

Review



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Sources of children's knowledge about death and dying

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In the last century, decreases in infant and child mortality, urbanization and increases in healthcare efficacy have reduced children's personal exposure to death and dying. So how do children acquire accurate conceptions of death in this context? In this paper, we discuss three sources of children's learning about death and dying, namely, direct experience of death, parental communication about death and portrayals of death in the media and the arts. We conclude with recommendations about how best to teach modern children about this aspect of life.

This article is part of the theme issue 'Evolutionary thanatology: impacts of the dead on the living in humans and other animals'.

1. Introduction

Over the last hundred years, improvements in public health and modern medicine have led to decreased mortality rates, particularly in children and young adults [1]. Prior to the twentieth century, death was most commonly experienced at home, following a short illness or as a result of workplace accidents [2]. The highest mortality rates were found in children and infants, but it was not uncommon for adults to die while still in the prime of life [1,2]. When a death occurred outside the home, the body was typically held in the home for traditional rituals (e.g. wakes) before burial or cremation [2,3]. Extended families lived in close proximity, so death was encountered and mourned by a close-knit community that included children.

Recent changes to family structures and compositions, and greater geographical mobility reducing contact with extended family has resulted in a significant decline in mourning rituals (for example, traditional Irish wakes at home [4]), particularly in Western societies [1–4]. This trend is also being increasingly experienced in many traditional cultures as a result of increasing globalization and a shift from traditional rites and ceremonies to more modern social norms (see, for example, Jacob *et al.* [5]). As a result, children, and even young adults, have become increasingly isolated from the realities of death in everyday life.

Coincidentally, there have been significant changes to attitudes concerning how children should be raised [1] and this includes attitudes about exposing children to death and dying [6,7]. Overall there has been a marked shift in Western societies from the stance that death is a 'natural part of life' to an attitude of protecting children from the realities of death [6,7]. This attitude was documented by Miller *et al.* [7] in their interviews with Mid-Western American parents and teachers of 3- to 6-year-old children. These adults expressed the views that their children were cognitively and emotionally too immature to comprehend and cope with death, and thus should be actively shielded from its realities.

For researchers investigating children's death concepts, the protectionist trend is highly pertinent. It is increasingly difficult to carry out research because ethical review boards, education departments, individual teachers and parents often reject researchers' requests to investigate children's understanding of death. Yet it is essential to understand where and how modern children learn about death and dying both from a basic research perspective and as a basis for educational and clinical intervention. Here we examine three main sources of information about death and dying that children access: direct exposure to death, parental

communication about death and depictions of death and dying in the media. We conclude with suggestions for further research and recommendations for how best to teach modern children about death and dying.

2. Assessing children's understanding of death

Death is a complex concept to grasp as it has interweaving biological, socio-cultural, spiritual and emotional elements. To assess children's understanding of death, researchers typically adopt a cognitive perspective focusing on children's recognition of death as a biological event [8–12]. In this tradition, a mature death concept is measured and defined in terms of several sub-concepts. While the terminology may vary from study to study, the most commonly assessed sub-concepts are:

- (1) Irreversibility/permanence: the understanding that death is a permanent state from which there is no return to life;
- (2) Inevitability/universality: the understanding that all living things must die eventually;
- (3) Applicability: the understanding that only living things can die;
- (4) Cessation: the understanding that all bodily processes cease to function upon death; and
- (5) Causation: the understanding that death is ultimately caused by a breakdown of bodily functions [11].

Early researchers sometimes classified afterlife reasoning (e.g. asserting that 'the dead can think and feel') as evidence of immature irreversibility or cessation sub-concepts. However, in the last decade, research on the development of spiritual and/or religious beliefs about the afterlife (e.g. [13]) has confirmed that spiritual conceptions of death are developmentally distinct from biological [13–16] ones. Children's biological concepts of death are typically mastered first, and then spiritual elements are layered on top, leading to an adult pattern of sophisticated understanding of the biological reality of death coexisting with belief in an afterlife for the mind or soul [13–16]. This may explain why individual difference studies typically have found minimal effects of specific religious beliefs or levels of religiosity on children's biological understanding of death [17–19].

This review will focus on how children acquire a biological understanding of death. Research in this tradition indicates that the sub-concepts are acquired in a relatively consistent developmental pattern that follows the numbered list above. Irreversibility is almost always understood first, as early as age 3, and causation is acquired last, usually by age 8. This general pattern is evident even across diverse cultural groups [18,19]. Within this broadly normative pattern of acquisition, ecological and individual factors influence the order of acquisition for inevitability, applicability and cessation, as well as the developmental timetable for understanding death as a whole [8,9,11,12,20]. Hesitancy around investigating children's understanding of death means that experimental or training studies are almost non-existent. Therefore, most of what we know about how children learn about death comes from individual differences studies correlating subject or environmental variables with children's mastery of death sub-concepts. The most common variable included in such investigations is children's direct experience of death.

3. Direct experience of death

Intuitively, the maturity of children's death concepts should be associated with their first-hand experience. However, the data are inconsistent on this. Whereas many studies report that experience with death increases children's death understanding (see Speece & Brent [21] for a review), some report no association [10,22] or even a negative association [8]. One reason for the lack of consensus could be varying definitions of what 'experience' constitutes [23]. Experience of death is measured via child self-report, parent or teacher report, and can include one or more of: (a) death of an immediate family member or close friend, (b) death of an extended family member, acquaintance or family friend, or (c) death of a pet [8,9,24,25]. Additional variables such as closeness of the relationship, extent of physical exposure to the corpse, involvement in funerary rituals etc. are almost never included yet individual differences in these specific experiences are likely to be important to children's understanding. Another reason for the mixed findings may be that the association is age-dependent: it appears that direct experience predicts children's death concepts for children up to the age of 6 years [26], but not for older children.

Alternatively, the association between direct experience of death and children's death concepts may be mediated by parental communication. Parents report that an experience of death is one of the most significant factors influencing their decision to talk to their children about death [24,27]. As we discuss below, parental input appears to be a significant predictor of children's understanding.

Although exposure to death and/or corpses is arguably the most powerful source of learning about death [28], there may be other experiences that influence children's understanding of death indirectly. For example, children's concepts of death are developmentally intertwined with their concepts of life and the life cycle [20,29], such that learning about one automatically promotes development of the other [12]. Numerous studies indicate that contact with the natural world is positively associated with development of various biological concepts, many of which are conceptually related to death and dying (for a complete review, see Longbottom & Slaughter [30]). Thus it stands to reason that experience with cycles of nature and living animals also plays a role in children's understanding of death, although so far no research has been conducted to test this assumption.

4. Parental communication about death and dying

What children know and learn is grounded in what their parents teach them. This includes children's developing understanding of biology and the natural world [31], with numerous studies demonstrating the influence of parental communication on concepts such as natural life cycle changes and metamorphoses [32], genetic inheritance [33] and human–animal categorization [34,35].

Clinical psychologists and bereavement experts emphasize the importance of talking to children about death from an early age in an honest and informative way, and to portray death as a natural part of the life cycle (e.g. [36–38]). These same sources express concern that many parents do not discuss death in depth with their children until the issue is forced by the

death of a close relative, friend or pet [8,10,34,35]. A survey of 270 American parents of 4–6-year-old children revealed that parents were least comfortable talking with their children about death, when compared with talking about other biological topics including reproduction, life processes, ageing and illness [39]. Although it should be noted that these parents' average response for discussing death fell between 'comfortable' and 'somewhat comfortable'. Another issue is that parents' communications about death can be misleading; the use of euphemisms ('she's passed on' or 'we lost her') can actually be detrimental to young children's understanding, because these forms of expression avoid the biological realities of death and may even imply that the dead can return.

Despite widespread consensus that parental communication is an important factor in children's development of a mature death concept, few studies to date have directly examined the links. One exception is Matalon [26], who examined communication about death in 68 middle- to upper-middle class parents from New York City with their 6- to 9-year-old children. Based on the recommendations of death education specialists, she devised a questionnaire to assess parents' tendency to engage in 'effective' communication about death. Matalon's definition of effective communication included: the 'parents' willingness, availability and comfort' when answering their children's questions about death and dying, their 'ability to share the unpleasant feelings' and uncertainties about death and their 'awareness of the need to prepare the child for the inevitable reality by using opportunities in nature.' Matalon [26] found that parents' self-reported frequency of this type of communication was significantly correlated with their children's sophisticated understanding of death. The study also revealed a significant negative association between parents' own death anxiety and their tendency to communicate effectively about death, suggesting that parents who were more death-anxious were more avoidant or more likely to resort to euphemisms [26]. It should be noted, however, that parents' questionnaire responses about how they talk to their children about death may not accurately represent what they say when the topic comes up. Hunter & Smith [9] found no significant correlation between children's death concepts and their parents' communication about death, when the latter was assessed by having parents write direct responses to a 5-year-old actor's audio-taped questions about death. This methodological difference could account for the contrasting findings, or, as the authors acknowledged, it may be that Hunter & Smith's [9] null findings could be attributed to their relatively small sample ($N=37$) and restricted range of scores. Ultimately, the role of parental input about death should be explored with methodologies that capture what parents actually say to their children.

Explorations of parents' communication about death and dying highlight two factors that influence death concept development in Western populations. These are: (1) the age at which children are believed to be capable of understanding death, and therefore should be taught, and (2) the type of information parents provide their children. Given that what parents discuss with their children is influenced by the age of the child, this factor will be discussed first.

Early researchers examining the development of death concepts argued that children were incapable of understanding or even thinking about death before the age of 7, and that a mature death concept was not fully developed until 10 years of age [25,40]. These estimates were informed by Piagetian

cognitive developmental theory, which assumed that children could not think about abstract concepts until middle childhood. As noted above, the modern approach assesses children's understanding of death as a biological, as opposed to abstract, concept. This shift has significantly revised the developmental timeline, with modern research indicating that most children acquire a complete death concept between 5 and 7 years of age, and many are capable of understanding some sub-concepts of death as young as age 3 [10–12,35]. Despite this updated approach and research findings, much of the popular press, as well as some researchers, continue to cite outdated research and adhere to Piaget's initial developmental ages. This may account for the variation in parents' observed beliefs about their children's capacity to understand death.

Research with Western educated parents indicates that the majority tend to fall into two groups with respect to their beliefs about children's ability and readiness to learn about and understand death. One group of parents aligns with recent research, citing ages of around 5 and 6 years and younger [7,20,25,41,42]. Others report that children are not cognitively or developmentally capable of thinking about death before 7 years of age, and do not fully comprehend before 10 years of age at least [41–43]. For example, Hendricks *et al.* [42] explored how American parents discussed sensitive topics with their children, and when they believed children were able to understand such topics. They found that, of a sample of 39 parents recruited online, 43% believed children were unable to understand death prior to 7 years of age, and 10% of those reported that a complete understanding of death was acquired after age 12. In the only study of its kind to date, Gaab *et al.* [44] compared New Zealander parents' perceptions of their children's understanding of death to the children's actual comprehension levels. After assessing the death concepts of 141 5- to 7-year-old children and surveying their parents, Gaab *et al.* [44] found that parents underestimated their children's understanding of all the sub-concepts of death to some degree, with parents' estimations of their children's understanding of death causality being the most conservative. Together, these studies suggest that parents may be unaware of the extent of their children's understanding of death. Beliefs about their children's conceptual underdevelopment, combined with hesitancy about the emotional implications of talking about death, may explain why many parents avoid the topic until circumstances demand it [10,24].

The content of parents' explanations is also revealing. These can be broadly divided into two categories: scientific facts and explanations, and religious, spiritual or emotional reassurance and comfort. Reassurance responses are explanations aimed at providing solace to the child, and can include religious, emotional, biological or spiritual information (e.g. continued existence after life, I won't die until I'm much older, or it's alright to feel sad [24,45]). Facts and explanations generally relate to the biological processes involved in death, although they can also relate to rites and rituals following death [24,45].

Providing children with the biological facts is obviously important for children's developing concepts of death. Gutiérrez *et al.* [45] explored the content of 60 American parents' self-reported conversations with their 3- to 6-year-old children as part of a wider study. In response to their children's questions about death, the majority of parents (79.2%) reported that they had incorporated facts and explanations relating to the biological nature of death. However, other survey studies suggest that not all parents provide

these sorts of explanations. For example, Renaud *et al.* [27] surveyed Canadian parents of 2- to 5-year-old children about their conversations about death and what these conversations included. Seventy-five percent of parents reported that they had spoken at least once to their child about death. Of these, 36% reported that they had provided their child with a 'known' cause of death, and fewer than 20% reported that they explained the irreversibility of death. While many parents claim that their explanations include causes of death (when known) [24,45], this is the one piece of information children are most likely to ask about, or wish they were provided with in retrospect [46,47]. Coincidentally, causality of death is also the sub-concept that is mastered latest in development. This may mean that parents' causal explanations are not sufficiently informative, or may be pitched at the wrong level for children to absorb, or may be confused by parents' emotional reassurances.

It should be recognized that the true proportion of parents who do talk to their children about death may be overestimated in the research literature. It seems likely that parents who are more open to the idea of speaking about death with their children are also more likely to agree to participate in studies. When interviewing high school students, Stillion and Wass (1982, described in [47, p. 67]) found that 40% of American teenagers reported that death was never or rarely discussed at home when they were younger, while a further 26% reported that it had only been discussed when 'absolutely necessary'.

How parents communicate with their children about death and dying not only influences their children's understanding of death, but also how they in turn communicate about it throughout their lifetime. There is increasing evidence that how a parent communicates about death and dying with their child, particularly when addressing a personal experience, influences how death is subsequently discussed or approached by the child [46,47] and this influence extends into adulthood [4,7]. For example, Irizarry [46] found that Australian 8- to 12-year olds explained their grandparents' deaths using the explanations provided to them by their parents, even when they reported that they did not agree with, or understand, them. McGovern & Barry [4] found that Irish parents and teachers reported that their personal experience of death and bereavement was the most salient influence on their communications with children about death and dying. These findings suggest a perpetual transmission cycle of attitudes and conversations about death across generations.

The literature has identified several ways in which children construct an understanding of death in the absence of direct teaching from parents and other carers. One way in which children learn about death is by listening in on adults' conversations [28]. As Kurowska-Susdorf [48, p. 141] puts it, 'by overhearing adult conversations, [children] construct their own internal understanding using snippets of information'. A second way in which children formulate an understanding, particularly when insufficient information is provided, is by drawing on their own existing understanding of the world, or their imagination, to 'fill in the gaps,' or simply by making up their own stories to explain what happens (47, 5). For example, Irizarry [46, p. 46] observed a 10-year-old girl who pieced together overheard snippets and concluded that:

'The sleeping pills she [Grandma] had been given may not have been the correct ones because normal ones don't make someone die. My gran was talking about it. My grandma had a cold and had gone to the hospital. She didn't want to go to sleep and

was given sleeping pills and then she died. My father said it was 'old age'.

Similarly, Miller *et al.* [7] report instances of children integrating what they know about religion or biology to make sense of death. One example was a child who:

'asked her therapist if she thought her deceased mother would 'grow back when it gets back to summer time? ... she might come back as a flower'. This child had witnessed her mother's coffin being lowered into the ground. Using her knowledge that seeds that are planted in the ground emerge as plants, she reasoned analogically that her mother would grow back. ... This child seemed to draw on her existing understanding of biology to create a unique and comforting idea about her dead mother.' [7, p. 27].

Finally, children may assimilate information about death and dying from broader contexts, for example, by learning that important historical figures are dead. The following section considers one specific context, namely, the portrayal of death in the media.

5. Media portrayals of death and dying

In times past, one function of literature, particularly fairy tales and oral stories, was to help children to understand and develop a sense of meaning about the world they lived in [49]. While this role continues today, researchers acknowledge that for modern children, conveyors of these messages are more likely to be movies and television shows [6]. It is estimated that children under 8 years of age spend an average of 3 h per day consuming media, with the majority of that time dedicated to film and television [50,51]. Given its prevalence in children's lives, media is now recognized as a legitimate cultural purveyor of specific roles, values and ideals, equivalent in influence to traditional sources of learning such as schools and the family environment [52,53].

Sedney [6, p. 316] suggests that the media is an 'indirect [form of] death education' which can be just as powerful as directed forms of learning. There is evidence that exposure to media portrayals of real-life traumas (such as terrorist attacks) can produce symptoms of post-traumatic stress disorder in children [54,55]. However, as yet there is surprisingly little research addressing how exposure to death in the media relates to children's death concepts.

Among adults, media portrayals of death have been found to influence attitudes towards, and concepts about, death (e.g. [56,57]). In one of the few research studies to address the role of media exposure in children's learning about death, Gutiérrez *et al.* [45] asked American parents of 3- to 6-year olds about what prompted their children's questions about death and dying. Sixty-seven per cent of the parents reported that their children had asked questions about a death portrayed in the media, most commonly in books and films. Similarly, Renaud *et al.* [27] found that a majority of parents they surveyed reported that their children were first exposed to death in the media. These parents also reported that their earliest conversations with children about death were most commonly about a media portrayal, followed by death of a pet and death of grandparents [27]. These findings suggest that media portrayals of death may be as important as direct experience in exposing children to death and dying, and stimulating parental communication on the topic.

Although not characteristic of all mainstream media representations of death, many films and books for children contain confusing, unrealistic and potentially harmful

information about death and bereavement [6,49,52,58]. Sedney [6] argues that children may internalize the unrealistic messages about death being provided by popular media, and these inaccurate ideas may impact on their developing understanding of death and their attitudes towards it. Distorted portrayals of the permanence of death and protagonists' grief responses following a death are most common. For example, Tenzek & Nickels [52] examined the prevalence and characteristics of death portrayals in 57 Disney and Pixar films. They found that at least one death occurred in 84.2% of the movies. Of those deaths, 31.6% were portrayed as reversible (either physically or by characters returning as spirits). They also observed that, when characters reacted to these deaths, 63.2% of those reactions were portrayed as either positive or lacking in emotion. Tenzek & Nickels [52] point out that these unrealistic portrayals can be confusing to young children, but propose that parents and educators may use them to frame conversations with children about the realities of death.

Alongside concerns about unrealistic and inaccurate depictions of death and grief in the mainstream media, there is also recognition that carefully crafted media portrayals can have a positive influence on children's understanding of death [6,52,58,59]. For example, there is a small children's literature on death education, aimed at providing facts about death and suggesting ways to cope and normalize grief [59]. Clinicians and educators recognize the value of these books both in promoting children's understanding of the realities of death and in stimulating communication between children and their parents [59]. In the USA, a now-famous episode of the children's television show *Mister Rogers' neighbourhood* focused on the death of a goldfish [60,61]. This episode 'dealt with death in a low-anxiety situation' [60, p. 183] and was explicit in providing factual information about the death sub-concepts of irreversibility, universality and cessation. The producers received numerous letters from parents and children expressing thanks for the programme and providing examples of how the programme helped them deal with the realities of death [60]. The programme was repeated several times over the next few years. More recently, an episode of the *Sesame Street* television show, entitled 'Farewell Mr Hooper' centred around the death of a popular (human) character in the show [62]. The episode portrays frank and factual discussions about death and grief. Shortly after the 2012 Sandy Hook massacre in the USA, the episode went viral as parents sought a way to help explain death and dying to their children [63]. Despite being released decades ago, the episodes of Mr. Rogers and *Sesame Street* are still accessed today, and demonstrate that media can provide a positive resource for children's developing death concepts.

However, it must be acknowledged that what topics are addressed, and how they are portrayed in the media, are governed by social norms and beliefs about what society deems 'appropriate' for children. This has been evident in public reactions to two noteworthy portrayals of death in media for children. The first is E. B. White's classic storybook *Charlotte's web* [64], which was criticized for its ending in which the main character dies [59]. White's publisher initially told White to modify the ending so that Charlotte survived, but White refused [59]. After its release, the book was controversial with reviewers claiming that the death was 'not an appropriate subject for children'. Despite this, *Charlotte's web* remains a best-seller for young children [7] and has since been remade for film. More recently, Disney was criticized for *The lion king* movie's

depiction of lead character Mufasa's death. Critics argued that the film was too violent and scary for young children, with the death deemed to be inappropriate [65]. Again despite the protestations, *The lion king* remains one of the highest grossing and popular Disney films of all time. It should be noted that the initial critical reviews of *The lion king* eventually gave way to praise for its realistic and honest depiction of grief and for its portrayal of death as part of the 'cycle of life' [6,66].

These examples suggest that there is an appetite in society for realistic media portrayals of death and dying, and highlight the potential for media to play an important role in children's developing concepts of death. This is a ripe area for further research. For instance, there is as yet no research examining how death portrayals in video games relate to children's developing death concepts, which is surprising given the widespread recognition that many video games portray death as impermanent.

6. Conclusion and recommendations

Modern children have limited access to realistic information about death and dying. Alongside socio-cultural trends that have removed death from everyday life, many adults endorse attitudes of shielding children from the reality of death. Furthermore, it appears that parents tend to underestimate what their children know about death, and often discuss the topic using euphemisms that actually contradict the biological facts. While media exposure is an increasing influence on children's learning, there is no research to date investigating how media portrayals influence children's developing death concepts.

Drawing together the limited evidence reviewed above, and the advice of bereavement experts and clinicians, the following tentative recommendations about how to teach modern children about death and dying can be made:

Parents, educators and other influential adults should ensure that young children have exposure to nature and animals, as these sorts of experiences promote children's understanding of biological concepts [30].

Death education should be frank and honest, but it does not have to be head-on. Research shows that understanding life and understanding death are intertwined; so providing children with biological information about the life cycle and how the body works may have a positive influence on their understanding of death [12,38].

Adults should be aware of the potential to confuse children when their communication contains a mix of factual information and euphemisms. Furthermore, parents should bear in mind that their communications about death affect both their children's emerging understanding and how their children will approach the topic in their turn.

Media portrayals that address death frankly (e.g. *Mister Rogers*, *Lion king*) may be valuable resources for teaching children the realities of death. At the same time, parents should be on the lookout to counteract beliefs and attitudes that might arise from children's exposure to inaccurate media portrayals of death.

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