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Counterintuition, existential anxiety, and religion as a
by-product of the designing mind

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A commentary on "Religion's Evolutionary Landscape: Counterintuition, Commitment,
Compassion, Communion" by Scott Atran and Ara Norenzayan

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Abstract:

In arguing for religion as a side-effect of everyday cognition, Atran and Norenzayan provide useful analyses of the strengths of the “naturalness-of-religion” position over others, however, experimental shortcomings limit the contributions of their empirical work. A relevant addendum involves considering research on children’s orientation to teleological explanations of natural phenomena suggesting that relatively rich cognitive proclivities might underlie religious thought.

Main Text:

Consistent with the thrust of much recent and substantive scholarship on religious thought (e.g., Barrett, 2000; 2004; Boyer, 1994; 2001; Guthrie, 1993; McCauley & Lawson, 1993; Pyysiäinen, 2001; Slone, 2004), Atran and Norenzayan argue for viewing religion as a by-product of systems evolved for everyday cognition. Beyond a helpful analysis of the benefits of this position over others, chief among their contributions to the “naturalness-of-religious cognition” thesis are new attempts to put aspects of the theory to empirical test. Unfortunately, however, shortcomings in experimental approach render many of these results less than compelling and it is therefore unclear how much further forward the empirical work propels the position.

The findings on counter intuitive agents are a case in point. Following Boyer (1994; 2001), Atran and Norenzayan argue that counterintuitive concepts are particularly viable for cultural transmission because they violate innate, modularized, expectations about domain-specific categories (i.e., plant, animal, person, substance) by adopting properties

of entities outside of their conceptual domain. Putting aside concerns that universals among adults do not indicate innateness and accrued infancy research provides strong evidence of, arguably, only a couple of the concepts the authors assert to be part of our innate ontology (i.e., *mentalistic agent*, *physical object*), the empirical test conducted to show that, under certain contextual conditions, predictable violations of these concepts have some kind of mnemonic advantage does not seem quite fair. Specifically, the study fails to include items that truly outlaw the possibility that all a concept needs to do in order to be memorable, and thus viable for religion, is have an uncharacteristic rather than domain violating feature. The bizarre items in their study such as “blinking newspaper” are not adequate controls because ambiguity renders many of them almost un-interpretable (Does a “nauseating cat” vomit or just make everybody else queasy?) and this factor would account for the ease with which they are forgotten. By contrast, it seems perfectly feasible that different kinds of examples such as “flying crocodile” or “venomous horse” might both be good candidates for mnemonic advantage although neither concept involves violating a domain-level, folk biological, boundary—they are simply cases of animals with properties characteristic of other animals. The issue of whether religious concepts are distinguished by domain violations rather than just atypical features is not minor, for, if the aim is to try and interpret recurrent properties of religious concepts by reference to systematic violations of putatively innate categories of thought, the alternative—that any non-normative concept suffices—must be excluded to maintain explanatory power.

The finding suggesting that existential anxiety motivates religiosity is interesting but also fails to include the appropriate control to rule out the possibility that any kind of potent emotional content induces religious feeling. Specifically, Atran and Norenzayan’s particular evolutionary argument would be strengthened if it were found that a condition describing a positively valenced incident (e.g., someone finding \$500 on the street) fails to increase feelings of religious belief.

Finally, given its centrality to the theory, experimental evidence further establishing the existence of the agency detection system would have been a welcome supplement to the current work. In addition to originally proposing the bias, Guthrie (1993, 2002) has documented the numerous ways in which art and advertising seem to capitalize on tendencies to perceive human / animal characteristics in visual arrays. However, aside from studies which find that adults and infants often construe the clearly observable movements of non-human entities (e.g. computerized blobs) as goal-directed (e.g., Csibra et al. 1999), Atran and Norenzayan do not discuss empirical research addressing the more relevant question of whether children and adults are prone to intentional or agency-based interpretations of events that are not readily perceptible and are without any obvious agentive involvement.

Evidence suggestive of this tendency is, however, provided by contemporary research on teleological thought—the bias to view entities and events in terms of a purpose. In addition to a body of findings indicating that preschool and elementary school children (and scientifically uneducated adults) have a promiscuous bias to explain the properties, behavior and origins of living and non-living natural entities in teleological terms (e.g.,

Casler & Kelemen, 2003; Kelemen, 1999; 2003; Kelemen & DiYanni, 2005), Donovan and Kelemen (2003) have recently found that, when asked to recall simple descriptions of natural events, 7-year-old children insert purpose information into their recollections despite its absence from the original verbal descriptions. For example, when asked to describe and explain an event sequence in which a storm washes away a crop infestation, children will indicate that the storm occurred *in order to* rid the crop of insects. Content analysis indicates that this tendency is not a result of any general teleological narrative convention in storybooks popular for this age group. Analyses of parent explanations of natural phenomena also indicate that it is not straightforwardly traceable to family conversations during earlier developmental periods (Kelemen et al. 2005).

These findings, and related results (e.g., Bering, 2003; Evans, 2001), raise an intriguing possibility not considered in the present article. Perhaps human beings are not simply inclined to respond to fragmentary information by sensing a lurking agent where, potentially, none exists. Perhaps the default tendency is richer than this and, from early childhood, people are cognitively disposed to broadly interpret many unexplained aspects of their experience in terms of the intentions and designs of some underdetermined and intangible agent (Kelemen, 2004). Such a bias would obviously provide the natural substrate for forms of religious cognition that are, as the current authors importantly note, a universal feature of all human cultures and, to a significant extent, intrinsic to all individual minds.

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