of belief across measures was more common among children who initially claimed that the Candy Witch was real than those who initially claimed that she was not real,  $\chi^2(1) = 25.1$ ,  $p < .001$ ,  $\phi = .6$ .

Children with stable versus wavering beliefs showed different patterns at the 1-year follow-up. As Table 4 shows, most of the children from the stable belief and stable disbelief groups maintained the same belief at follow-up, whereas children

**Table 3.** Relation between initial belief (real vs. not real) and belief stability across first-year measures

	Initial belief	
	Real ( <i>N</i> = 53)	Not real ( <i>N</i> = 24)
Stable	41 (77.4%)	4 (16.7%)
Wavering	12 (22.6%)	20 (83.3%)

**Table 4.** Relation between belief (real vs. not real) at 1-year follow-up and first year belief status

	Real (%)	Not real (%)
Stable belief ( <i>N</i> = 19)	84	16
Wavering ( <i>N</i> = 17)	47	53
Stable disbelief ( <i>N</i> = 1)	0	100

who held wavering beliefs the first year were approximately evenly split between real and not real judgments. Children from the stable belief group were more likely to make real judgments at follow-up than children from the wavering belief group,  $\chi^2(1) = 5.6$ ,  $p < .02$ ,  $\phi = .3$ . Age was associated with change in belief among the stable belief group. Children from the stable belief group who described the Candy Witch as *not* real at follow-up were significantly older ( $M = 7$  years 11 months, range = 7 years 6 months - 8 years 2 months) than both their counterparts who continued to believe ( $M = 6$  years 6 months, range = 5 years 6 months - 7 years -10 months), and children in the wavering belief group ( $M = 6$  years 4 months, range = 4 years 8 months - 8 years 5 months),  $F(2, 33) = 3.3$ ,  $p = .05$ , *post hoc* tests by Fisher's LSD,  $p < .05$ ,  $d_s = 1.5$ -1.6. In contrast, within the wavering belief group, there was no age difference between those who described the Candy Witch as real ( $M = 6$  years 5 months, range = 5 years 4 months - 8 years 5 months) and not real ( $M = 6$  years 3 months, range = 4 years 8 months - 8 years 5 months) at follow-up,  $t(15) = .4$ ,  $p = .7$ .

### Parent encouragement

Parent questionnaires were returned by 47 parents. Rate of response did not vary significantly across parents whose children did and did not express belief in the Candy Witch at the first post-Halloween interview, but was higher for the visit condition (70%) than the no visit condition (48%). Importantly, the two groups of parents did not differ significantly in the number of fantastical entities they believed in as children, nor in the number of other fantastical entities in which they encouraged their children to believe. Additionally, these two parental measures were unrelated to all measures of children's belief in the Candy Witch. This militates against the concern that parents in the visit condition provided a home environment that was generally more fantasy oriented than those of the non-visit families.

Parents of children who described the Candy Witch as real during post-Halloween Interview 1 reported a higher level of having encouraged their child's belief ( $M_{\text{real}} = 1.5$  out of 3,  $SD = .7$  vs.  $M_{\text{not real}} = .8$ ,  $SD = .8$ ),  $t(44) = 2.7$ ,  $p < .02$ ,  $d = 1.0$ , and

described engaging in more Candy Witch-related activities with children than did parents whose children described her as not real ( $M_{\text{real}} = 1.2$  out of 3,  $SD = .9$ ;  $M_{\text{not real}} = .6$ ,  $SD = .9$ ),  $t(44) = 2.7$ ,  $p < .02$ ,  $d = .68$ . Similarly, parents of children in the stable belief group ( $M = 1.5$ ;  $SD = .7$ ) reported having encouraged belief in the Candy Witch more than other parents ( $M = 1.1$ ;  $SD = .8$ ),  $t(45) = 2.1$ ,  $p < .05$ ,  $d = .55$ . However, they did not report engaging in significantly more Candy Witch related activities than did parents of children in the other belief groups.

Twenty-six children whose parents had completed questionnaires returned for the 1-year follow-up interview. These included 11 children who remained in the stable belief group at follow-up and 15 children from the other groups. At the time of the first year assessment, parents whose children remained in the stable belief group at follow-up had reported providing more encouragement ( $M = 1.8$  out of 3;  $SD = .41$ ) than did the parents of children in other groups ( $M = 1.3$ ,  $SD = .70$ ),  $t(23) = 2.5$ ,  $p < .02$ , equal variances not assumed,  $d = .88$ . They did not differ from other parents in the number of Candy Witch-related activities they engaged in with their children.

## Discussion

The present findings replicate and extend findings from previous studies of children's beliefs in fantastical beings. Previous studies have shown that children begin to believe in fantastical beings around age 3 and that the rate of belief declines significantly by age 8 (Clark, 1995; Prentice & Gordon, 1986; Prentice *et al.*, 1978). With the exception of one study by Woolley *et al.* (2004), these studies have addressed children's existing beliefs in familiar fantasy figures, and so have not attempted to identify the factors that promote initial acceptance of the existence of fantastical beings. In addition, very few studies have assessed the stability of these beliefs over time. The goal of the present study was to address some of the limitations of Woolley *et al.* (2004), including using a larger sample and a broader age range and assessing the stability of children's beliefs in the weeks immediately following their introduction to an entity.

Whereas many studies on belief in fantastical beings have revealed a decline in beliefs with age, Woolley *et al.* (2004) found the opposite - that among children who received a visit from the Candy Witch, older preschool children believed in the Candy Witch more than did younger children. Yet that study was limited to children younger than 5 years 6 months at the time they were introduced to the Candy Witch. To attempt to explore these contrasting patterns further we included early elementary-school-age children in the present study. The oldest of these children were 7 years and 6 months when they were first introduced to the Candy Witch and 8 years and 6 months when interviewed again 1-year later. We expected that our results in the preschool-age sample would replicate those of Woolley and colleagues (2004), but that elementary school children might be less likely to initially accept the Candy Witch as real, and that those who did would be more likely to have given up belief by the following year. This expectation was not confirmed. On each of the five first year assessments and the 1-year follow-up, older children were as likely to describe the Candy Witch as real as were the younger children. This is a striking finding, as most recent studies of children's fantasy-reality distinction either do not include this older age range or have found waning beliefs.

When examining the factors that are most influential in instilling a belief, however, we found that children's age interacted with whether they were visited by the fantastical

figure and the number of other fantastical figures they believed in to predict belief. This interaction suggests that different factors may support acceptance of a novel fantastical figure as real by younger and older children. Specifically, the results of the present study replicate Woolley *et al.*'s (2004) finding that among younger children, those who believe in a greater number of familiar fantastical figures are most likely to accept a novel figure as real. Furthermore, our results show that among younger children the facilitative effect of having a pre-existing network of beliefs about fantastical beings does not depend upon the child's receiving a visit from the novel fantastical entity. Our results also indicate that pre-existing beliefs in familiar fantasy figures support acceptance of a novel fantastical being among older children, but this may depend upon children's receiving 'evidence' of the novel being's existence in the form of a visit. This suggests that among the older children the experience of the visit is a more crucial factor to accepting the novel entity as real than among the younger ones. This interpretation must remain tentative, however, because of the small number of non-visited older children in our sample. Thus, future research should attempt to explore more fully the relative influence of pre-existing beliefs in fantastical figures and the experience of a visit on belief in a novel fantastical entity among children in the 5 years 6 months to 7 years age range.

We found no age differences in the stability of children's first year beliefs - that is whether they consistently expressed belief or disbelief, or wavered between the two - in the weeks immediately following children's introduction to the Candy Witch. There was, however, one important difference between the younger and older participants in terms of their belief stability over the course of a year. Among children who had consistently described the Candy Witch as real during the first year interviews, older children were more likely than were younger children to express disbelief at the 1-year follow-up. It would be interesting in future research to explore the trajectory of belief during this intervening year.

The question remains as to why, during the initial 2-week testing period there were as few committed sceptics among the older children as among the younger children. One possibility is that the same tools that serve children well in being sceptical in other situations served, in our study, to foster credulity. Young children are more likely to believe people who have been truthful in the past (Clement, Koenig, & Harris, 2004; Harris & Koenig, 2006; Koenig *et al.*, 2004), are more likely to believe information that fits with their knowledge (Lee *et al.*, 2002), and can use the context in which information is presented to differentiate reality from fantasy (Woolley & Van Reet, 2006). In our study, information about the Candy Witch was presented by an adult who had just presented reliable information about Halloween, and the information was subsequently reinforced, for most participants, by their parents. The Candy Witch clearly fit with children's beliefs about other fantastical beings, as evidenced by effects of such beliefs on belief in the Candy Witch. Additionally, the information was presented in a context in which children were used to learning about new things - their school. All these together may have contributed to the high level of belief in the Candy Witch in all age groups. Future research should address what processes work against these factors and how they operate to foster increasing scepticism with respect to the existence of fantastical entities between the early elementary and late elementary school years.

One of the most compelling findings of this study is the stability of beliefs among children who initially described the Candy Witch as real. Of the 77 children who participated during the first year of the study, only 4 children maintained that the Candy Witch was not real across multiple assessments of belief. In contrast, 48 children

consistently claimed that she was real. The remaining 32 children expressed varying beliefs: they described the Candy Witch as real on some measures, and as not real or pretend on others. A similarly impressive degree of stability in belief emerged from the 1-year follow-up interview. Children who had held consistent beliefs across the first year sessions mostly continued to express the same belief when they were interviewed again 1-year later. Thus, to the extent that scepticism was found among these children, it was expressed more often by intermittent belief than by committed denial of the Candy Witch's real existence.

The small number of children in the stable disbelief group limited our ability to draw any conclusions about factors that contributed to their scepticism. The only characteristic that these four children shared was that none of them believed in witches – a characteristic that they shared with over 60% of children who believed, at least intermittently, that the Candy Witch was real. Nonetheless, the existence of this small group of sceptics among the more credulous children suggests that there is not a simple developmental progression (e.g. from belief, through doubt, to scepticism as described by Prentice & Gordon, 1986) that characterizes children's responses to information about fantastical entities during early childhood. Rather, what children believe, and how consistently they believe it, appears to also be influenced by individual differences among children of the same age.

Woolley *et al.* (2004) identified two ways in which individual differences in children's pre-existing involvement in fantasy were related to differences in belief in a novel fantasy figure: concurrent belief in other fantastical entities, and fantasy orientation. The results of the present study indicate that concurrent belief in other fantastical entities is the more important of these, especially among preschool-aged children. Specifically, among younger children from both conditions, children who believed in many familiar fantasy figures were more likely to believe in the Candy Witch immediately after Halloween than those who believed in few familiar figures. In contrast, fantasy orientation did not affect initial belief in the Candy Witch either directly or in interaction with other factors. Thus, the present study does not replicate Woolley *et al.*'s (2004) finding that having a high fantasy orientation is associated with initial belief among non-visited children. The difference in our findings is most likely due to the greater sample size in this study. This finding contributes to a growing body of research that indicates that individual differences in fantasy orientation do not imply differences in overall ability to make the fantasy-reality distinction (Bouldin & Pratt, 2001; Taylor *et al.*, 1993).

Findings in previous research concerning the effect of parental encouragement on children's beliefs have been inconclusive. Our results suggest that different aspects of parent's encouragement may be related to short term and stable belief. Belief in the Candy Witch immediately following Halloween was related to both parents' global assessment of how much they encouraged belief and the number of activities they reported engaging in. In contrast, stable belief, as measured across the first year assessments and at the 1-year follow-up, was related only to parents' global assessment of their encouragement. Although based on a small sample of parents, this finding is intriguing in light of Anderson and Prentice's (1994) finding that the age at which children give up belief in Santa Claus is positively related to their parents' attitudes towards Santa Claus but unrelated to parents' reports of behavioural or verbal encouragement. This suggests that the question of how parents communicate positive attitudes towards fantastical entities in ways that do influence children's short and long-term beliefs in fantastical figures may be a fruitful direction for future research.

In conclusion, most children from 3 through 7 years showed some degree of credulity towards the possible existence of the Candy Witch, but varied with respect to how consistently they expressed belief. Belief in the Candy Witch immediately after Halloween was predicted by an interaction of several child factors, including age; existing beliefs in other fantasy figures and whether the child was visited. Children who initially expressed belief in the Candy Witch were more likely to maintain their initial belief than those who expressed disbelief. Finally, both short term and stable belief were related to high levels of parental encouragement.

One of the most striking findings from this study was the ease with which we created belief in a novel fantastical being in the older children, who were at an age at which many believe children to be less receptive to such beliefs. In order to probe potential developmental changes in initial acceptance of such entities as real, future studies should include older elementary school children, perhaps as old as 9 or 10 years. Our results did, however, suggest it may be a mistake to think of credulity and scepticism towards fantastical entities as opposite ends of developmental trajectory. Therefore, future longitudinal studies should also include multiple assessments of belief at follow-up sessions in order to clarify the developmental course of the beliefs of children from stable disbelief, wavering belief, stable belief and disbelief after stable belief groups. Future studies might also address relations between children's beliefs in fantastical beings and their belief in other more culturally supported supernatural beings such as God and angels.

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## Appendix A

### Key questions (and scoring) of parent questionnaire

#### Parent questionnaire

- (1) How much did you encourage your child to believe in the Candy Witch?  
Not at all. (0)  
Not much: I allowed my child to participate because s/he wanted to, but I didn't push it. (1)  
A moderate amount: I liked the idea and wanted my child to participate, but I didn't go overboard about it. (2)  
A lot: I strongly encouraged my child to participate and believe in the Candy Witch. (3)
- (2) What did you do to encourage your child's participation and belief in the Candy Witch? (.5 points for each activity checked or described)  
Nothing.  
Talked with my child about the Candy Witch when we talked about Halloween.  
Talked about how much fun it would be to have the Candy Witch come.  
Helped child select a place to leave candy for the Candy Witch to take.  
Recited the Candy Witch rhyme and ate a piece of candy with my child.  
Explained the appearance of the toy in the morning in terms of the Candy Witch.  
Other (describe):
- (3) Please indicate which of the following entities you believed in as a child: Santa Claus; Easter Bunny; Tooth Fairy; Witches; Ghosts, Fairies.
- (4) Please indicate for which of the following entities you encourage your child's belief: Santa Claus; Easter Bunny; Tooth Fairy; Witches; Ghosts, Fairies.

## Appendix B

### Fantasy orientation phone task (M. Taylor, 2005)

#### Experimenter

All right, now we're going to play a game. Do you have a friend you like to play with? What's your friend's name? Great. Do you know how to use a phone? [Pick up phone.] Look, here's a toy phone. Can you pretend to call [friend's name] on this phone? (if child does not call right away, ask again. Ask up to 3 times.)

#### Observations

- (a) Did child make a phone call?
- (b) How many times did you have to ask the child to make the call?
- (c) Telephone behaviours:
  - (1) Child dialed?
  - (2) Child held phone to ear?
  - (3) Child talked on the phone?
  - (4) Child listened on the phone?

While the child is on the phone, make a tally of the number of turns the child takes.

A turn can be a full statement, or simply a "Yes," "No," or "Uh-huh," but it should be preceded and followed by a break when the child is listening to the friend.

- (d) Number of turns?
- (e) Number of words?