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7   Children's emerging understanding of death

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47   Abstract

48   Children's understanding of death has been a topic of interest to researchers investigating the

49   development of children's thinking and clinicians focusing on children's coping with the death

50   of a loved one. Traditionally, researchers in cognitive development have mainly focused on

51   death from a biological perspective. Current research suggests that exploring religious and

52   spiritual conceptualizations might enrich our understanding of how children come to think about

53   death. In particular, we review different methodological approaches that suggest that children

54   form their understanding of death by engaging in conversations and question asking with family

55   members, consuming cultural products, and actively participating in cultural rituals. We also

56   provide some examples on how children combine different belief systems to form their

57   understanding of death. Finally, we discuss recent research on how socialization with regards to

58   death might be related to coping and bereavement after the death of a loved one.

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60   *Keywords:* Understanding of death, explanatory co-existence, culture

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63   Children's emerging understanding of death

64   Exploring children's death understanding has a long tradition in developmental

65   psychology (Piaget, 1929). Traditionally, it was believed that children were incapable of

66   understanding the meaning of death until around 10 years of age (Carey, 1985; Piaget, 1929).

67   However, changes in how death is conceptualized and related changes in methodology have led

68   researchers to conclude that children have an earlier emerging understanding of death (Gutiérrez,

69   Menendez, Jiang, Hernandez, Miller, & Rosengren, 2019; Rosengren, Miller, Gutiérrez, Chow,

70   Schein, & Anderson, 2014; Speece & Brent, 1984). In this paper, we review research on

71   children's death understanding and examine how theoretical and methodological changes have

72   led to a more nuanced view of children's thinking about death.

73   **Conceptualizing death**

74   Traditionally, researchers considered death to be a unitary concept, poorly understood by

75   children until the ages of 9 or 10 (Piaget, 1929). Carey (1985) argued that children only come to

76   understand death when they know that it was caused by the breakdown of the bodily systems

77   necessary to maintain life. More recently, in an effort to define death as a multi-faceted concept,

78   Speece and Brent (1992) proposed four key sub-components of death: universality (all living

79   things die), finality (death is final and irreversible), non-functionality (death leads to the

80   cessation of biological and psychological processes), and causality (death can be caused by

81   different factors). By conceptualizing death in terms of these different sub-components,

82   researchers have revealed that children acquire an understanding of death at an earlier age

83   (Speece & Brent, 1984; 1992). Prior to age 5, children begin to develop an understanding of

84   universality, followed by an understanding of finality (Rosengren et al., 2014; Slaughter, 2005).

85   By 5 years of age, most children understand that death leads to the cessation of bodily processes,

86   and by age 6, children have the more sophisticated understanding that death can be caused by

87   many factors, not just old age (Panagiotaki, Hopkins, Nobes, Ward, & Griffiths, 2018).

88   Although deconstructing death into these sub-components has been fruitful, it also has

89   one glaring issue: this approach has treated death as a purely biological concept. This can be

90   problematic because for many individuals and cultures, death is also understood through a

91   religious or spiritual lens (Astuti, 2000; Gutiérrez et al., 2019; Watson-Jones, Busch, Harris, &

92   Legare, 2017). In order to examine these non-biological concepts of death, some researchers

93   have proposed a fifth sub-component of death, non-corporeal continuity, which focuses on

94   beliefs in the afterlife (Bering & Bjorklund, 2004; Bering, Blasi, & Bjorklund, 2005; Rosengren

95   et al., 2014). Other researchers have acknowledged that cultures vary greatly with respect to the

96   rituals and practices surrounding death (Kagawa-Singer, 1998; Lobar, Youngblut & Brooten,

97   2006) and have studied how individuals growing up in different cultures come to understand

98   death (Astuti, 2000; Busch, Watson-Jones, & Legare, 2017; Rosengren et al., 2014). An

99   important finding resulting from these efforts is the idea that biological and religious concepts of

100   death often co-exist in the minds of both children and adults (Busch et al., 2017; Gutiérrez et al.,

101   2019; Legare, Evans, Rosengren, & Harris, 2012).

102   **How do children acquire their understanding of death?**

103   A key question is not only when do children understand death, but how do they come to

104   this understanding? Traditionally, researchers believed that children understood death from a

105   uniquely biological perspective (Piaget, 1929). Research from this perspective sought to only

106   characterize children's biological understanding of death. In contrast, we believe that children

107   form their understanding of death by combining their biological reasoning with information from

108   their cultural environment - including information from religious and spiritual contexts. Using

109   qualitative and quantitative methods allows researchers to examine how children make sense of

110   the different information presented to them.

111   *Biological reasoning.* The traditional view has been that children's understanding of

112   death arises from a general understanding of biology. In one study from this perspective,

113   Slaughter and Lyons (2003) provided children a lesson on the body and its systems, and then

114   examined their understanding of death. They found that children who learned about the body had

115   a better understanding of the causes of death. This and other research suggests that children's

116   understanding of death is rooted in their understanding of life, the body, and other biological

117   concepts (Rosengren et al., 2014; Slaughter & Lyons, 2003).

118   While biological reasoning is clearly important for an understanding of death, we argue

119   that children's understanding of death emerges as the result of an interaction between their

120   biological reasoning, their experiences with death-related rituals, and parental socialization.

121   Thus, children's understanding of death is the product of children making sense of a variety of

122   biological and spiritual information about death. Examples of this can be seen in cross-cultural

123   work that shows that children (and adults) often incorporate religious and spiritual beliefs into

124   their understanding of death (Astuti & Harris, 2008; Gutiérrez et al., 2019; Watson-Jones et al.,

125   2017). In order to examine how children come to understand death, it is important to take a

126   socio-cultural approach that examines how children make sense of information that can appear to

127   be in conflict (e.g., biological views of death and religious ones vary greatly on issues of

128   finality). We argue that biological and religious information about death, which are often seen as

129   being in conflict with each other, is often presented together in children's media and parental

130   conversations. This suggests that these different views are not presented as contradictory to

131   children. Additionally, children are not simply absorbing this information, but rather asking

132   questions and participating in cultural rituals which furthers their conceptual development

133   (Rogoff, 1998).

134   The idea that children actively construct knowledge from available information implies

135   that culture plays a central role in children's emerging understanding of death. There has been a

136   breadth of research that shows cultural differences in how children conceptualize death (Astuti &

137   Harris, 2008; Bering & Bjorklund, 2004; Gutiérrez et al., 2019; Lane, Zhu, Evans, & Wellman,

138   2016; Panagiotaki, Nobes, Ashraf, & Aubby, 2015; Watson-Jones et al., 2017). Knowing that

139   there are cultural variations in children's understanding of death raises the arguably more

140   interesting question of *how* culture influences children's conceptualizations of death. Below we

141   draw from research on children's understanding of death and the broader cognitive

142   developmental field to argue for three potential ways cultures influence children's understanding

143   of death. We contend that differences in cultural norms related to how openly parents discuss

144   death (Gutiérrez et al., 2019), the presence of death-related content in children's media (Lee,

145   Kim, Choi, & Koo, 2014), and the extent to which children actively participate in cultural rituals

146   surrounding death all impact children's understanding of death. Although there is evidence that

147   culture also influences how people think about the biological world (ojalehto, Medin, Horton,

148   Garcia, & Kays, 2015), we do not discuss this at length given that we are not aware of any work

149   that connects different types of conceptualizations of biology specifically to children's reasoning

150   about death.

151   *Parental conversations and question asking.* One source of information about death that

152   has received considerable attention is parent-child conversations. Although some aspects of

153   death may be clearly observable (e.g., a dead animal cannot jump), others are less readily

154   observable (e.g., whether a spirit continues to exist). Harris and Koenig (2006) suggested that

155   children rely on testimony from adults to build their understanding of phenomena that are

156   generally unobservable. Testimony from adults have also been proposed to influence children's

157   endorsement of death and afterlife beliefs (Lane & Harris, 2014).

158   One issue with children potentially learning about death from adult testimony is that

159   western societies have been viewed as attempting to shield children from death and death-related

160   experiences (Ariès, 1974; Rosengren et al., 2014). At first glance, this "modern interdiction of

161   death" (Ariès, 1974) might lead to the assumption that families rarely engage in conversations

162   about death. However, the fact that parents in western countries may not volunteer information

163   about death does not mean that children do not request this information. Chouinard (2007)

164   proposed that children's question asking might be a central mechanism in children's cognitive

165   development. As children acquire more domain knowledge, their ability to ask questions

166   improves and they ask more focused questions to fill specific knowledge gaps (Ronfard,

167   Zambrana, Hermansen, & Kelemen, 2018). Given that recent reports have found that many

168   parents indicate that their children begin to ask questions about death as young as three years of

169   age (Renaud, Engarhos, Schleifer, & Talwar, 2015), and that these questions were often sparked

170   by a recent death in the family (Bridgewater, Menendez & Rosengren, under review), question

171   asking might also be a key mechanism that children use to learn about death.

172   Researchers examining children's understanding of death have examined the content of

173   children's questions and how parents respond (Gutiérrez et al., 2019; Rosengren et al., 2014).

174   The results of these studies are surprisingly consistent, suggesting that young children

175   predominantly ask questions about the sub-components of death, typically in very general terms

176   ("What happens to people when they die?"), but some questions are more specific ("How old are

177   you when you die?"). Many of these questions focus on the causes of death. Given that causality

178   is the last sub-component that children come to understand, they may be asking questions about

179   the sub-components they least understand in order to enrich their knowledge. This work,

180   although quite informative, has relied exclusively on parents' retrospective reports, making it

181   difficult to relate children's questions to their current death understanding.

182   An interesting finding emerging from research on children's questions about death, is that

183   there appears to be a mismatch between the content of children's questions and parents'

184   responses. Children predominantly ask questions about the biological sub-components of death,

185   but parents often provide religious information in response (Bridgewater et al., under review;

186   Gutiérrez et al., 2019). Children also rarely ask specific questions involving religious aspects of

187   death, yet parents' responses often include religious or spiritual elements (e.g., references to

188   Heaven). One potential reason for this mismatch might be that children's questions can be

189   interpreted quite broadly, allowing parents to provide responses from whichever belief systems

190   they find most comforting. For example, if a child asks, "What happens to people when they

191   die?" a parent could provide a biological response "your body stops working" or a religious

192   response "you go to Heaven." Parents might assume that children might find biological

193   responses disturbing as they suggest the end of a relationship with the deceased (rather than a

194   continued spiritual relationship as many religious explanations suggest), and they might also

195   underestimate their children's ability to understand biological based information (Bluebond-

196   Langner, 1978; Gaab, Owens, & MacLeod, 2013). Some parents combine biological and

197   spiritual information either in the same answers or across multiple answers (Bridgewater et al,

198   under review). The fact that parents at least sometimes combine biological and spiritual

199   information suggests that children are exposed to multiple belief systems about death, and that at

200   least some children are likely acquiring a view of death that incorporates multiple belief systems

201   at once.

202   *Consumption of media.* Children might also learn about death by observing how death is

203   portrayed in media. A number of researchers have examined how death is portrayed in children's

204   books (Lee et al., 2014) and animated films (Cox, Garrett, & Graham, 2005; Tenzek & Nickels,

205   2017). In order to examine how frequently death is portrayed in children's books, Rosengren et

206   al. (2014) examined parents' reports of their children's favorite books and Caldecott Medal

207   winners (an award for distinguished picture books given by the Association for Library Service

208   to Children). They found that only 3% of these books depicted death. This stands in stark

209   contrast to the top animated children's films, 75% of which contained a death (Bridgewater et al.,

210   under review). However, many of the deaths portrayed in animated films were not depicted

211   explicitly (e.g., the death occurred off-screen). This indicates that although children's books

212   rarely portray death, children's films often do. One potential reason for the difference might be

213   that depicting death implicitly is easier to portray in films than it is in books. This seems to be in

214   line with findings that *books with images* portray death more often than *books without images*,

215   even though books without images are generally meant to be read by older children (Poling &

216   Hupp, 2008).

217   Researchers have also examined children's books designed specifically for bereaved

218   children. Although the majority of these books contain information about the biological sub-

219   components of death, many included religious and spiritual perspectives (Rosengren et al.,

220   2014). Books, as cultural artifacts, depict a view of death that matches that of the culture of its

221   writers. For example, researchers found that books about death from Western European countries

222   depicted spiritual aspects of death more often than books from East Asian countries (Lee et al.,

223   2014). This is in line with studies that show that children and adults in Western countries are

224   more likely to think about spiritual aspects of death than children and adults in East Asian

225   countries (Lane et al., 2016). Therefore, it is likely that children receive culturally consistent

226   information about death from their parents and the media, possibly containing both biological

227   and non-biological perspectives on death.

228   *Participation in cultural rituals.* Recent studies have focused on the social functions of

229   rituals, paying special attention to the role of rituals in defining groups and facilitating group

230   cohesion (Watson-Jones & Legare, 2016). Here, we focus on children's learning through

231   observing and participating in cultural rituals (Rogoff, Mejía-Arauz, & Correa-Chávez, 2015).

232   Ethnographic work by Gutiérrez, Rosengren, and Miller (2015) showed that children in Puebla,

233   Mexico often participate in and help prepare for the *día de los muertos* (Day of the dead)

234   celebration. During this celebration, families create *ofrendas* (altars) for dead relatives and place

235   food for their visit. The majority of the children that participate in this celebration indicate that

236   their dead relatives came to visit and that the dead consumed the food placed on the *ofrendas*,

237   even though these same children understand that death is irreversible and that physical functions

238   (like eating) stop after death (Gutiérrez et al., 2019). Other studies on children's death

239   understanding have used ethnographic field work to enrich quantitative approaches and improve

240   our understanding of how children's experiences with death rituals help shape their

241   understanding of death (Astuti, 2000).

242   One conclusion to be drawn from past research is that children form their emerging death

243   understanding by combining aspects of biological reasoning with concepts and symbols drawn

244   from religious and broader cultural contexts. There is evidence that children first come to a

245   biological understanding of death prior to integrating spiritual or religious dimensions, using

246   their existing biological concepts of death to constrain their religious understanding (Astuti &

247   Harris, 2008; Giménez & Harris, 2005; Lane & Harris, 2014). Ultimately, people often combine

248   these different models, resulting in the co-existence of different explanatory beliefs (Busch et al.,

249   2017; Legare et al., 2012). These co-existence models can be target-dependent (where the belief

250   system used depends on the context) or blended (where two or more belief systems are combined

251   in one explanation). Examples of target-dependent models can be seen in research that looks at

252   how children's responses to questions about death are different depending on whether they are

253   presented with a religious or a secular context (Astuti & Harris, 2008; Giménez & Harris, 2005;

254   Lane et al., 2016). One example of the blended model is presented by Rosengren et al. (2014, pg.

255   27) in which a child stated that her deceased mother was in heaven (a spiritual understanding),

256   but that her mother was tired because she had to stand on the clouds for very long (imparting

257   biological traits to spirits). These blended models can be difficult to identify, but some

258   researchers have successfully used a combination of qualitative and quantitative approaches to

259   examine how children blend different belief systems (Gutiérrez et al., 2019; Rosengren et al.,

260   2014). However, future work should explore how and when children combine different beliefs.

261   **Ramifications of children's understanding of death**

262   Recent research suggests that different understandings of death influence how people

263   respond to death. Research focusing on non-bereaving children has shown that a greater

264   biological understanding of death is related to lower death anxiety (Slaughter & Griffiths, 2007)

265   and to beliefs that people should feel sad after the death of a loved one (Gutiérrez et al., 2019).

266   Clinical research focusing on bereaving children suggests that fear and anxiety may make it

267   difficult for children to reason about death (Ellis, Dowrick, & Lloyd-Williams, 2013).

268   Additionally, open communication between parents and children about death has positive

269   consequences for children's coping (Christ, 2000; Field, Tzadikario, Pel, & Ret, 2014). One

270   study examined this issue in a retrospective manner by asking adults to remember how open their

271   parents were when discussing death and how much their parents shielded them from death

272   (Martinčeková et al., 2018). These researchers found that people who recalled their parents being

273   open to talking about death reported better coping after a death in childhood, which in turn was

274   associated with better coping in adulthood. These data suggest that parent-child conversations

275   about death might be important for children's coping and death understanding. Future work

276   should examine this issue more in-depth.

277   **Future directions**

278   There are a number of important directions for future research. First, although there is

279   research examining children's cognitive and affective understanding of death separately, very

280   few studies explore both of these constructs in the same investigation. Future work should

281   examine how children's cognitive and affective understanding relate and how religion influences

282   both constructs. Second, while there is research on the death-related content present in children's

283   media, there is currently little research on whether parents or children engage with this content.

284   Although researchers report that children ask parents questions about death portrayed in movies

285   (Bridgewater et al., under review), we don't know much about if and how parents might use

286   different forms of media as tools to teach children about death. Finally, there is very little

287   research on how losing a loved one influences children's understanding of death. This is a

288   difficult issue to study prospectively, out of concern for the privacy of bereaved families. Past

289   research with bereaving populations has involved clinicians and focused almost exclusively on

290   children's coping skills, not on their understanding of death. Research with non-bereaving

291   children often asked whether the children have experienced the death of a loved one, but few

292   examine whether there are differences in children's understanding of death between children

293   who have and have not lost a loved one (but see Panagiotaki et al., 2018).

294   **Conclusions**

295   Children seem to have a fairly sophisticated understanding of death by the age of six.

296   They appear to actively construct their understanding of death by asking adults questions,

297   consuming cultural products, and participating in cultural rituals. These sources often provide

298   information that maps onto different belief systems, leading children to potentially combine

299   these systems to create a concept of death that is deeply rooted in both their biological reasoning

300   and their cultural symbolic system. Given this dynamic process of knowledge construction, we

301   suggest that it is important to use a variety of methods to gain a comprehensive view of

302   children's understanding of death, and how this understanding may vary by context and culture.

303   To understand children's conceptualizations of death, we need to explore in greater detail

304   children's experiences with the death of a loved one, their affective responses to death, and how

305   religious beliefs may shape their reasoning about death. While preliminary evidence suggests

306   that children's understanding of death might be related to how they cope with the death of a

307   loved one both in childhood and adulthood, future research should examine this relation in more

308   detail.

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