

Development of Afterlife Beliefs in Childhood: Relationship to Parent Beliefs and Testimony

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This study examined the development of children's reasoning about the afterlife and its relationship with parental afterlife beliefs and testimony. A total of 123 children aged 5, 7, and 10 years were read a story describing the events that led to a person's death. After hearing the story, children were asked questions about the dead agent's biological, perceptual, epistemic-volitional, and emotional states and about the agent's capacity to engage in conscious mental activity. Parents completed a scale assessing the strength of their afterlife beliefs and a questionnaire examining aspects of parental discourse with children about death and the deceased. The results showed that, with age, children become more accurate at predicting the cessation of biological functions, perceptual states, and mental activity. However, children at all ages were reluctant to claim the cessation of epistemic-volitional and emotional states. Parents' afterlife beliefs and discourse about death and the afterlife were not related to children's afterlife responses. Our findings converge with the view that children's afterlife reasoning is grounded on cognitive mechanisms and may be less amenable to sociocultural input.

Most adults worldwide, regardless of culture or religious affiliation, believe that the mind continues to exist after the death of the body (Bering, 2011; Davis, Smith, & Marsden, 1998; Greeley & Hout, 1999; Lambert, 2001; Pereira, Faísca, & Sá-Savaira, 2012). Moreover, evidence has begun to accumulate indicating that the belief in a psychological afterlife emerges

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early in development (Astuti & Harris, 2008; Bering & Bjorklund, 2004; Bering, Hernández-Blasi, & Bjorklund, 2005; Harris & Giménez, 2005). Two views on the developmental origins of afterlife beliefs have been proposed. On one view (Bering, 2006, 2011), afterlife beliefs are intuitive: They are the by-product of constraints in our mentalizing ability or theory of mind (ToM). On the second view (Astuti & Harris, 2008; Harris & Giménez, 2005), afterlife beliefs are culturally constructed: They are founded on the beliefs and testimony that children are exposed to in their sociocultural environment. The present study investigates the development of afterlife reasoning in children aged 5–10 years and its relationship to parents' beliefs and parent–child discourse about death and the afterlife.

Are Afterlife Beliefs the Result of Theory of Mind Constraints?

Bering and colleagues have cited evidence indicating that afterlife beliefs emerge in the preschool years (Bering & Bjorklund, 2004; Bering et al., 2005). In one of their key experiments (Bering & Bjorklund, 2004, Exp. 3), children aged 5 and 11 years and a group of adults were presented with a story enacted with puppets in which an anthropomorphized mouse was killed and eaten by an alligator. At the end of the story, participants were asked a set of questions about the continuity or cessation of the mouse's biological (e.g., growing old), psychobiological (e.g., getting sleepy), perceptual (e.g., being able to see), and mental (e.g., having desires, emotions, knowledge) processes. Most of the 5-year-olds responded that the mouse's biological processes would cease to function after death. However, 5-year-olds were significantly more likely than older children or adults to respond that the purely mental processes (desires, epistemic states, and emotions) of the dead animal would continue to function after its death. This reverse developmental trend—that is, younger children attributing more postdeath continuity to the mouse's mental processes than older children and adults—was replicated in a follow-up study by Bering et al. (2005) with Spanish children attending a Catholic school and a public nonreligious school.

Bering (2006, 2011) interprets the aforementioned findings as evidence that the human mind is predisposed to believe in a mental afterlife. In Bering's view, children are endowed with a natural tendency to attribute mental states to the self and to others (ToM), which is the source of their belief in a mental afterlife. Adopting a simulationist approach to ToM, Bering (2006) hypothesizes that when children and adults try to assess whether a particular process continues after death, they rely on their past experience. It is easy for them to recall past instances when their various

biological, psychobiological, and perceptual processes were suspended (times when they were unable to breathe, see, listen, and so forth), so they can easily simulate the absence of these processes in their mind and apply it to a dead agent. However, since they have never previously experienced lack of consciousness, it is very difficult for them to imagine what it is like to be without thoughts, beliefs, desires, or knowledge.¹

This inability to simulate mental nonexistence is, in Bering's view, "an impassable cognitive constraint" (Bering et al., 2005, p. 588), which motivates children, and adults alike, to attribute psychological continuity to the dead. The ToM constraints account further suggests that sociocultural factors have a lesser influence on the development of afterlife beliefs. This is because, according to Bering (2006), if belief in an immortal mind was the result of sociocultural influences, older children, who have had more sociocultural training about afterlife matters, should have attributed continuity to the dead animal's mental states more often than younger children did.

Is Belief in the Afterlife Culturally Transmitted?

Against Bering's (2006) claims, Harris and his associates reported findings indicating that sociocultural factors play a central role in the development of afterlife beliefs (Astuti & Harris, 2008; Harris & Giménez, 2005). In one study, Harris and Giménez (2005) presented a group of Spanish children 7 to 11 years of age with two stories describing the death of an elderly person. The only difference between the two stories was that, in one ("secular"), the story included biomedical terms aiming to draw children's attention to the biological aspects of death, whereas, in the other ("religious"), death was described in religious terms aiming to make children think of death as the beginning of an afterlife. Following the presentation of each story, children were asked 12 questions about the continuity of the deceased agent's psychological and bodily processes. The results showed that the 11-year-olds more frequently attributed continuity to the psychological processes of the deceased agent than did the 7-year-olds. Moreover, the majority of children, regardless of age, attributed continuity to the dead person's psychological processes more often in the religious than in the secular story.

1. In essence, Bering's (2002, 2006) account introduces a distinction between two categories of processes based on their imaginability or ease of simulation: Those that are "easy to imagine their absence of" (EIA) and those that are "difficult to imagine their absence of" (DIA). Biological, psychobiological, and perceptual processes are classified as EIA states, whereas propositional mental states are classified as DIA states.

A follow-up replication of the Spanish study was conducted in the rural community of the Vezo in southwestern Madagascar (Astuti & Harris, 2008). From a young age, Vezo children attend burial ceremonies and participate in cultural rituals and practices (e.g., offering of food) associated with deceased ancestors. However, they receive very little information from adults about the ancestors and/or the meaning of ancestral rituals because such knowledge is regarded as dangerous for young children. Similarly to the Spanish study, the results reported by Astuti and Harris (2008) showed that the tendency to attribute more postdeath continuity to the psychological processes of a dead relative increased with age and was more pronounced in the religious than in the secular, nonculturally tailored, story context.

The findings reported by Harris and colleagues (Astuti & Harris, 2008; Harris & Giménez, 2005) argue against the view that afterlife beliefs emerge naturally (Bering, 2006). First, they indicate that enculturation does influence children's reasoning about the afterlife. As children grow older, they become more inclined to ascribe psychological continuity to the deceased. Second, the findings suggest that children's continuity responses are context sensitive. When death was presented in a secular context, children gave fewer continuity responses than when it was presented in a religious context. Nevertheless, what is puzzling about Harris's findings (Astuti & Harris, 2008; Harris & Giménez, 2005) is that, even in the secular context, children demonstrated a tendency to attribute continuity more often to the dead agent's psychological processes than to that agent's bodily processes. This suggests that, irrespective of context, children were biased toward attributing psychological continuity after death. This pattern is different from what would have been expected if afterlife beliefs were exclusively the end product of sociocultural indoctrination shaped by context biases and not the result of cognitive constraints at all (see also Hodge, 2012).

Taken together, the research on children's afterlife reasoning has produced markedly different findings and thus has not decisively resolved the debate between contrasting theoretical accounts. The lack of consensus in these various studies is puzzling but could plausibly be the result of methodological differences. There were at least three critical differences between the tasks used in different studies: (a) Whereas Bering told children a story about the death of an animal (Bering & Bjorklund, 2004, Exp. 3; Bering et al., 2005), Harris narrated a story about the death of a person (Astuti & Harris, 2008; Harris & Giménez, 2005). Obviously, views about the postdeath continuity of an animal's psychological processes cannot be equated to those of a human (Hughes, 2006). Besides, as Richert and Smith (2009) point out, "in Christian theology . . . people, not animals,

have souls and an afterlife” (p. 186). (b) Reasoning about the postdeath continuity of a dead agent’s psychological processes was assessed with a markedly different number of questions in Bering’s and Harris’s studies. The Bering task had 20 questions (out of 24) assessing the continuity of psychological processes (Bering & Bjorklund, 2004, Exp. 3; Bering et al., 2005). By contrast, there were only 6 (out of 12) in Harris and Giménez’s (2005) study and only 9 (out of 17) such questions in Astuti and Harris’s (2008) study. (c) The mean age of the youngest children in Harris’s studies was 7 years (Harris & Giménez, 2005) and 5 years 9 months (Astuti & Harris, 2008), respectively, whereas both of Bering’s studies included children as young as 4 years. Thus, children’s responses in different studies might have varied as a result of methodological differences. Moreover, because of these differences, the results of Bering and Harris cannot be directly compared.

Overall, the aforementioned evidence cited above points to the need for further research oriented towards examining the developmental trajectory of children’s beliefs about the continuity of mental states after death. Furthermore, the conflicting theoretical interpretations of these findings underscore the need for more studies investigating the developmental origins of these beliefs and, to this effect, the role of sociocultural factors in their acquisition.

Do Parents’ Afterlife Beliefs Matter?

To the best of our knowledge, no study, to date, has systematically examined children’s beliefs about the afterlife in relation to those of their parents. Furthermore, it is not known whether parents’ afterlife beliefs influence the content of parental discourse with children about the deceased and/or the postdeath continuity of mental states. Clearly, these questions are important and directly relevant to the debate concerning the cognitive vs. sociocultural foundations of afterlife beliefs. For, if belief in a psychological afterlife develops as a result of sociocultural input, parents’ ideas about the continuation of a mental life after death should be expected to have a critical role in children’s developing afterlife concepts. If, alternatively, there are default cognitive (ToM) constraints, predisposing people from early on to attribute mental immortality to the deceased, then parental input should be expected to have a relatively limited—if any—impact on children’s developing afterlife beliefs.

Some researchers have argued that parents’ religious beliefs (including their afterlife beliefs) “act as cognitive anchors from which the child’s beliefs evolve over time” (Ozorak, 1989, p. 460; see also Boyatzis, 2005;

Boyatzis, Dollahite, & Marks, 2006). Other researchers (Harris & Koenig, 2006; Harris & Richert, 2008) have maintained that in those domains in which children cannot obtain firsthand evidence, they turn for relevant information to those adults they trust by default—that is, their parents. Children, according to the latter authors (Harris & Koenig, 2006; Harris & Richert, 2008), rely on parental testimony to construct a conceptualization of empirically unverifiable religious ideas, such as life after death, the immortality of God, and the efficacy of prayer. Parents, on the other hand, consider transmission of their religious beliefs to their children—even to children as young as 4 or 5 years of age (Braswell, Rosengren, & Berenbaum, 2012)—as a matter of importance, and the afterlife is a topic of parent–child religious conversations (Boyatzis & Janicki, 2003). Indeed, this is what was found in an as yet unpublished study by Rosengren et al. (in press). When these researchers questioned parents (most of whom were Christians) about the way they responded to their 3- to 6-year-olds' questions about death and dying, they found that although only a few of children's queries entailed religious considerations, the majority of parents reported responding to these questions in religious terms (i.e., with references to Heaven, the soul, God, etc.). The claim, then, is that the beliefs espoused by parents regarding life beyond death and the way they communicate with their children about death and the afterlife may be critical for the development of children's developing belief systems.

To test such a claim, however, one should take into consideration the strength of parents' belief in a psychological afterlife. In spite of the wide prevalence of afterlife beliefs in our society, not all parents believe, and believers vary widely in their confidence. In an earlier study, Bering (2002) showed that the strength of adults' belief in an afterlife varies significantly and, further, that the stronger their belief was, the less often they attributed discontinuity to the psychological functions of a deceased agent. Similarly, in a more recent study, Pereira et al. (2012) reported that the strength of afterlife belief influences, to some degree, the way adults represent their own death and the continuity they attribute to the dead-I (i.e., the dead self). Are individual differences in the strength of parents' afterlife beliefs related to children's developing afterlife ideas and, furthermore, do they have an impact on the content of parent discourse (testimony) to children about death and/or the postdeath continuity of psychological processes?

The Current Study

The first aim of this study was to investigate the development of afterlife beliefs in children aged 5–10 years. The task used to assess children's

afterlife beliefs was partly modeled on the task designed by Bering and Bjorklund (2004, Exp. 3). A new story was constructed that described the death of a person instead of an animal. The use of a human protagonist aimed to avoid confounding reasoning about nonhuman agents with after-life reasoning in children's responses (see Hughes, 2006; Richert & Smith, 2009). The emphasis on the questions following the story was on the continuity of the dead protagonist's psychological processes. To this effect, 16 of the 20 questions used asked participants to judge whether the dead protagonist continued to have perceptions, emotional, volitional, and epistemic states, as well as the capacity to engage in conscious mental activity.

It should be noted here that in contrast to previous research (Astuti & Harris, 2008; Bering & Bjorklund, 2004; Harris & Giménez, 2005), which has treated mental entities as one category, in the present study a distinction was drawn between mental states and mental activities (see D'Andrade, 1987, 1995; Pillow, 2008, 2012). In the former category, only mental states that philosophers standardly term propositional attitudes (i.e., epistemic, volitional, and emotional states²) were included, whereas, in the latter category, the mental activities (or processes) that "generate, select, manipulate, transform, or operate on mental states" (e.g., remembering, problem solving) (Pillow, 2008, p. 298) were merged. Evidence has shown that children's inferences about others' mental states follow a different developmental trajectory from their inferences about others' mental activities (Flavell, Green, & Flavell, 1995, 1998); thus, it was considered important to examine whether children would be more disposed to attribute the dead agent's mind the capacity to have (i.e., hold) mental states as compared to the capacity to engage in conscious mental activity.

As explained earlier, a critical feature in the design of some earlier studies investigating children's afterlife beliefs was the context in which death was presented. More specifically, in both studies by Harris and his associates, death was described either as a biological/secular or as a religious/metaphysical event (Astuti & Harris, 2008; Harris & Giménez, 2005). Disentangling the effects of context (secular vs. religious) on children's afterlife reasoning was not within the aims of the present study. Thus, an effort was made to portray death as realistically as possible while at the same time controlling for context influences on children's continuity responses. To this end, a story was constructed that described death in as

2. Whether perceptual experiences (e.g., seeing, hearing) are propositional attitudes is a matter of intense debate among philosophers of mind (e.g., Crane, 2003, 2009; Peacocke, 2001). Furthermore, some philosophers of mind (e.g., Bermúdez, 2011) consider attribution of perceptions to an agent as radically different from the attribution of propositional attitudes. These precisely were the reasons why perceptions were not categorized here as mental states.

neutral way as possible; the story did not include any eschatological and/or biomedical terms that might bias children to think of death as a secular or a metaphysical event.

Based on the findings of earlier studies (Bering & Bjorklund, 2004; Harris & Giménez, 2005), it was anticipated that even the youngest children would give discontinuity responses to the questions assessing the functioning of the biological and perceptual processes after death. However, given the conflicting findings of past studies with respect to the continuity of the rest of the psychological processes, no predictions were made regarding the effect of age on children's responses to questions concerning the functioning of the dead protagonist's mental and emotional states.

The second aim of this study was to examine the relationship between children's afterlife reasoning with the strength of their parents' belief in a psychological afterlife and with the content of parental discourse about the afterlife. To this end, parents were asked to complete the Osarchuk and Tatz's (1973) Belief in Afterlife Scale (BAS), which measures the strength of an individual's belief in an afterlife, and the Parental Discourse with Children about the Afterlife (PDCA) scale, which assesses parents' tendency to describe death and the deceased to their children in dualistic and/or psychological continuity terms. The question under investigation was whether the strength of parents' afterlife beliefs influences the content of parental talk to children about death and the deceased. Furthermore, we were interested to test whether these two variables (strength of belief and content of parental discourse) are associated with children's continuity reasoning.

So far, studies investigating children's afterlife beliefs have been conducted either in a Western, Christian (Catholics in Spain) or in a non-Western, non-Christian cultural-religious context (Vezo in Madagascar). This study aimed to contribute to the existing literature by collecting data from a different cultural-religious milieu: Greece. Greece is an intriguing culture to study for a number of reasons: (a) Greeks have a long-standing tradition of believing in the afterlife. Arguably, the idea of the immortal soul originates in Plato's writings (Bostock, 2001). (b) The modern Greek conception of the afterlife merges the Orthodox Christian teachings about life after death with traditions and rituals that survive from ancient times³ (Edwards, 1994). (c) Death in Greece is embedded in an elaborate sequence of rites (called *mimosina*, which take place 3 days, 9 days, 40 days,

3. For example, a common ritual in Greece is to serve boiled wheat (*kollyva*) at memorial services. Wheat symbolizes the Greek belief in the continuity of the soul and is linked to the Ancient Greek ritual of offering *panspermy* (wheat) in honor of the dead during the festival of *Anthesteria*.

3 months, 9 months, and every year after an individual's death). These rites are events in which the entire family (including children) is expected to take part. This is premised on the notion that the deceased must be remembered by the living (i.e., *mnimosina* are gestures against oblivion) and the belief that the prayers offered by family members during these events are essential for the forgiveness of the sins of the deceased and the purification of his or her soul. (d) Greek Orthodox theology and tradition place also a great importance on visiting and tending the graves of the deceased. In between the rites, the close relatives (adults and children) of a deceased are expected to pay regular visits to the grave site, to tend the grave (wash, plant, weed, burn incense, and light the candle) (see Francis, Kellaher, & Neophytou, 2005). These visits and grave-tending practices manifest an implicit belief that the deceased continues to exist in an afterlife and that connection and communication with him or her is possible.

All the aforementioned indicate that Greek children, along with their exposure to the biological aspects of death, are raised in a cultural-religious environment saturated with the belief in the continuity of our mental existence after death. This means that if afterlife beliefs are indeed culturally constructed and not the result of cognitive constraints, this should be particularly evident in the context of the Greek culture.

Method

Participants

A total of 123 children and their parents ($N = 90$) were recruited from two nursery schools and two primary schools serving a predominantly middle-class population. Children were divided into three age groups: 41 five-year-olds ($M = 5.5$, range 5.0–5.11 years, 23 girls and 18 boys), 38 seven-year-olds ($M = 7.6$, range 7.2–7.11 years, 20 girls and 18 boys), and 44 ten-year-olds ($M = 10.7$, range 10.1–10.11 years, 20 girls and 24 boys). The parents' mean age was 38.5 (range 25.9–54.2 years, 82 mothers and 8 fathers). There were 24 parents (21 mothers and 3 fathers) from the 5-year-old group, 34 parents from the 7-year-old group (30 mothers and 4 fathers), and 32 parents (31 mothers and 1 father) from the 10 year-old group. All participants were Greek Orthodox Christians.

Child Measures

Afterlife belief task. Children were presented with a story (see Appendix A) about a man, named George, who went hunting for a wild

flower in the jungle. While George was in the midst of the jungle, he was having various thoughts, perceptions, emotions, imaginings, and so forth (appropriate examples were given for each process under investigation). Occupied with his thoughts, George did not notice a poisonous snake that crawled out of the bushes. The snake bit him on the leg and George died. At the end of the story, children were asked whether George was still alive. All children answered this question correctly—that George was not alive anymore—and were then asked 20 further questions. Questions represented five categories of processes (5×4 questions) and are listed in Table 1: (a) *Biological*: Two questions concerned external and observable biological processes (eye and leg movement), and two referred to internal biological processes (heartbeat and brain function). (b) *Perceptual*: The questions examined four perceptual processes: ability to see, hear, smell, and feel pain. (c) *Mental activity*: The questions assessed four kinds of conscious mental activity: remembering, thinking, learning, and performing deliberate numerical calculations. (d) *Epistemic-volitional*: The questions assessed four propositional mental states: knowledge, desire, belief, and imagination. (e) *Emotional*: The questions assessed four emotional states: happiness, anger, sadness, and love. All questions were presented in a different random order to each child. At the end of the task, children were thanked for their participation and informed that the protagonist in the story was fictional rather than a real person.

Coding of children's responses. Children were encouraged to answer in whatever way seemed appropriate to them, but they usually answered "yes" or "no." One point was awarded each time a child gave a "no" response (discontinuity reasoning), suggesting that the process or state under consideration had ceased to function after the story protagonist's death. If the child generated a "yes" response (continuity reasoning), a score of 0 was awarded. "Don't know" and other responses were coded separately and were not included in the analysis because they comprised less than 2.4% of the total number of responses.

Parent Measures

Belief in Afterlife Scale (BAS). The BAS (Form A), a religious-free scale developed by Osarchuk and Tatz (1973), was used to assess the strength of parents' afterlife beliefs. The BAS is composed of 10 items (e.g., "Earthly existence is the only existence we have"), which participants are asked to rate on a 5-point scale (where 1 = *I strongly disagree* and 5 = *I strongly agree*). Scores from separate items are summed, creating a total score. Total scores can range between 10 and 50, with higher scores

indicating a stronger belief in the afterlife. The internal reliability of the BAS has been shown to be satisfactory (Cronbach's $\alpha = .89$ [Casebolt, 1999]). In the present study, the internal reliability was high (Cronbach's $\alpha = .90$). Earlier studies (Berman & Hays, 1973; Littlefield & Fleming, 1984–85) measuring this scale against other measures of belief in the afterlife have also shown high validity.

Parental Discourse with Children about the Afterlife (PDCA) scale. The infrequency of spontaneous parent discourse with the child about the afterlife created considerable practical impediments to collecting data by observing parent–child conversations at home. For this reason, the PDCA, a self-report scale, was constructed to assess the content of parents' discourse about death and the deceased with their children. To the best of our knowledge, no other such scale exists. It consists of 8 items that are rated on a 5-point Likert-type scale (from 1 = *I strongly disagree* to 5 = *I strongly agree*) (see Appendix B). Three items assess parents' tendency to use dualistic terms (e.g., “soul” or “spirit”) during discussions with their children. Three items assess whether parents portray the deceased people as having perceptual experiences, emotions, and epistemic-volitional states. The remaining items examine the use by parents of euphemisms (e.g., “departed,” or “left us”) and of phrases implying a continuous existence (“. . . is now with God”). Participants rated their agreement with each item on a 5-point Likert-type scale with scores ranging (from 1 = *I strongly disagree* to 5 = *I strongly agree*). High scores indicated that parents describe the deceased as having some sort of existence after death. Reliability analysis showed that the scale's internal reliability was high (Cronbach's $\alpha = .88$).

Demographics questionnaire. Parents also filled out a brief questionnaire that elicited demographic information (age, gender, education, occupation, religious affiliation). The demographics questionnaire also included two questions assessing (a) parents' devotion to their religious faith (“How devoted are you to your religious faith?”—measured on a Likert-type scale from 1 = *not at all* to 5 = *totally devoted*) and (b) the frequency of parents' participation to religious services (“How often do you attend religious services?”—measured on a Likert-type scale from 1 = *never* to 5 = *very often*).

Procedure

Children's parents were contacted via a letter distributed through schools that contained detailed information about the study's aims and procedures and asking for parents' consent to their own and their children's participation in the study. Written consent for participation was obtained from

123 parents, who were sent an envelope containing the BAS and the PDCA scales, as well as the demographics questionnaire and a stamped envelope addressed to the researcher. A code number was printed on each questionnaire to make it possible to match parent-child dyads. A total of 90 parents (73.1% of those who consented to participate) completed and returned the questionnaire. Similar return rates have been reported by studies investigating associations between children's beliefs about magical and/or supernatural entities and parent-child communication about these entities (e.g., see Rosengren & Hickling, 1994).

All children were tested by a female experimenter in a quiet room at their school. Testing lasted approximately 15 minutes on average. Children were told that they would be read a story and then would be asked some questions about it. They were also informed that they could withdraw from the study at any point. All the children were closely monitored for signs of verbal or nonverbal emotional discomfort. No child withdrew or exhibited emotional distress.

Results

Age Effects on Children's Discontinuity Responses

First, the analysis looked at the effects of children's gender and order of question presentation. Finding no effect, these variables were collapsed in subsequent analyses.

Table 1 lists the percentages of *discontinuity* responses for each age group and each type of process. Overall, discontinuity responses to individual questions did not vary widely within the separate types of processes.

Table 1. Percentages of discontinuity responses by age group and process type

| "Now that George is dead . . ." | 5-Year-olds | 7-Year-olds | 10-Year-olds |
|---------------------------------|-------------|-------------|--------------|
| Biological | | | |
| Can he <i>blink</i> his eyes? | 100 | 100 | 100 |
| Can he <i>move</i> his legs? | 100 | 100 | 100 |
| Is his <i>heart</i> beating? | 80 | 97 | 100 |
| Is his <i>brain</i> working? | 83 | 97 | 98 |

Continued

Table 1. Percentages of discontinuity responses by age group and process type
(Continued)

| "Now that George is dead . . ." | 5-Year-olds | 7-Year-olds | 10-Year-olds |
|--|-------------|-------------|--------------|
| Perceptual | | | |
| Can he <i>see</i> the sun? | 78 | 97 | 98 |
| Can he <i>hear</i> the birds singing? | 95 | 97 | 91 |
| Can he <i>feel the pain</i> in his leg from the snake's bite? | 44 | 87 | 93 |
| Can he <i>smell</i> the flowers? | 85 | 100 | 100 |
| Mental activity | | | |
| Can he <i>remember</i> his dog? | 88 | 92 | 84 |
| Can he <i>learn</i> new things? | 61 | 92 | 80 |
| Can he <i>add</i> numbers together? | 78 | 97 | 96 |
| Can he <i>think</i> of his parents? | 88 | 92 | 75 |
| Epistemic-volitional | | | |
| Does he <i>know</i> that he is lying on the ground? | 59 | 74 | 82 |
| Does he <i>want</i> to visit his parents? | 66 | 82 | 89 |
| Does he <i>believe</i> he has talent with numbers? | 61 | 71 | 73 |
| Can he <i>imagine</i> himself swimming in the sea? | 71 | 92 | 86 |
| Emotional | | | |
| Does he <i>love</i> his parents? | 49 | 63 | 57 |
| Does he feel <i>sad</i> for his shoes? | 49 | 71 | 84 |
| Does he feel <i>angry</i> at his dog for chewing his shoes? | 59 | 79 | 93 |
| Does he feel <i>happy</i> for receiving a card from his parents? | 66 | 92 | 89 |

One exception was the distribution of the responses given by the 5-year-olds regarding the questions about the dead agent's perceptual processes, where variation ranged 44%–95%. In the older groups, significant variation was observed in the emotional process questions only (7-year-olds, 63%–92%; and 10-year-olds, 57%–89%), with the question “Does George love his parents” receiving the lowest discontinuity score.

Children's scores across the four questions of each type of process (biological, perceptual, emotional, epistemic-volitional, and mental activity) were next summed, yielding a discontinuity score that could range 0–4. Figure 1 plots the mean discontinuity scores for each age group by type of process. These data were subjected to a 3 (age groups) \times 5 (types of processes) analysis of variance (ANOVA) with repeated measures on the last factor. The results revealed a significant main effect of age group, $F(2, 120) = 8.07, p < .001, \eta^2 = .119$, reflecting the lower total mean discontinuity score of the 5-year-olds ($M = 14.58, SD = 6.43$) as compared to the respective scores of the 7-year-olds, $M = 17.74, SD = 3.67, t(77) = -3.44, p < .001$, and the 10-year-olds, $M = 17.67, SD = 3.87, t(83) = -3.27, p < .005$, that did not differ significantly from each other, $t(80) = .53, p = n.s.$

There was also a highly significant main effect of process type, $F(4, 480) = 37.88, p < .001, \eta^2 = .240$. Post hoc Bonferroni adjusted t tests of this effect revealed that the mean biological discontinuity score ($M = 3.85, SD = .46$) was significantly higher than all the rest (all $ps < .001$). The mean perceptual discontinuity score ($M = 3.55, SD = .82$) was significantly higher than the emotional score ($M = 2.84, SD = 1.41, p < .001$) and the epistemic-volitional scores ($M = 3.02, SD = 1.37, p < .001$), but it was not statistically different from the mental activity score ($M = 3.40, SD = 1.05, p = .61$). Moreover, the mean mental activity discontinuity score was significantly higher than the emotional and epistemic-volitional discontinuity scores (both $ps < .001$), whereas the latter two did not differ statistically ($p = .37$).

Both of these main effects were, however, qualified by a significant age \times process type interaction, $F(8, 480) = 2.07, p < .005, \eta^2 = .044$, that was explored further by conducting separate one-way ANOVAs where age group served as the between-subjects factor. These analyses revealed significant age differences in the mean discontinuity scores in all types of processes. The age effect was most pronounced in the perceptual, $F(2, 120) = 15.79, p < .001, \eta^2 = .208$, biological, $F(2, 120) = 7.99, p < .001, \eta^2 = .118$, and emotional processes $F(2, 120) = 6.55, p < .005, \eta^2 = .098$, and least pronounced in the epistemic-volitional states, $F(2, 120) = 3.56, p < .05, \eta^2 = .056$, and the mental activity categories, $F(2, 120) = 3.32, p < .05, \eta^2 = .052$. Post hoc analyses indicated that the 5-year-old group gave significantly fewer discontinuity responses in the biological, perceptual, and

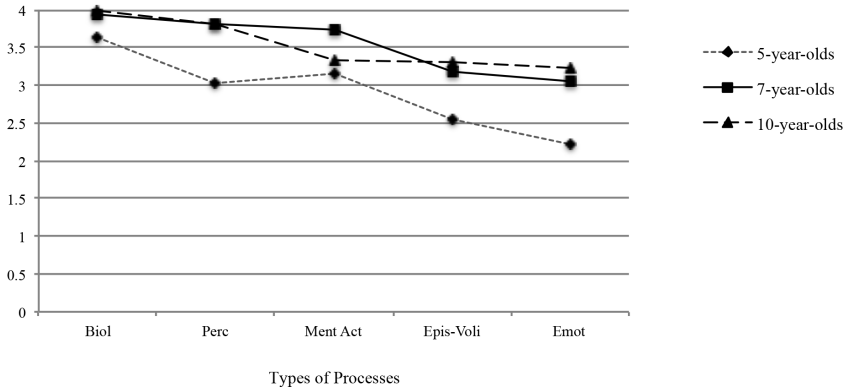


Figure 1. Mean discontinuity scores by age group and process type (0–4).

Biol = biological; Perc = perceptual; Ment Act = mental activity; Epis-Voli = epistemic-volitional; Emot = emotional.

emotion questions than did the 7- and 10-year-olds (ps ranged .01–.001), who did not differ significantly from each other. In the mental activity category, significant differences were found between the 5- and the 7-year-olds and between the 7- and 10-year-olds, $t(77) = -2.53, p < .01$, and $t(80) = 2.07, p < .05$ respectively, but not between the 5- and the 10-year-olds, $t(83) = -.761, p = .449$. Finally, in the mental activity category, there was only a statistically significant difference in the discontinuity responses of the 5- and the 10-year-olds, $t(83) = -2.41, p < .01$.

Next, three separate repeated-measures ANOVAs were performed, one for each age group. The results revealed a significant process-type effect held for each age group: 5-year-olds, $F(4, 160) = 16.36, p < .001, \eta^2 = .290$; 7-year-olds, $F(4, 148) = 14.09, p < .001, \eta^2 = .276$; and 10-year-olds, $F(4, 172) = 11.24, p < .001, \eta^2 = .293$. A series of paired sample Bonferroni-adjusted t tests ($p < .01$) were conducted to explore further the meaning of these effects. The results showed that in the 5-year-old group the mean discontinuity scores for the biological ($M = 3.68, SD = .65$), mental activity ($M = 3.15, SD = 1.31$), and perceptual processes ($M = 3.02, SD = 1.10$) were statistically equivalent. However, they were significantly higher than the mean scores for the epistemic-volitional ($M = 2.56, SD = 1.64$) and emotional states ($M = 2.22, SD = 1.69$) categories, which did not differ statistically. Similarly, in the 7-year-old group the biological ($M = 3.95, SD = .22$), perceptual ($M = 3.82, SD = .45$), and mental activity ($M = 3.74, SD = .60$) mean discontinuity scores were statistically alike but were significantly higher than those for the epistemic-volitional

($M = 3.18$, $SD = 1.22$) and emotional states ($M = 3.05$, $SD = 1.18$) categories, which were undifferentiated. Finally, in the 10-year-old group the biological score ($M = 3.98$, $SD = .151$) was statistically higher than the mean discontinuity scores for the perceptual ($M = 3.82$, $SD = .44$), mental activity ($M = 3.34$, $SD = 1.03$), epistemic-volitional ($M = 3.30$, $SD = 1.13$), and emotional states ($M = 3.23$, $SD = 1.11$). The mean discontinuity score for the perceptual processes was statistically higher than the mental activity, epistemic-volitional, and emotional state scores, whereas the mean scores for the latter three types of processes were statistically undifferentiated.

In an attempt to examine whether children were consistent in their discontinuity responses, following Bering et al. (2005), we classified them as consistent discontinuity respondents if they gave discontinuity responses to 19 of the 20 questions asked (i.e., 95% correct). There was an age trend: 37% of the 5-year-olds, 58% of the 7-year-olds, and 57% of the 10-year-olds were consistent in their discontinuity answers. However, a Kruskal–Wallis test, $\chi^2(2) = 4.19$, $p = .123$, followed by chi-square tests showed that the differences between age groups were not statistically significant. Additionally, we checked which types of processes elicited more consistent discontinuity responses. To be classified as a consistent cessation respondent for a specific type of process, a child had to have given four discontinuity responses for this process. As shown in Figure 2, the percentage of cessation respondents is increasing with age for the majority of processes. However, the age difference was found to be statistically significant for only the biological, $\chi^2(2) = 12.62$, $p < .005$ and perceptual processes, $\chi^2(2) = 26.06$, $p < .0001$.

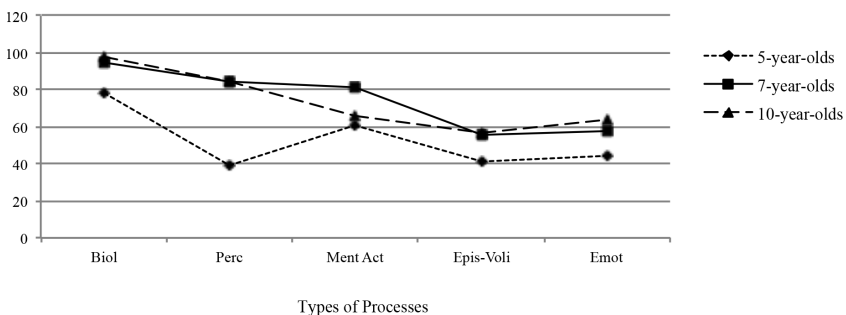


Figure 2. Percentages of consistent discontinuity responses by age group and process type. Biol = biological; Perc = perceptual; Ment Act = mental activity; Epis-Voli = epistemic-volitional; Emot = emotional.

Parents' BAS and PDCA Performance and Relationship With Children's Discontinuity Responses

Parents' mean score in the BAS was 31.21 ($SD = 7.08$, range 17–50) and in the PDCA scale it was 26.99 ($SD = 5.69$, range 8–37). A Pearson's product-moment correlation revealed a significant positive relationship between parents' BAS and PDCA scores ($r = .56$, $p < .001$), indicating that the strength of parents' belief in an afterlife has an influence on the content of their talk with their children about death and the afterlife.

The analysis also examined the relationship between parents' performance on the BAS and PDCA scales with their children's discontinuity responses. Thirty-three children were excluded from these analyses because they did not have complete parent data. The remaining sample ($N = 90$) consisted of the 5-year-old group ($n = 24$), the 7-year-old group ($n = 34$), and the 10-year-old group ($n = 32$).

Pearson product-moment correlations were calculated to determine the relationship between parents' BAS scores and children's mean discontinuity scores in each one of the five types of processes under investigation, as well as for the total discontinuity score. All correlations were nonsignificant (all $r_s < -.15$). Age was not found to affect the relationship between parents' BAS and children's discontinuity scores.

A nonsignificant correlation does not necessarily imply independence between two variables (Walker, 2010). Thus, to explore further whether the strength of parental belief in an afterlife was associated with children's tendency to give discontinuity responses, parents were classified by dividing the distribution of BAS scores into thirds (i.e., at the 33rd and 66th percentiles) as having low, moderate, or high belief in a psychological afterlife. The BAS score of the low group ($n = 24$, $M_{\text{BAS}} = 22.54$, $SD = 3.16$) was ≤ 27 , and that of the moderate group ($n = 54$, $M_{\text{BAS}} = 32.67$, $SD = 3.90$) ranged 28–39, whereas that of the high group ($n = 12$, $M_{\text{BAS}} = 31.21$, $SD = 3.16$) was ≥ 40 . Next, a series of ANOVAs were performed to determine the effect of belief group on children's total and category (process type) discontinuity scores. None of the ANOVAs yielded a significant main effect (all $F_s < 2.22$).

Pearson's correlations were also computed to investigate the association between parents' PDCA scores and children's total and process mean discontinuity scores. None of the correlations reached significance (all $r_s < -.19$). Children's chronological age was not found to affect the relationship between PDCA and discontinuity scores. In an attempt to investigate further the possibility of an association between the intensity of parents' self-reported tendency to encourage afterlife ideas during conversations

with their children and children's discontinuity reasoning, parents were classified into three groups—low, medium, and high—by using the 33rd and 66th percentiles of the distribution of the PDCA total score. The PDCA scores of the low group ($n = 6$, $M_{\text{PDCA}} = 12.33$, $SD = 4.41$) were < 17 , and those of the moderate group ($n = 34$, $M_{\text{PDCA}} = 23.94$, $SD = 2.33$) ranged 18–27, whereas those of the high group ($n = 50$, $M_{\text{PDCA}} = 30.82$, $SD = 2.32$) were ≥ 28 . One-way between-group ANOVAs failed to reveal a significant effect of PDCA group on children's total and category discontinuity scores (all $F_s < 1.92$).

Parents' Religiosity and Relationship With Children's Discontinuity Responses

Correlations were also calculated between parents' self-reported religious devotion, religious-services attendance, and scores in the BAS and PDCA scales. Parents' religious-devotion scores ($M = 2.64$, $SD = .99$) were significantly and positively associated with parents' religious-services attendance scores ($M = 2.41$, $SD = .83$), $r = .60$, $p < .001$, indicating that the more devoted a parent was, the more often that parent attended religious services. A significant positive correlation was also obtained between religious devotion and parents' BAS score ($r = .64$, $p < .001$) and PDCA score ($r = .45$, $p < .001$), suggesting that the more devoted a parent was, the stronger was that the parent's belief in a mental afterlife and the more frequently he or she described the deceased to his or her child as having a kind of continuous existence. Finally, a significant positive correlation was found between the frequency with which parents attended religious services and their scores in the BAS ($r = .50$, $p < .001$) and the PDCA ($r = .48$, $p < .001$).

However, no significant association was found between parents' religiosity and children's discontinuity scores in the afterlife belief task. Correlations among children's total discontinuity scores, category-discontinuity scores (biological, perceptual, mental activity, epistemic-volitional, emotional), and parents' religious-devotion scores were all nonsignificant (all $r_s < -.13$). Similarly, children's total and category-discontinuity scores did not correlate significantly with parents' religious-services attendance scores (all $r_s < -.18$).

Discussion

We consider the findings in relation to our two main goals, which were (a) to examine the development of afterlife reasoning in children aged 5–10 years

and (b) to investigate the relationship between children's afterlife reasoning about with the intensity or strength of parents' belief in an afterlife, and with the content of parent-child discourse about death and the afterlife. We also discuss limitations of the study and directions for future research.

Development of Children's Afterlife Beliefs

The results showed that 5-year-olds as a group were highly accurate at predicting the cessation of biological processes after death. Most of these children correctly pointed out, for instance, that once someone is dead, he cannot move his eyes and legs, and his heart and brain stop working. Moreover, a high percentage of 5-year-olds also understood that besides the dead agent's biological processes, his perceptual processes, and his capacity to engage in conscious mental activity cease at death. Five-year-olds did not seem to be as confident with respect to the cessation of the dead protagonist's epistemic-volitional and emotional states. That is, they found it difficult to deny the dead person the capacity to imagine, have knowledge, desires, and beliefs and the capacity to experience emotions. These results indicate a tendency on the part of the 5-year-olds to attribute cessation to specific types of psychological processes (perceptions, mental activity) after death and continuity to others (epistemic-volitional, emotional).

The 7- and 10-year-olds were overall more likely than the 5-year-olds to claim that the story protagonist's various processes ceased to function after death. In other words, older children were more inclined to deny the postdeath continuity of biological and psychological processes. Nevertheless, this age increase in discontinuity responding was found to be more pronounced for the dead agent's biological and perceptual processes and for his capacity to engage in mental activity and least pronounced for his epistemic-volitional and emotional states. This finding was supported by the consistency analysis, which showed that children in the two older age groups were less consistent in their responses when asked about the dead protagonist's epistemic-volitional and emotional states.

Taken together, our findings suggest that from as young as 5 years, children differentiate between the cessation of bodily processes and the continuation of some form of psychological existence (specifically epistemic-volitional and emotional existence). Furthermore, our findings indicate an overall increase, rather than a decrease, in discontinuity responding with older age. This pattern of results is consistent with Bering's findings (Bering & Bjorklund, 2004, Exp. 3; Bering et al., 2005). Similarly to Bering's, the present results indicate that the belief in a psychological

afterlife develops early in childhood, but that its strength or intensity fades as children grow older. Our results contradict Harris's findings (Astuti & Harris, 2008; Harris & Giménez, 2005), which showed that discontinuity responses increase rather than decrease with older age.

Despite the overall consistency of our developmental results and those of Bering's (Bering & Bjorklund, 2004, Exp. 3; Bering et al., 2005), one finding deserves particular attention. Children in the current study evaluated the dead agent's capacity to engage in conscious mental activity differently from his epistemic-volitional and emotional states. In fact, the percentages of discontinuity responses for the questions targeting conscious mental activity were more similar to the discontinuity evaluations for the questions assessing perceptual processes than for those assessing epistemic-volitional and emotional states. This is an unexpected finding because it does not conform to Bering's (2006) classification of processes into difficult-to-imagine-their-absence-of (DIA) and easy-to-imagine-their-absence-of (EIA) categories. In Bering's account, mental activities are classified, along with epistemic and emotional states, in the DIA category and are expected to be attributed more continuity after death than that ascribed to the EIA category of processes (which includes the biological, psychobiological, and perceptual processes).

One explanation for this finding is that the questions posed in the current study to assess the continuity or cessation of the dead agent's capacity for mental activity were incongruent with children's ideas of the afterlife. Specifically, asking children whether a dead individual can engage in "school type" mental activities (e.g., adding numbers together) may go against their ideas about the conditions of life after death. This explanation receives some support from the findings reported in a study by Pereira et al. (2012). When asked whether their dead-I could initiate a project, adult participants in that study replied that, as afterlife does not entail work, they could not imagine their dead selves dealing with projects. An alternative explanation of this finding, however, is possible. It could be proposed that our results indicate a tripartite—rather than a bipartite—classification of processes in terms of the imagination (or simulation) obstacles they put to children's minds (see also Bek & Lock, 2011). More specifically, this classification could be this: (a) EIA processes, which are inherently tied to the physical body—that is, the biological and the psychobiological processes. (b) MEIA (moderately-easy-to-imagine-their-absence-of) processes, which are acquired via specific body parts (brain, eyes, ears, brain, and so forth), such as the perceptual processes and mental activities. (c) DIA processes, which are not tied to specific body parts, such as the epistemic-volitional and emotional states. Future research should address whether

the specific items used in the present study are the reason for the increase in discontinuity responses to the questions concerning the dead agent's capacity to engage in conscious mental activity or whether a more accurate classification of processes—in terms of their resistance to discontinuity reasoning—is necessary.

Our findings extend those of Bering (Bering & Bjorklund, 2004, Exp. 3; Bering et al., 2005) in two ways. First, the task used in this study was similar to that developed by Bering, but asked children to reason about the continuity or cessation of a person's—not an animal's—functioning after death. Thus, our findings indicate that the developmental trajectory observed in Bering's studies cannot be attributed to task parameters. Second, the current study was carried out with a sample of children with a Greek Orthodox background. This indicates that the results obtained in the American and Spanish studies (Bering & Bjorklund, 2004, Exp. 3; Bering et al., 2005) are not limited to a specific cultural or religious group (i.e., Catholics). In other words, the current findings support the view that children are predisposed to believe in a mental afterlife and furthermore that whatever the impact of religious upbringing might be, this belief must rely upon the naturalistic predisposition first being in place.

Parental Testimony and Afterlife Beliefs: Their Relationship With Children's Afterlife Reasoning

The results of the current study revealed a positive association between the strength of Greek Orthodox parents' belief in a psychological afterlife (BAS) and the content of parental discourse (or testimony) with children about death and the fate of the deceased (PDCA). This indicates that the intensity of parents' afterlife belief is a variable affecting the manner in which parents discuss death and the deceased with their children. However, and despite this positive association, no significant association was obtained between parents' BAS and PDCA scores and children's discontinuity responses. This finding is particularly interesting in view of the fact that most of the parents ($n = 66$ [73.3%]) reported a moderate or high belief in the afterlife, and, furthermore, since the great majority ($n = 84$ [93.3%]) reported that they used dualistic and/or continuity terms when talking to their children about death.

One interpretation of the aforementioned finding is that children's reasoning about the afterlife develops naturally and does not depend on parental beliefs and input (or testimony) about the afterlife. This interpretation is consistent with the developmental findings of this study and those reported by Bering (Bering & Bjorklund, 2004, Exp. 3; Bering et al.,

2005). Moreover, this interpretation is in line with the results obtained in a study by Evans (2000), which focused on a different existential issue: the origins of species. Evans's study explored the relationship between parents' beliefs about creationism vs. evolution with those of their 5- to 12-year-olds. Parents' views, in that study, varied significantly from a consistent creationism through various combinations of mixed beliefs to a consistent evolutionism, and Evans hypothesized that parents who were more consistent in their views about creationism or evolutionism would foster children with similar beliefs. Contrary to Evans's expectations, however, the results showed the opposite tendency: Regardless of parental beliefs, 5- to 10-year-olds were inclined to embrace creationist views about the origins of species. In other words, children, in this age range tended to prefer explanations that involved an intentional creator even if the adults who raised them did not. It was not until early adolescence (approximately age 12) that the beliefs endorsed by parents had some influence on children's beliefs. Taken together, our results and those of the Evans study indicate that there are cases where parental beliefs in existential matters do not exert a straightforward influence on children's development of these concepts.

The findings of the current study are also consistent with research investigating children's belief in fantasy and/or mythical figures (e.g., the Tooth Fairy and Santa Claus) in relation to parents' encouragement of these beliefs (e.g., Clark, 1995; Prentice & Gordon, 1987). Prentice and Gordon (1987), for example, interviewed Jewish 3- to 10-year-olds regarding their beliefs in Santa Claus and the Tooth Fairy and also administered a questionnaire to their parents assessing their tendency to encourage children to believe in these entities. They found no relationship between parental encouragement and children's belief in either of these fantasy figures. Similarly, Clark (1995) found that children raised in fundamentalist Christian families believed that Santa was real even though their parents discouraged such belief. These studies are relevant to children's afterlife beliefs because, similarly to the deceased, fantasy entities (Santa Claus, Tooth Fairy) are personlike agents who exist in an outside-of-the-ordinary world and who transcend death (Norenzayan & Hansen, 2006). Moreover, from an early age, children develop a tendency to attribute cognitions and other mental states (desires, emotions) to these nonexistent entities (Sharon & Woolley, 2004). Thus, taken together, our results and those obtained in studies investigating children's beliefs in fantasy entities indicate that, rather than being inculcated by parents, children are naturally prepared to attribute mental existence to deceased and death-transcending fantasy agents.

Limitations and Future Directions

Several limitations frame the interpretation of the current findings and suggest directions for future research. First, it might be argued that the story context in which death was situated made its biological aspects salient, and this biological prime is partially responsible for the significant decrease with age in the number of mental continuity responses found (since “as children get older, they gain a more comprehensive understanding of the biological implications of death” [Harris & Giménez, 2005, p. 158]). Nevertheless, it is essential to acknowledge that although our death scenario was situated in the wild and although the protagonist’s death was the result of a poisonous snakebite, the effect of the alleged biological prime on children’s continuity responses must have been minimal for at least two reasons: (a) As explained in the introduction, no biomedical terms, such as those used in Harris’s secular narratives (Astuti & Harris, 2008; Harris & Giménez, 2005), were included in the story; and (b) the story did not describe a typical predation–prey situation, since the predator (snake) did not hunt or consume its prey (George), as was the case in Bering’s study. Most importantly, though, had, indeed, the story context triggered children’s biological reasoning about death, one would have expected this priming effect to uniformly influence the continuity attributed to different types of mental states and activities. This, however, was not the case. Instead, our results revealed that the questions assessing the dead agent’s epistemic-volitional and emotional states and his capacity to engage in conscious mental activity elicited different levels of discontinuity responding. Future work in this area should continue to tease out the role of prime type (biological vs. religious) on children’s attributions of mental continuity after death. Exploration of the impact of prime intensity (null vs. moderate vs. high) on children’s mental continuity judgments would also be an interesting direction for further study (see also Bek & Lock, 2011).

Second, another possibility is that the results of this study do not extend to children who are older than 10 years. As discussed earlier, Evans’s (2000) study did not find significant associations between parents’ and children’s existential beliefs for children aged up to 10 years. However, as Evans reports that, from the age of 12 years onward, children’s existential beliefs began to resemble closely those of their parents. Consequently, it is important for research to replicate and expand the present findings with a larger sample and with children who are older than age 12.

Third, as acknowledged earlier, a data set collected by asking parents to recall conversations with their children about the afterlife has its weaknesses. There is only one informant—the parent—and, thus, the data are

susceptible to recall and/or social desirability bias. Boyatzis (2005, 2012) has emphasized the value of combining research methods to study the link between parent–child communication about religious topics and children's developing views on these topics. In one of his studies (Boyatzis & Janicki, 2003), he combined the diary method with a parent self-report survey and reported that the two approaches were mutually informative: The diary method captured the actual content of parent–child conversations about religious and spiritual issues, whereas the parent survey tapped parents' global representations of their religious–spiritual discussions with their children. Future research should use a multimethod research strategy to collect data on children's afterlife beliefs and their associations (or disassociations) with parents' beliefs and testimony about the afterlife.

Fourth, the current study focused on parents' beliefs and testimony about the afterlife, yet did not assess the influence of overall family religiosity on children's afterlife reasoning. Correlational analyses showed that parents' self-reported religious devotion and religious-services attendance did not associate with children's afterlife reasoning. However, these are two of the several dimensions synthesizing the family religiosity construct (Woolley & Cornelius, 2013). This construct involves several family activities and practices, including church attendance and worship, reading of Bible stories and/or other religious material (e.g., children's books about death), and participating in religious rituals (including funerary rites), as well as praying. Engagement in these religious activities—both at home and at church—may foster children's developing afterlife beliefs. A study by Vaden and Woolley (2011) has shown that although children's beliefs in the reality of religious characters and events were not associated with parents' beliefs and communication, they were influenced by the amount of religious activity that parents engaged in with their children. Furthermore, a study by Rosengren et al. (in press) that has examined how family religiosity influences children's understanding of death has shown that 3- to 6-year-olds from religious families were more likely to make religious references when discussing the continuity of life after death. Studies need to systematically investigate associations between individual dimensions of family religiosity and children's developing ideas about the afterlife.

In conclusion, our results support the hypothesis that the young mind is from early on motivated to attribute mental states to dead agents and this tendency is not attributable, in any direct manner, to parental beliefs and testimony about the afterlife. Clearly, however, the role of parental—and cultural–religious—influences on children's developing afterlife beliefs needs to be examined more fully. Longitudinal research is also necessary

to enrich our knowledge on the stability or change of children's afterlife concepts over the years.

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Appendix A: The Script of the Story

This story is about a man named George who went into the jungle to search for a wild flower. While in the midst of the jungle, George can *see* the sun shining . . . he can *hear* the birds singing . . . and he can *smell* the beautiful trees and flowers. George is also *thinking* about a lot of things. He *thinks* of his parents. He *loves* them very much. George is *very happy* because he received a card from his parents. They live in an island . . . their house is right next to the sea. When he leaves the jungle, George *wants* to visit his parents in the island. He can already *imagine* himself swimming in the sea. George also *remembers* his dog. Before he came to the jungle, the dog did something very bad. George had left his luggage half open, and the dog took his new pair of shoes out of it and chewed them up. George got really *sad* about his new shoes and very *angry* at his naughty dog. As he walks in the jungle, George starts to *add some numbers* in his head. He is very good with numbers and can perform some difficult calculations. George *believes* that he has a talent in math. He enjoys *learning* new things . . . that's why he reads lots of books. Just then, something terrible happens. A snake comes out of some bushes. The snake bites George on his leg.

The snake is poisonous. George shrieks *as he feels the pain* of the poisonous bite on his leg. George falls on the ground. He is not alive anymore . . .

Appendix B: Parental Discourse to Children About the Afterlife (PDCA) Scale

1. I use the terms “soul” and/or “spirit” when I discuss death with my child.
2. I use euphemisms such as “passed away,” “departed,” “left us” when I discuss death with my child.
3. When I talk to my child about death, I tell the child that the deceased is now with God.
4. I describe death to my child as a state in which the soul/spirit continues to exist.
5. I describe death to my child as a state in which the body continues to exist in a spiritual form.
6. When I talk about a deceased individual to my child, I refer to the deceased as if that person can perceive us (can see us, hear us . . .).
7. When I talk about a deceased individual to my child, I refer to the deceased as if that person is having emotions (is happy, sad, peaceful . . .).
8. When I talk about a deceased individual to my child, I refer to the deceased as if that person has mental states (thinks, wishes, knows, remembers . . .).

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