

Autism, language, and the folk psychology of souls

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Abstract: Anecdotal evidence suggests that people with autism, with known impairments in mechanisms supporting a folk psychology of mind or souls, can hold a belief in an afterlife. We focus on the role language plays, not just in acquiring the specific content of beliefs, but more significantly, in the acquisition of the concept of life after death for all people.

The main goal of Bering's article is to sketch a Darwinian model that accounts for the near-universal belief in an immortal soul and an afterlife. He argues that human social cognition has evolved to process information in specific ways that both allow for and engender dualistic thinking about mind and body, as well as related areas of religious or existential thought. It is this underlying cognitive architecture that constitutes the "folk psychology of souls." Bering stresses the role of theory of mind and related cognitive systems in promoting default representations of mental states surviving death.

This is an interesting and important hypothesis that has many ramifications for the study of human cognition and culture. Our commentary focuses on the consequences of this view for predicting how people with specific social-cognitive deficits might conceive of and react to death. We then explore the implications of social-cognitive deficits for Bering's model, to address the question of whether underlying cognitive architecture is both necessary and sufficient for representing life after death.

Can people with autism believe in life after death? Bering's model offers guidelines for who is most likely to entertain beliefs in a soul and afterlife, namely, individuals with an intact theory of mind. Indeed, Bering cites evidence that most people claim that what endures after death is the person's mental states. What about populations with deficits in this domain of human cognition? It is widely accepted that autism (ASD) is, in part, characterized by atypical social-cognitive development and domain-specific impairments in theory of mind (e.g., Baron-Cohen et al. 2000). People with ASD have difficulty representing the mental states of themselves and others even when high-functioning individuals with ASD have above-average IQ scores and relatively good language skills (Baron-Cohen 2000).

Bering's model suggests that people with autism would be much less likely to engage in "existential" thought or to consider mental states surviving death, given that they generally fail to consider a person's mental states even when they are alive. Although we know of no systematic research that has tested this hypothesis, anecdotal evidence suggests a more complex picture. On the one hand, although people with ASD do form emotional attachments (Rutgers et al. 2004), in our experience, it seems that they do not respond with the same degree of distress to the death of a loved one as do non-autistic individuals. This provides support for Bering's view, as he argues that affective responses may trigger the formation of afterlife representations based on existing social-cognitive mechanisms. Because people with ASD have deficits in these underlying mechanisms, they may not react to death with the same kind of existential crisis, and may therefore be less likely to represent life after death. On the other hand, this picture is complicated by the fact that, again based on anecdotal evidence, some people with ASD can hold a *belief* in a soul and afterlife. When asked about what happens to a person after they die, some people with autism claim that they continue to exist in some form; for example, that dead people ascend to heaven.

We hypothesize that a person with autism may acquire the belief in an afterlife via *language*, in the same way as they can learn to pass false belief tasks (Tager-Flusberg & Joseph 2005). Numerous studies have demonstrated that for children with autism, the single best predictor of passing false belief and other theory of mind tasks is linguistic knowledge, especially vocabulary and grammatical knowledge. However, even people who pass theory of mind tasks seem not to engage the same neurocognitive mechanisms when reasoning about beliefs (e.g., Castelli et al. 2002), suggesting that language may provide an alternative way of bootstrapping mental state attribution in people who have impairments to the mechanisms that are generally engaged for processing theory of mind tasks.

Does language contribute to the folk psychology of souls? While Bering acknowledges the role of socio-cultural indoctrination in the formation of *specific* religious concepts, his theory emphasizes the causal role of underlying cognitive mechanisms in giving rise to *generally* dualistic concepts and modes of thought. However, given that people with autism can hold dualistic religious beliefs, might language play a more significant role in the development of the folk psychology of souls? That is, does the structure of our linguistic concepts help shape the way we think about mind, body, and soul? Again, we know of no empirical research addressing this specific claim, but the behavior of people with autism suggests that language may play a *causal* role in the development of the folk psychology of souls. Consistent with this hypothesis, many philosophers have proposed that it is conceptual and linguistic confusion that encourages mind/body separation, rather than any innate predisposition. Specifically, they highlight the various metaphorical ways we talk about the mind and mental activity and argue that it is these disparate conceptual representations that propel dualistic thought (e.g., Lakoff & Johnson 1999; Melser 2004; Papineau 2002; Ryle 1949; Wittgenstein 1953). Language and cognition are intimately tied together, and the experimental evidence cited by Bering cannot distinguish between the cognitive and linguistic factors that could be driving universal dualistic beliefs.

Human social-cognition may have evolved in such a way so as to support belief in a soul and afterlife, but this underlying architecture may be neither sufficient nor necessary for such beliefs. In our view, the prevalence of these beliefs likely indicates a complex and dynamic process consisting of multiple interdependent cognitive, affective, linguistic, and cultural components. As Bering's own research demonstrates, most people probably do not have a stable, rational set of beliefs in the afterlife. It may therefore be premature to privilege specific social-cognitive factors underlying the "folk psychology of souls." There is an important need for future research to disentangle the different elements that motivate these beliefs, and to address the issues raised in both Bering's article and in these commentaries.

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The supernatural guilt trip does not take us far enough

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Abstract: Belief in souls is only one component of supernatural thinking in which individuals infer the presence of invisible mechanisms that explain events as paranormal rather than natural. We believe it is