

confined to research on children. For example, in another study cited (Bering 2002a), adult participants are presented with vignettes and asked questions like “Now that [the person] is dead, does he want to be alive?” This research is mentioned in the context of simulation constraints, and so participant hesitation is taken to imply an incapacity (among adults) to imagine what being dead is like. However, again, the participant’s judgment of the researcher’s own mental state is being ignored. It could simply be that participants hesitate because they are confused by an apparently bizarre interrogation (asking themselves “Is this a trick question?”), or are contemplating how best to be polite in a socially awkward situation (“How do I respond without offending the questioner’s apparent belief in an afterlife?”). Adults may readily imagine death, as might be suggested by research that examines the consequences of being invited to do so (e.g., research into Terror Management Theory; Goldenberg et al. 2000).

However, despite the precarious nature of self-report evidence in studies of controversial, emotionally charged belief systems, Bering’s argument is not necessarily empirically unsupportable. Comparison of the views of children who are and are not presented with afterlife concepts by their environments (e.g., by their parents) might elucidate to what extent children develop such beliefs spontaneously. Objective (e.g., biological) indices of behavior may also be revealing. Studies of phenomena such as the placebo effect and its stimulation by social support (Wall 1999) may corroborate claims that humans possess innate characteristics that reinforce “moral” behavior (which, by providing people with a stake in long-term outcomes of behavior, would indirectly support folk assumptions regarding psychological immortality), while also informing theories about the evolution of moral judgment. Complementary evidence may emerge from research into the genetics of altruism (e.g., Jansen & van Baalen 2006).

In summary, it is clear that many people believe in an afterlife. However, Bering’s case that such a belief is evolutionarily primed (and therefore innate) is persuasive but not conclusive. It does not displace the more parsimonious explanation that childhood credulity underlies the acquisition of afterlife beliefs through cultural exposure.

## Transcendental self-organization

Carl N. Johnson<sup>a</sup> and Melanie Nyhof<sup>b</sup>

<sup>a</sup>Department of Psychology in Education, University of Pittsburgh, Pittsburgh, PA 15260; <sup>b</sup>Department of Psychology, University of Pittsburgh, Pittsburgh, PA 15260.

johnson@pitt.edu    men19@pitt.edu

**Abstract:** Bering makes a good case for turning attention to an organized system that provides the self with transcendental meaning. In focusing on the evolutionary basis of this system, however, he overlooks the self-organizing properties of cognitive systems themselves. We propose that the illusory system Bering describes can be more generally and parsimoniously viewed as an emergent by-product of self-organization, with no need for specialized “illusion by design.”

Bering seeks to direct the cognitive science of religion beyond its recent focus on concept acquisition and agency detection toward considering how supernatural inferences frame the meaning and morality of the self. This shift potentially opens the door for links with the emerging study of spiritual development, which has otherwise been focused on issues of meaning, morality, and identity (see Roehlkepartain et al. 2006). In his present article, however, Bering speaks exclusively to evolutionary scholars, encouraging them to explore the possibility that an illusory cognitive system evolved as the result of selective pressures.

While worthy of exploration, Bering’s evolutionary proposal is limited in two significant ways. First, the “Darwinian

mechanisms” are left completely unspecified. Second, the Darwinian proposal is not weighed against a non-Darwinian alternative.

Bering leaves it for future investigators to explore the mechanisms that generate the illusory existential system. It is not even clear what the mechanisms are supposed to produce. The system as a whole includes three components: ordinary cognitive processes (simulation, teleology, and theory of mind), the specific illusions, and their organization into a cognitive system. Presumably, Bering is not looking to account for the basic cognitive processes. The search, hence, must be for some added illusion-producing and integrative mechanisms that generate a distinctive metaphysical theory of self.

The alternative, more parsimonious possibility is that the cognitive illusory system emerges from ordinary processes through self-organization. In a Kantian sense, transcendental illusions are the inevitable product of the operation of ordinary cognitive processes as they extend beyond normal boundaries of operation. Beside the illusions that Bering describes, there are classic illusions that arise from reflective ideas, wherein the order inherent in concepts is uncritically assumed to exist in the world. In any case, once generated, these transcendental ideas are powerfully relevant and pragmatically regulatory, precisely because they reflect higher-order organization that is intrinsically valuable to the self (see Johnson 2000).

Systems of transcendental belief are thus the result of self-organization, whereby ideas generated by the self come to organize and regulate the self. In this framework, religious ideas are not the sterile by-product of cognitive relevance (attention and memory). Nor are they specifically adaptive illusions by design. Rather, they are emergent by-products that have self-relevance.

Epidemiologically, religious ideas are spread, not simply because of their cognitive relevance, but because of their vital relevance. Religious ideas stick around because they are relevant to the goals, status, and value of the self.

Transcendental illusions are the natural outgrowth of human cognitive organization. The cognitive system primarily functions to orient the organism to what is vitally important, not what is strictly, objectively real. To this end, information is organized in terms of prototypes, ideals, essences, narratives, and the like. These organizational processes commonly give rise to ideas regarding the existence of a higher, deeper order, beyond the perceptible given.

Clearly we need to know a lot more about the origins and adaptive function of transcendental ideas. Bering turns attention to a particularly intriguing system of belief. Whether or not this particular system was selected by design, we need to better understand the wider human tendency to imagine transcendental order that serves to regulate the self.

## Six feet over: Out-of-body experiences and their relevance to the folk psychology of souls

David Kemmerer<sup>a</sup> and Rupa Gupta<sup>b</sup>

<sup>a</sup>Department of Speech, Language, and Hearing Sciences, Purdue University, West Lafayette, IN 47907; <sup>b</sup>Department of Biological Sciences, Purdue University, West Lafayette, IN 47907.

kemmerer@purdue.edu    gupta10@purdue.edu

[http://www.cla.purdue.edu/slhs/Pages/fac\\_staff/faculty/kemmerer.html](http://www.cla.purdue.edu/slhs/Pages/fac_staff/faculty/kemmerer.html)

**Abstract:** During an out-of-body experience (OBE), one sees the world and one’s own body from an extracorporeal visuospatial perspective. OBEs reflect disturbances in brain systems dedicated to multisensory integration and self-processing. However, they have traditionally been interpreted as providing evidence for a soul that can depart the body after death. This mystical view is consistent with Bering’s proposal that psychological immortality is the cognitive default.