of dead agents. The weakest part of Bering's contribution is precisely his evolutionary speculations. It is not much of an argument to say that supernatural illusions *may* have had fitness-enhancing effects, and that if this is so, then they *might* represent a specific cognitive adaptation (see Sterelny 2003). Bering hints at the problem of the evolution of cooperation but does not really explore it (see Axelrod 1990; Nowak & Sigmund 1994; 2005; Nowak et al. 2004; Richerson & Boyd 2005). Saying that the ability to entertain ideas about supernatural agents "might have led" our ancestors to accept the moral norms of their community raises more questions than it solves (see Boyer 2004; MacIntyre 2004; Pyysiäinen 2006). As I see it, Bering's ingenious experimental work is best interpreted within the standard model. Developing evolutionary arguments about morality and cooperation would require a more rigorous methodology.

An unconstrained mind: Explaining belief in the afterlife

Philip Robbins[a] and Anthony I. Jack[b]

[a]*Department of Philosophy, Philosophy-Neuroscience-Psychology Program, Washington University, St. Louis, MO 63130;* [b]*Department of Neurology, School of Medicine, Washington University, St. Louis, MO 63110.*

probbins@wustl.edu **http://artsci.wustl.edu/~probbins/home**
ajack@npg.wustl.edu
http://www.nil.wstl.edu/labs/corbetta/personnel/ajack.html

Abstract: Bering contends that belief in the afterlife is explained by the simulation constraint hypothesis: the claim that we cannot imagine what it is like to be dead. This explanation suffers from some difficulties. First, it implies the existence of a corresponding belief in the "beforelife." Second, a simpler explanation will suffice. Rather than appeal to constraints on our thoughts about death, we suggest that belief in the afterlife can be better explained by the lack of such constraints.

Why do so many people believe in life after death? According to Bering's simulation constraint hypothesis, the common-sense belief in the afterlife originates in part from the difficulty of mentally simulating a scenario in which one does not exist. Such an act of simulation is difficult because it invites one to imagine what it would be like (in the technical sense of "what it is like," from Nagel 1974) not to exist – an impossible feat. Because one cannot imagine what it would be like to be dead by imagining what it would be like not to exist, one imagines instead what it would be like to exist apart from one's body. This leads to the belief in psychological persistence after physical death.

If the simulation constraint hypothesis is correct, then, we believe in life after death because we cannot imagine ceasing to exist after death. But it is no easier to imagine one's nonexistence after death than it is to imagine one's nonexistence before the start of bodily life (say, before conception). What the simulation constraint hypothesis predicts, then, is belief in a stronger form of psychological immortality than the one Bering considers, namely, belief in the afterlife coupled with belief in the "beforelife." The question is: Do these two beliefs have equal currency?

This is an empirical question, and answering it will require careful experimental investigation, using methods similar to those described in the target article. This investigation is ongoing (Bering, personal communication). But there is reason to suspect that the answer to the question is no. There appears to be a far greater prevalence of belief in the persistence of the soul after bodily death relative to belief in the preexistence of the soul before bodily life.

In historical and contemporary Christianity, for example, the dominant views of the soul are creationism and traducianism. According to these views, the soul originates at the moment of conception, either by a creative act of God (as in creationism) or by generation from the souls of one's parents (as in traducianism). Thus, both creationists and traducianists deny that the soul exists prior to conception. Though some Christian sects, such as Mormonism, insist on the preexistence of the soul relative to conception, this is very much a minority view in Christian theology, both past and present. The same is true of Judaism and Islam. By contrast, belief in the continuing existence of the soul after death is shared by most major world religions, including Christianity, Judaism, and Islam. While this discrepancy might be explained in other ways, it suggests that belief in the afterlife and belief in the beforelife are not equally at home in common sense. If that turns out to be true, the simulation constraint hypothesis is in trouble.

Fortunately, we can explain the common-sense belief in life after death just as well without appealing to the idea of constraints on simulation. Instead, we can appeal to the relative absence of such constraints. In the target article, Bering himself gestures towards the explanation we have in mind: "[T]he nature of the body's role in producing the subjective experiences of emotions, desires, and beliefs seems not as amenable to children's scientific theories of dead minds (or, indeed, even to adults' formulation of scientific theories regarding phenomenal consciousness and the brain, e.g., *qualia*)" (sect. 2.1, para. 6).

Here's how the story goes in a bit more detail. Children and adults alike tend to think of the mind in general – and phenomenal consciousness in particular – in terms that are sharply distinct from, and even cognitively opposed to, the terms in which they think of physical-causal mechanisms such as the brain and other parts of the body (Robbins & Jack 2006; see also Bloom 2004). Those links between the mental and physical that we do understand to exist are few and far between, and they apply only to a limited range of mental states (Bering & Bjorklund 2004). Hence, our thoughts about the physical do little to constrain our thoughts about the mental.

In particular, the thought that our body will give out at some point in the future does not lead us to think that our mind will do the same. Indeed, our cognitive architecture may dispose us to reach the opposite conclusion. The very fact that the mental and the physical seem so starkly different may lead us to believe in mind–body dualism. It's a short step from belief in dualism to the belief that at least some psychological states, such as conscious thoughts and feelings (which seem terminally resistant to causal-mechanical explanation; see Robbins & Jack 2006), will persist after death.

Evolution's lost souls

Lloyd E. Sandelands

Department of Psychology and Ross School of Business, University of Michigan, Ann Arbor, MI 48109.

lsandel@umich.edu **http://www.bus.umich.edu/FacultyBios/FacultyBio.asp?id=000119726**

Abstract: The target article speaks loudest about what it cannot see – that man exists in God. Its claim that supernatural beliefs are "evolved errors" rests on unwarranted assumption and mistaken argument. Implications for evolutionary study are considered.

Either man is the child of God, or he is not. If he is divine, he is soulful and immortal, he transcends nature (is supernatural) and transcends psychology. If he is not divine, he is soulless and mortal, he is part of nature and his beliefs about soul and afterlife are errors and illusions of folk psychology.

The target article is clear about the facts. Infants are common-sense dualists who do not see people in the same way they see material objects. Children hold natural beliefs in an afterlife. Children reason better about the omniscient mind of God than about the limited minds of people and animals. Undergraduates

https://doi.org/10.1017/S0140525X06479103 Published online by Cambridge University Press

are spooked into moral behavior by the suggestion of supernatural presence. And, generally, people are "intuitive theists" who find teleology in the natural world and who find intelligent design in their personal lives.

The target article is clear also about the question raised by the facts:

> [I]f God does not exist, then the unique self (i.e., the individual "soul" of any given person) cannot be the product of intelligent design; rather, it is simply the end product of standard machinations of genetic and environmental recombination. [. . .] The task remains for cognitive scientists to determine why the teleological position is so frequently adopted, and prospers so vehemently, over the mechanistic alternative. The human mind cannot seem to easily accommodate itself to a godless, evolutionary canon when it comes to the self's existence. (target article, sect. 3)

And the target article is clear about its reckoning of this question. Human thinking suffers three evolved errors: *Type I errors* in reasoning about the afterlife, *teleo-functional errors* leading to belief in the soul's intelligent design, and *theory of mind errors* leading to belief in supernatural causes. These errors culminate in an illusion that the self is related to a supernatural creator and has a moral obligation to that creator. And these evolved errors and illusions explain why the "teleological position" prospers and thereby why the folk psychology of souls takes the form it does.

Although clear, the target article presumes everything by its question. On the premises that God does *not* exist and the soul is *not* an intelligent design, the article asks how evolution produced appearances to the contrary. These premises are not statements of scientific fact, but are statements of secular faith. Why these premises? What is the evidence and argument for them? And what is the cost in accepting them? More to the point, what if God *does* exist and the soul *is* an intelligent design? How dramatically the question changes – from being about error and illusion to being about Natural Law, from being about how people prosper in spite of themselves to being about how they prosper in the light and love of God. What the target article describes as the naïve misapprehension of the child becomes the wisdom of the child.

From its unjustified premises, the target article comes to a false conclusion. Evolutionary science cannot explain why man thinks what he does. Evolutionary science is about matter, not about meaning. It explains the origin, proliferation, and disappearance of material forms (e.g., physical traits, abilities, dispositions), but not of mental forms (e.g., ideas, beliefs, feelings) (see Atran 2002). The latter are not material survivals, but are immaterial creations. This is plain in the article's own ideas about the "errors" of religious thinking. Are these ideas also evolved? And if so, how are they selected alongside the ideas they rule out? Furthermore, evolutionary science is about natural objects, not about man. It misunderstands man when it traces his every feature, including those that are unique, to his physical being (e.g., if man is the only animal that can think creatively using symbols, it is because he has an enlarged brain with a prominent cerebrum). By confining man to his physical capacities, evolutionary science fails to account for his unique and creative use of these capacities. It leaves to question why he uses his capacities as he does and why animals that share many of these capacities (e.g., the chimpanzee) do not use them the same way. Why does man reason? Why does man make art? Why does man seek life in God? In a word, evolutionary science fails to explain man *qua* man.

This, finally and ironically, is the loud unspoken message of the article:

> [J]ust as we can close our eyes to prevent light from being converted into neural signals, science may provide a minority (i.e., nonbelievers) with the armamentarium to close their eyes to the supernatural. (sect. 3, para. 9)

To see man with eyes open – to see him as he is – is to conceive him differently. It is to see him, not in the blinkered metaphysic of evolutionary science, but in the revealing metaphysic of Divine creation (Sandelands 2005). It is to see him, not as an object of the natural world, but as a creative being in God. It is to see him as a supernatural being, a genuine soul. Only when seen in this second way – a way well-described by the world's great faiths – can satisfactory answers be found to the main questions about his life: What is a person? What is society? What is freedom? What does man want? And, what is the good? A full and true study of man must begin in God.

Reasoning about dead agents: A cross-cultural perspective

Harvey Whitehouse

School of Anthropology, University of Oxford, Oxford OX2 6PE, United Kingdom.

http://www.isca.ox.ac.uk/ **harvey.whitehouse@anthro.ox.ac.uk**

Abstract: Jesse Bering's theory of the "folk psychology of souls" is brilliantly elucidated and warrants further empirical investigation. While additional experimental research is certainly required, we also need to interrogate the evidence on reasoning about dead agents in a wide range of real-world settings.

Bering's "folk psychology of souls" comprises six main hypotheses that warrant further investigation in light of evidence from comparative ethnography.

The *Simulation Constraint Hypothesis* proposes that an inclination to attribute consciousness to the dead arises from an inability to simulate the absence of consciousness (whereas we have less difficulty simulating the absence of perceptual capacities such as seeing and hearing). Although this hypothesis may be correct, it is not obviously so. Loss of consciousness (e.g., when sleeping) is a routine feature of human experience and apparently quite easy to conceptualize, if not to simulate. It is noteworthy that adults, in our own society at least, sometimes imagine that children will be comforted by the idea that grandma is sleeping rather than dead, not because an absence of consciousness is hard to convey (quite the opposite), but because a *permanent* absence of consciousness is *alarming*. Further, an inclination to attribute consciousness to the dead would, in itself, be inconsequential in behavioural (and thus evolutionary) terms. Dead agents must additionally be attributed capacities that enable them to intervene in human affairs: at least minimally, they must not only be conscious but also have access to socially strategic information (e.g., being able to hear and see what mortals are saying and doing). The ethnographic record furnishes abundant examples of representations of dead agents whose perceptual capacities are preserved along with conscious beliefs and desires, whereas representations of dead agents as deaf or blind are rare or nonexistent. Thus, even if the simulation constraint hypothesis proves to be correct, its impact on behaviour must in turn depend on the activation of additional cognitive tools (e.g., as proposed in Barrett 2004 and Boyer 2001).

The *Mental Continuity Hypothesis* proposes that attributions of emotions, desires, and epistemic states to dead agents ("mental continuity judgements") result from universal cognitive biases emerging early in childhood. This hypothesis seems to be supported by evidence that among American children such attributions decrease with age, "the opposite pattern that one would expect to find if the origins of such beliefs could be traced exclusively to cultural indoctrination" (target article, sect. 2, para. 3). If this finding proves to be robust then, to rule out "cultural indoctrination" and other effects of variable environments, we would need to test the hypothesis across a range of cultural settings

https://doi.org/10.1017/S0140525X06479103 Published online by Cambridge University Press