

Children's acceptance of conflicting testimony:

The case of death

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Abstract

Children aged 7 and 11 years were interviewed about death in the context of two different narratives. Each narrative described the death of a grandparent but one narrative provided a secular context whereas the other provided a religious context. Following each narrative, children were asked to judge whether various bodily and mental processes continue to function after death, and to justify their judgment. Although children often claimed that functioning ceases at death and offered appropriate biological justifications for that judgment, they also claimed that functioning continues after death and offered appropriate religious justifications. The tendency to invoke an afterlife was more frequent among older children than younger children, more frequent in the context of the religious narrative as opposed to the secular narrative and more frequent with respect to mental processes than bodily processes. Particularly among older children, two distinct conceptions of death appear to co-exist: a biological conception in which death implies the cessation of living processes and a metaphysical conception in which death marks the beginning of the afterlife.

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In conceptualizing the phenomenon of death, people can and do adopt two different views. From a secular perspective, death is typically conceived as a terminal point when the bodily machine stops working. On this view, the life of any given individual ends irreversibly and completely at death. On the other hand, from the perspective of many of the world's religions, death is regarded as a metamorphosis – the beginning of another type of life that is not contingent on mundane, biological processes. On this view, death is seen as a transition rather than as an end-point. We attempt to clarify the extent to which children understand these different conceptions of death. Moreover, insofar as children do understand these alternative conceptions, we ask if they regard them as compatible alternatives. Despite a long tradition of research on children's understanding of death, the way in which they assimilate both a biological and a religious perspective on death – and the extent to which they regard them as compatible – has never been systematically studied. Below, we briefly review that research tradition, framing our review both in terms of what has been established and in terms of the neglected issue just described.

The first studies on children's understanding of death date from the 1940s. Three different theoretical perspectives were adopted. First, psychoanalytic theorists explored the emotional factors involved in the understanding of death (Florian & Mikulincer, 1998; Furman, 1974; Mauer, 1966). Second, a clinical tradition focused on children's reactions to the death of a particular family member or close friend (Black & Urbanowicz, 1987; McGowen & Pratt, 1985; Prichard & Epting, 1991-1992; Zanbelli, Clark, Borile & de Jong, 1988). Third, cognitive theorists studied

children's acquisition of the concept of death (Brent & Speece, 1993; Candy-Gibbs, Sharp & Petrun, 1984-1985; Hoffman & Strauss, 1985; Keynon, 2001; Lazar & Torney-Purta, 1991; Slaughter, Jaakola & Carey, 1999; Speece & Brent, 1992; White, Elmson & Prawat, 1978;). With respect to this last tradition, research was initially inspired by Piaget's developmental theory and, more recently, by the question of how children understanding of death fits into their broader understanding of the biological domain.

Early investigators employed a variety of techniques: open-ended questions, drawings, play-sequence analysis, semi-structured interviews – making it difficult to compare across studies. More recent findings, however, have established a general pattern of acquisition to which most researchers subscribe. According to that pattern, 4-year-olds understand death as a different state from life. Between 5 and 7 years, children acquire a more complex understanding of death that includes many of the key biological components of the concept – for example, they start to understand that death is irreversible and affects every living being. However, their understanding is not generally regarded as complete until around the age of 10 years.

Within this more recent tradition, most studies have focused on four key aspects of the biology of death: universality – the understanding that all living beings must die one day; irreversibility – the fact that once dead, one cannot come back to life; cessation of corporeal life – the realization that death involves the termination of all corporeal functions and organs; and causality – an appreciation that it is precisely the cessation of the corporeal functions that causes death. These various components are not all mastered simultaneously (Hoffman & Strauss, 1985; Keynon, 2001; Lazar & Torney-Purta, 1991; Slaughter, Jaakola & Carey, 1999; Speece & Brent, 1992, 1993; Towley & Thornburg, 1980). For example, Speece and Brent (1992) claim that

children first understand the universality of death, later its irreversibility and finally – and concurrently – the cessation of corporeal function and causality.

Despite this emerging consensus in the developmental literature, it is interesting to note that adults are sometimes more equivocal about the boundaries between life and death than children. For example, Brent and Speece (1993) asked a sample of adults the same set of 5 questions about the irreversibility of death that they had put to a sample of children aged between 5 and 10 years (Speece & Brent, 1992). In reply to the question: “Can a dead person become alive again?” almost all of the children (93%) but only just over half of the adults (55%) said no. In addition, only 44% of the adults answered the five questions in a consistent fashion. Analysis of the justifications indicated that adults explained the reversibility of death by reference either to special medical techniques (e.g., claiming that resuscitation might be possible if the person has been dead for only a short time) or to the possible existence of supernatural transformations such as reincarnation or resurrection. Indeed, studies that have included samples of young adolescents as well as children reveal a progressive increase in references to the afterlife (Brent, Speece, Lin, Dong & Yang, 1996; Wenestram & Wass, 1987).

Taking these various findings together, we find an intriguing developmental pattern. Young children adopt a secular, biological point of view and increasingly conceive of death as the end of life. Eventually, however, older children and many adults incorporate religious elements into their conception of death. How are these two perspectives acquired and how do they come to coexist?

To answer these questions, we interviewed 7- and 11-year-old children about what happens when people die. Children were presented with two separate narratives. Each narrative described the death of an elderly person. One narrative offered a

religious context for the death. The other narrative offered a secular context for the death. After each narrative, children were asked a series of 12 questions in which they were invited to judge whether or not various processes had stopped or continued. Six of these questions referred to bodily processes and six referred to mental processes. The sixth and final question of each of these two sets asked about the function of the body as such and the mind as such. Following these two more global questions, children were asked to justify their yes/no judgment.

This design allowed us to seek answers to three main questions. First, we asked whether older children adopt a religious perspective more often than younger children. On the one hand, contemporary research has typically portrayed cognitive development in a variety of domains – including the understanding of biology (Carey, 1999) and psychology (Wellman & Gelman, 1992) – as a process of conceptual change akin to that observed in the history of science. On this account, we might reasonably expect children to increasingly consolidate a biological conception of death. However, as noted above, there are indications that adolescents and adults are increasingly likely to articulate a religious conception of death. These competing predictions can be tested by looking at children's answers to the process judgment questions and at their justifications. The child-as-scientist perspective predicts that as compared to younger children, older children will produce more 'does not work' judgments and more biological justifications. On the other hand, if older children increasingly adopt a religious perspective they should produce fewer 'does not work' judgments and more religious justifications than younger children.

Our second goal was to find out whether children regard these two conceptions as incompatible with one another or, alternatively, as different but ultimately compatible. If children think of the two conceptions as incompatible, we

would not expect the same child to espouse both. Thus, whether children are prompted with a religious narrative or a secular narrative, we would expect them to answer in a relatively consistent fashion across both – asserting in each context, for example, that most if not all processes cease at death and offering secular, biological justifications or, alternatively asserting that most, if not all processes continue after death and offering religious, non-biological justifications. On the other hand, if children regard these two conceptions of death as different but compatible, we would expect them to shift from one conception to the other depending on the narrative context. Thus, when prompted with a secular narrative, we would expect children to judge that many processes stop working at death and to offer secular, biological justifications and when prompted with a religious narrative to claim that many processes continue to function and to offer religious, non-biological justifications.

The third goal was to explore children's consistency from a different, albeit related, perspective. If children think of the person as an indivisible whole, then whether we ask them about bodily processes (e.g. the functioning of the eyes or the brain) or about concomitant mental processes (e.g. the functioning of sight or of the mind) they should give consistent replies – claiming either that bodily and mental processes have stopped or that both types of process continue. On the other hand, if children are susceptible to dualistic thinking – to construe mental processes as separate from, and independent of, bodily processes – then they would likely offer a different pattern of replies in the two cases, claiming for example that bodily processes no longer function whereas mental processes continue. Evidence that children are prone to such dualistic thinking has been reported by Bering and Bjorklund (2004). Kindergarten and elementary school children were asked a set of parallel questions phrased either in terms of bodily functioning (e.g., “Do his eyes still

work?") or in terms of mental functioning (e.g., "Can he see this tree?"). Children were more likely to claim that bodily functioning ceases at death than mental functioning. Following the procedure devised by Bering and Bjorklund (2004), we asked children about bodily and mental functioning after death using, where possible, paired questions. One member of each pair included a reference to a body part (e.g., the eyes) whereas the other member of the pair referred instead to a mental process typically associated with that body part (e.g., seeing).

Method

Participants. A total of 48 children divided into two age groups was tested: 24 7-year-olds (mean = 7 years 5 months; range = 6; 10 to 8; 11) and 24 11-year-olds (mean = 11 years 4 months; range = 10; 8 to 12; 1). Children were recruited from public schools in the metropolitan area of Madrid and came from middle and upper-middle class social backgrounds.

Procedure. All children heard two different narratives – a religious narrative and a secular narrative – about the death of an elderly person (a grandfather and a grandmother). In the religious narrative, religious cues were included. Thus, elements such as a priest, and the dead person being with God were mentioned. The exact wording of the narrative was as follows: "In this picture you see Sara's grandmother. At the end of her life Sara's grandmother became very ill. She was taken to a hospital where they tried to help her but she was too old and they could not cure her. The priest came to talk to Sara about what had happened to her grandmother. He said to Sara: "Your grandmother was very ill. There is nothing the doctors could do. Your grandmother is with God now." Now that Sara's grandmother is with God..."

For the secular narrative, no religious cues were included. Instead, a doctor (rather than a priest) was described as explaining the death to the family. The exact

wording of the narrative was as follows: “In this picture you see Bill’s grandfather. At the end of his life, Bill’s grandfather became very ill. He was taken to a hospital where they tried to help him but he was too old and they could not cure him. The doctor came to talk to Bill about what had happened to his grandfather. He said to Bill: ‘Your grandfather was very ill. There is nothing the doctors could do. Your grandfather is dead now.’ Now that Bill’s grandfather is dead and buried...”

Each narrative was followed by a set of 12 questions asking about different processes that are present in living persons but cease after death. Six of the questions concerned the body; children were asked about the functioning of particular bodily parts and finally about the functioning of the body as such. Thus, they were asked about the eyes, brain, ears, mouth, heart, and body. Six of the questions concerned the mind; children were asked about the functioning of various mental processes typically associated with the above body parts and finally about the functioning of the mind as such. Thus, children were asked about seeing, thinking, hearing, talking, feeling emotion, and the mind.

After hearing the secular narrative children were asked: “Now that Bill’s grandfather is dead, do his eyes still work?” or “Now that Bill’s grandfather is dead, can he see anything?” After hearing the religious narrative, children were asked the same set of questions but each question was prefaced with the words: “Now that Sara’s grandmother is with God...?” Following each of the two more general questions, namely the questions about the body and the mind, children were asked to justify their answer. Specifically, they were asked “Why is it that her/his body/mind is still working (doesn’t work anymore)?”

The same set of questions was asked for each of the two narratives so that children answered them twice. Three of the six questions about bodily processes

called for a “yes” response and three called for a “no” response. Similarly, three of the six questions about mental processes called for a “yes” response and three called for a “no” response. Two alternative versions of the questionnaire were constructed (versions A and B) such that any given question could be posed in a “yes” or “no” format. For example, in version A, the question about seeing was “Now that... can he see anything?”, in version B the question was “Now that... has he stopped seeing anything?” Half of the children were given version A of the questionnaire and the other half were given version B. For each version, half of the sample heard the religious narrative first and the secular narrative second; the other half of the sample heard the two narratives in the reverse order. Finally, for each version and type of narrative, half of the children first answered the six body questions and then the six mind questions, and half received the questions in the reverse order. The order of five of the six questions was randomized across participants but for any given child that random order was retained across the bodily process and mental process questions. The questions about the mind and the body were always posed last in the series of six questions because they were always followed by a request for a justification.

Results

We present the results in three sections. First, we describe children’s judgments about the cessation or continuation of bodily and mental processes after death. Second, we present their justifications for those judgments. Finally, children’s judgments and justifications are examined in combination with a view to assessing the consistency with which individual children display a biological conception of death, a metaphysical conception or both.

Judgments

Children's replies to the bodily and mental process questions were coded in a binary fashion as either 'does work' or 'does not work' judgments. Figure 1 shows the mean number of 'does not work' replies (maximum = 6) that children gave as a function of Age, Narrative (Secular versus Religious) and Process Type (Body versus Mind).

 Figure 1 about here

Inspection of Figure 1 indicates the following conclusions. First, 'does not work' answers are less frequent among older children than younger children. Second, the pattern of answers varies markedly depending on the narrative. 'Does not work' answers are less frequent in the context of the religious narrative than the secular narrative. Finally, 'does not work' answers are less frequent for mind questions than body questions. Following a preliminary analysis, which showed that children's replies were not affected by the order in which they received the two narratives, a mixed ANOVA of Age X Narrative X Process Type was conducted. This confirmed that 'does not work' answers were less frequent among older children (mean = 11.13, SD 6.45) than younger children (mean = 16.88, SD 6.99), Age ($F(1,46) = 8.77$, $p < .005$), less frequent in the context of the religious narrative (mean = 4.85, SD 4.74) than the secular narrative (mean = 9.15, SD 3.63), Narrative ($F(1,46) = 49.24$, $p < .0001$) and less frequent for mind questions (mean = 6.00, SD 4.07) than body questions (mean = 8.00, SD 3.67), Process Type ($F(1,46) = 26.29$, $p < .0001$). There were no significant interactions.

Justifications

Next, children's justification of their responses to the final question of each set of six questions – namely questions about the mind as such and the body as such – were examined. Children's replies were allocated to the following categories:

NO MOVEMENT: Explanations referring to a lack of movement or action. "Because he is dead and he can't move" "Because he is still" "Because if she is dead I don't see how she could walk"

MEDICAL-BIOLOGICAL: Explanation referring to specific internal organs and substances. "If the heart stops, all the body stays still" "Without blood the skull can't move" "The heart doesn't beat and it can't distribute blood to through the body and the organs"

END OF LIFE: Explanations asserting that death is the end of life or the end of functioning. "When someone dies, he can't do anything" "If he is dead, nothing can work" "Life has gone and it is over"

DECAY: Explanations referring to the decay of the body after death. "He has been eaten by worms, he has no body. He just has bones" "Because she is decomposed, because when you die worms eat what you have" "Because he is dead and the body disintegrates until there is only the skeleton left".

DEAD/BURIED: Explanations that only referred to death or burial with no further elaboration: "Because he is dead" "Because he is under the earth" "Because he is dead and buried"

GOD-HEAVEN: Explanations asserting that being with God or in heaven enable the person, the body, or the mind to continue to function. "God has to give her life and the body is working" "Because in the sky with God so she can't die again and everything is working" "When she dies and goes to heaven, God will give her a brain again" "Because God helps her" "In heaven everything can work even if she is dead. God is

credited to give you all that”

PARTS: Explanations asserting that there is a part of the mind or the body – or some special entity such as a spirit, soul, lighter being, or consciousness – that continues functioning or lives on even if other parts cease to function: “The soul keeps working” “She is still alive in her soul” “Her soul is alive even if her body is buried” “The spirit is out there and keeps feeling” “Because some parts still work but not others...” “Because he is not completely dead. He is also a bit alive.”

UNINFORMATIVE: unclassifiable or “don’t know” answers.

Children offered a total of four justifications – one for the mind and one for the body in the context of each of the two narratives. Each justification was examined and allocated to at least one of the categories above. Where appropriate, any given justification was allocated to more than one category. For example, some children referred to the fact that a dead person cannot move and also to the fact that internal organs such as the heart have ceased to function (e.g. “Because if she is dead, she has no control over her body – she can’t move. The heart has stopped beating and she has no mind.”). Such replies were allocated to the categories: NO MOVEMENT and MEDICAL-BIOLOGICAL. Similarly, some children referred to the fact that a dead person continues to function when they are in heaven and also to the fact that it is only a part of them that functions (e.g. “There are some parts that have gone to heaven with her and there are some things that she can do”). Such replies were allocated to the categories: GOD-HEAVEN and PARTS.

The justifications given by 12 children from each age group were independently coded by the two authors. Their judgments were mostly in agreement (Cohen’s Kappa = 0.95). The small number of disagreements was resolved via

discussion. The remaining children were coded by the first author who subsequently consulted with the second author in cases of doubt.

Following this fine-grained categorization, children's justifications were re-classified to index the degree to which they provided biological versus metaphysical justifications. Any justification – or portion of a justification – that had been allocated to the categories NO MOVEMENT, MEDICAL-BIOLOGICAL, END OF LIFE, DECAY or DEAD/BURIED was re-classified as a biological justification. Any justification – or portion of a justification – that had been allocated to the categories GOD-HEAVEN or PARTS was re-classified as a metaphysical justification.

Figures 2 and 3 show respectively the mean number of biological and metaphysical justifications that children offered as a function of Age, Narrative (Secular versus Religious) and Process Type (Body versus Mind). Inspection of the two figures indicates the following conclusions. First, there is a decline with age in the number of biological justifications but an increase with age in the number of metaphysical justifications. Second, there is a marked effect of narrative context: the secular narrative systematically prompts more biological justifications than the religious narrative whereas the religious narrative systematically prompts more metaphysical justifications than the secular narrative. Finally, more biological justifications are produced for bodily processes than mental processes but the number of metaphysical justifications shows no systematic variation with process type.

Figures 2 and 3 about here

To check these conclusions, three t-tests were conducted on each type of justification in order to assess the effects of age, narrative and process type. (Note that

an overall ANOVA was precluded because children were asked to provide only one justification for each of the four combinations of narrative and process type.) These tests confirmed that more biological justifications were produced by younger children (mean = 3.04; SD 1.76) than by older children (mean = 2.00; SD 1.38) ($t(46) = 2.28$, $p < .027$) whereas more metaphysical justifications were produced by older children (mean = 2.67; SD 1.79) than by younger children (mean = 1.50; SD 1.82) ($t(46) = 2.24$, $p < .030$).

Second, more biological justifications were produced for the secular narrative (mean = 1.73; SD 0.89) than for the religious narrative (mean = 0.79; SD 1.01) ($t(47) = 6.81$, $p < .001$) whereas more metaphysical justifications were produced for the religious narrative (mean = 1.44; SD 1.24) than for the secular narrative (mean = 0.65; SD 1.00) ($t(47) = 4.43$, $p < .001$).

Finally, more biological justifications were produced with respect to bodily processes (mean = 1.48; SD 0.92) than mental processes (mean = 1.04; SD 1.03) ($t(47) = 2.89$, $p < .006$). By contrast, metaphysical justifications were produced approximately as often with respect to mental processes (mean = 1.10; SD 1.04) as bodily processes (mean = 0.98; SD 1.00) ($t(47) = 1.10$, n.s.).

Replies and Justifications

Finally, the relationship between children's process judgments and their justifications was analyzed. There were two goals to this analysis. First, it offered a further opportunity to check whether children's pattern of responding varied with age, narrative and type of process, as indicated by the separate analyses of judgments and justifications described above. Second, it permitted an assessment of the extent to which individual children were consistent or shifted in their conception of death in the course of the interview.

Recall that on four different occasions, namely with respect to the body and the mind in each of the two narrative contexts, children were asked to make a judgment about whether functioning continued and to justify that judgment. Each judgment and its accompanying justification were examined to assess whether – in combination – they reflected a biological or a metaphysical conception of death. If children judged that functioning had ceased and their subsequent justification fell into at least one of the five categories of justification classified as biological, they were credited with a biological orientation. If, on the other hand, they judged that functioning continued and their subsequent justification fell into at least one of the two categories of justification classified as metaphysical, they were credited with a metaphysical orientation. Finally, if there was no such connection between their judgment and their justification or if children failed to offer an informative justification, they received no credit for either conception.

Figures 4 and 5 show the percentage of younger and older children respectively who were credited with a biological conception, or with a metaphysical conception, or received no credit for each of the four combinations of narrative and type of process (body versus mind).

 Figures 4 and 5 about here

Inspection of Figures 4 and 5 confirms what would be expected from the analysis of judgments and justifications considered separately: the proportion of children assigned a metaphysical as opposed to a biological conception is greater among older than younger children, in the context of the religious as opposed to the secular narrative, and in answering with respect to the mind as opposed to the body.

Thus, at one extreme, the biological conception is almost completely dominant among younger children discussing the body in the context of the secular narrative. At the other extreme, the metaphysical conception is almost completely dominant among older children discussing the mind in the context of the religious narrative.

Finally, the extent to which children shifted during the interview from one conception to the other was examined. For this analysis, only those occasions (maximum = 4) on which children received credit for either a biological or a metaphysical conception were examined; occasions on which children could not be credited with either conception were set aside. Children were allocated to three different categories: ‘Consistently biological’ if they were consistently credited with a biological conception; ‘Consistently metaphysical’ if they were consistently credited with a metaphysical conception; and ‘Biological + Metaphysical’ if they were credited at least once with a biological conception and at least once with a metaphysical conception. Table 1 shows the number of younger and older children allocated to each of these three categories.

 Table 1 about here

Inspection of Table 1 shows that the majority of younger children consistently adopted a biological conception whereas the majority of older children adopted a mixed Biological + Metaphysical conception. Chi-Square analyses confirmed that the proportion of children consistently adopting a biological orientation was greater in the younger group than the older group ($\chi^2(1) = 7.93, p < .01$) whereas the proportion of children adopted a mixed Biological + Metaphysical conception was greater in the older group than the younger group ($\chi^2(1) = 4.81, p < .05$).

Discussion

In the introduction, we posed three questions. We asked whether older children display a more consistently biological conception of death than younger children, or alternatively show increasing evidence of a metaphysical conception of death. Second, we asked whether a biological and a metaphysical conception of death co-exist in children's minds such that they shift readily from one to the other depending on contextual cues. Finally, we asked whether children consider that death affects bodily and mental processes in the same way.

With respect to the first question, each of the three analyses revealed a consistent age change. Older children were less likely than younger children to judge that bodily and mental processes cease to function after death. They were also more likely than younger children to offer metaphysical justifications for their judgment and less likely to offer biological justifications. Finally, when their judgments and justifications were examined in combination, the majority of older children displayed both a metaphysical and a biological conception of death. Taken together this evidence is difficult to reconcile with the claim that children's conceptualization of death simply consists in the consolidation of a biological stance. At the very least, we may conclude that children also increasingly articulate a religious or metaphysical conception of death.

What is the source of this age change? One possible explanation is that older children simply receive more information – whether from parents, teachers or religious authorities – about the religious interpretation of death. In the absence of systematic evidence, this proposal is questionable. Rather, we might expect the reverse. Thus, we might expect that adults protect children – and especially younger children – from the biological finality of death by offering them a less threatening

perspective, namely the religious conception of death. A different and more feasible explanation for children's increasing tendency to adopt a religious conception of death is that such a metaphysical conception is ultimately parasitic upon a thorough appreciation of the biological implications of death. On this argument, children come to attend to the full implications of adult testimony concerning the afterlife only when they realize that such testimony calls into question – or at least mitigates – the disturbing implications of the biological account of death. Thus, as children come to recognize that death implies an inevitable and irrecoverable loss of function for everyone, including themselves, the continuity of function implied by the religious conception of death becomes more significant and more persuasive.

We may now consider whether the two different conceptions of death co-exist in children's minds. Several pieces of evidence indicate that they do co-exist. First, as noted above, the majority of 11-year-olds articulated both conceptions in the course of the interview. Even in the 7-year-old group a minority of children articulated both conceptions. Furthermore, across both age groups, the analyses of judgments and of justifications revealed marked and consistent effects of narrative context. Children were more likely to judge that processes would no longer function and to offer biological justifications for such judgments in the context of the secular narrative rather than the religious narrative. Conversely, they were more likely to judge that processes would continue to function and to offer metaphysical justifications in the context of the religious narrative rather than the secular narrative.

How should we interpret children's acceptance of both conceptions? After all, their articulation of the two conceptions obliges them to claim that various mental and bodily processes cease to function and also to claim that they continue to function. It might be expected that children would try to avoid such apparent contradictions – and

certainly not to multiply them in the course of development. There are at least three possible interpretations of their pattern of responding. First, children might not recognize that such claims are contradictory. Second, children might recognize that such claims conflict with one another but somehow quarantine one set of claims from the other and acquiesce to both. Finally, children might be aware of the apparent tension between a biological and a religious stance toward death and find ways to reconcile them. We may consider each of the proposals in turn.

Whatever its initial appeal, the first explanation is hard to square with what we know about children's sensitivity to inconsistency. It is true that young children often fail to identify inconsistencies, including clear-cut logical contradictions (Ruffman, 1999). However, the available evidence also shows that children improve in their ability to identify inconsistent claims. Certainly, by the age of 11 years, children are relatively good at detecting inconsistencies (Harris, Kruithof, Meerum Terwogt & Visser, 1981; Markman, 1977; 1979). Accordingly, children's insensitivity to inconsistency is not a plausible explanation for the developmental pattern observed in the present study.

If children are able to recognize the inconsistencies between the two conceptions of death do they simply ignore that inconsistency? More specifically, do they pay lip service to each conception depending on the narrative context. Thus, when posed questions by an adult interviewer in a given narrative context they parrot the claims that they associate with that mode of discourse about death without fully endorsing those claims. There are two reasons for doubting this line of argument. First, if children were merely repeating back a given conception of death without actually believing it, we might expect such echoic claims to be more common among younger children. Yet, as noted above, the tendency to switch between a biological

and a metaphysical conception of death, as measured by children's judgments and justifications taken in combination, was more evident in the older group even if it was not altogether absent in the younger group. A second reason for doubting this line of argument is that it is difficult to reconcile with what is known about adults' presumably sincere claims about death. More specifically, surveys in the United States typically show that many adults believe in an afterlife (Greeley & Hout, 1999). At the same time, it is a reasonable presumption that those same adults would, if probed, sincerely articulate and endorse a biological conception of death. For example, they would presumably acknowledge that bodily and neural processes and associated mental processes such as thinking, perceiving and the capacity to suffer and to feel pain all cease at death. In short, to the extent that many adults subscribe concurrently to both a biological and a metaphysical conception of death, it is invidious to insist that children cannot be sincere in their articulation of both.

We may turn, therefore, to the third possibility, namely that children are capable of recognizing the tension between the two conceptions but also find ways to resolve or mitigate that tension. Recall that children who offered a metaphysical justification for the continued functioning of the mind or the body said either that the person was now in a different place, namely with God or in heaven, or that certain special parts of the person had survived death even if others no longer functioned. Occasionally, they advanced both metaphysical arguments claiming that, for example, the person's soul was in heaven. Such justifications suggest that children may come to think of death as two successive states: a biological event characterized by the breakdown of the bodily machine and a metaphysical transformation characterized by the start of a new life in a different place and/or in a different form.

Note that various everyday metaphors could serve to reinforce this elision of biology and metaphysics. A dead person is said to have passed away, or departed, or left us. More generally, insofar as life is frequently described and conceptualized as a journey (Lakoff & Turner, 1989), children may find it easy to conceptualize the biological aspect of death not as the final and ultimate destination but as a temporary halt in a continuing journey. In future research, it will be interesting to probe the extent to which children do think of the two conceptions of death as compatible, and even connected with one another in a temporal and causal sequence.

One way in which children appear to reconcile the two conceptions is by differentiating between bodily and mental processes. Recall that children were more likely to judge that bodily functioning ceases at death than does mental functioning. They were also more likely to offer biological justifications for the cessation of bodily processes than for the cessation of psychological processes. A plausible explanation is that children think in dualistic terms (Bering & Bjorklund, 2004; Bloom, 2004). On the one hand, they come to understand that the body and its various parts, such as the limbs, the eyes, the mouth, the brain and the heart, compose an integrated biological system. Hence, they realize that once that system fails, all of its components fail. On the other hand, given the apparently non-material nature of mental processes, children may find it more difficult to acknowledge that they also form part of the integrated biological system that ceases to function at death. Moreover, to the extent that children assimilate Christian doctrine, they may come to associate at least some mental processes with the alleged immortality of the soul.

In conclusion, the present findings add to the growing body of evidence that young children construct such a biological understanding of death (Bering & Bjorklund, 2004; Slaughter et al., 1999). Nevertheless, alongside that conception (and

arguably parasitic upon it) children also construct a religious or metaphysical conception of death. That alternative conception leads them to deny that functioning ceases after death. Indeed, when 11-year-olds are asked about mental functioning after death in the context of a religious narrative, most of them claim that the mind continues to function and they offer a religious justification. Perhaps the most striking aspect of the findings is that a biological and a metaphysical conception of death co-exist in the mind of many children especially by the age of 11. Nevertheless, despite that co-existence, children are not incoherent. When claiming that processes cease at death, they typically offer an appropriate biological justification and when claiming that processes survive death, they typically offer an appropriate metaphysical justification. Further research is needed to understand how far these two conceptions co-exist peacefully in children's minds – and indeed in the minds of adults.

Acknowledgement

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Table 1. Number of younger children assigned to three different categories of consistency

	Consistently Biological	Biological + Metaphysical	Consistently Metaphysical	N
Younger	14	7	2	23 ^a
Older	4	16	4	24

Footnote a: One younger child received credit on only one occasion and could not therefore be assessed for consistency.

Figure 1. Mean number of 'does not work' replies as a function of Age, Narrative (Secular versus Religious) and Process Type (Body versus Mind).

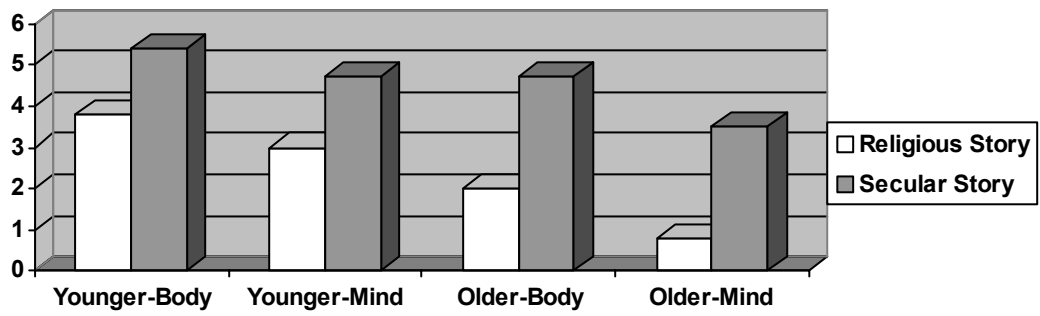


Figure 2. Mean number of biological justifications as a function of Age, Narrative (Secular versus Religious) and Process Type (Body versus Mind).

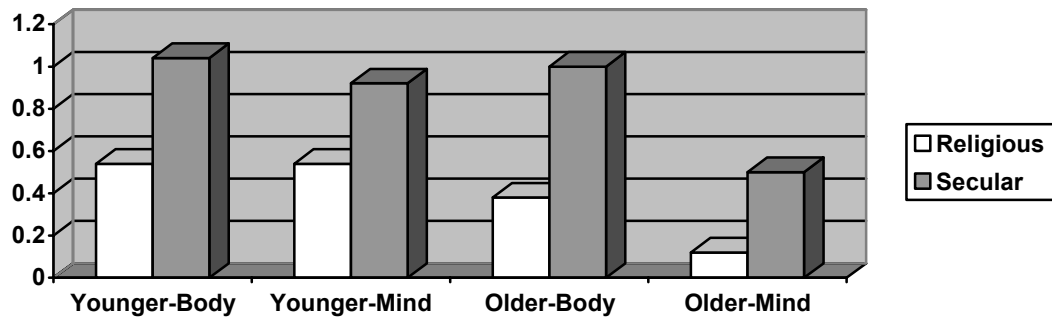


Figure 3. Mean number of metaphysical justifications as a function of Age, Narrative (Secular versus Religious) and Process Type (Body versus Mind).

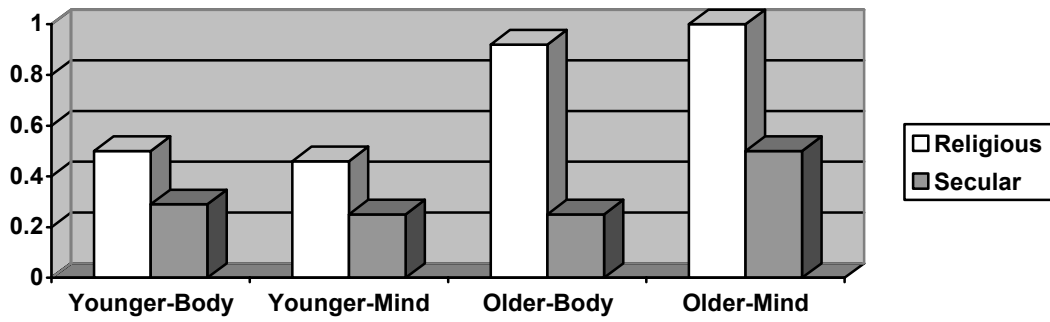


Figure 4. Percentage of younger children who were credited with a biological conception, a metaphysical conception, or received no credit as a function of Narrative (Secular versus Religious) and Process Type (Body versus Mind).

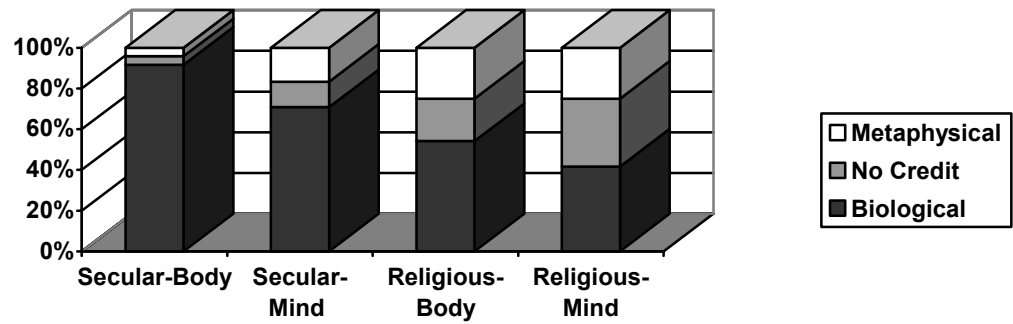


Figure 5. Percentage of older children who credited with a biological conception, a metaphysical conception, or received no credit as a function of Narrative (Secular versus Religious) and Process Type (Body versus Mind).

