

**Field analysis of a new research initiative on
“Competitive Dynamics and Cultural Evolution of Religions and God Concepts”**

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In this topical area both theoretical and historical-empirical proposals will be considered. We seek explorations of the competitive and cultural forces that shape religions and the conceptualization of God. Numerous questions in this domain remain: What mechanisms influence the evolution of God concepts and vice versa? Is there a “natural selection” of religious ideas and does it slowly move society closer to truth? How can interactions among religions advance spiritual understanding? What are the results of the American experiment in religious pluralism? What role has secularization played in the progress of spirituality? This topical area seeks inquiries that approach religion and spirituality from the perspective of an important creative or causal factor in the formation of society. Approaches relevant to this area include evolutionary psychology, economic models, rational choice theory, game theory, computer models and simulations, and other models for cultural development.

Religions are in part cultural systems that succeed or fail on the basis of their properties. Religions vary in their behavioral prescriptions, theological beliefs, and social practices. The differences are heritable in the sense that a given religion transmits its properties through time with at least a moderate degree of fidelity. If the differences *make* a difference in terms of birth, immigration, survival, and emigration (the inputs and outputs of a demographic equation), then a winnowing process appears inevitable. Religions should become adapted to their environments, as surely as organisms become adapted through genetic inheritance mechanisms.

Despite the basic plausibility of religious cultural evolution, it is not at present an active field of inquiry. This neglect can be traced to the turbulent history of the study of cultural evolution in general. Early theories of cultural evolution owed more to Herbert Spencer than to Charles Darwin and attempted to order societies on a continuum from “primitive” to “advanced”. This linear view of long-term cultural evolution, which easily lent itself to racist and imperialistic doctrines, was rejected during the early 20th century in favor of the view that cultures cannot be ranked with respect to advancement (Carniero 2003). The new view could have been given an evolutionary formulation (e.g., most cultures are well adapted to their respective environments) but instead it resulted in an intellectual apartheid between “biology” and “culture” that has persisted to this day. As astonishing as it might seem, most of the advances in evolutionary biology during the second half of the 20th century have not been applied to the study of human cultures—religious or otherwise—until very recently.

We are currently witnessing a renaissance in the study of culture from an evolutionary perspective (Boehm 1999, Bowles 2003, Carniero 2003, Deacon 1998, Diamond 1997, 2004, , Fehr and Gächter 2002, Fehr and Fischbacher 2003, Gintis 2000, , Gintis et al 2005, Henrich 2003, Henrich et al. 2004, Koppl 2004, Nisbett 2003, Odling-Smee et al 2003, Richerson and Boyd 2004, Sober and Wilson 1998, Tomasello 1999, Wilson 2002, 2004). The new paradigm bears almost no resemblance to previous conceptions. Far from forcing cultures into a linear sequence, it attempts to show how our species evolved (by genetic evolution) a capacity for symbolic thought and cumulative social transmission that amounted to a new non-genetic mechanism of inheritance. Given a fast-paced process of cultural evolution built by genetic evolution,

modern cultural evolutionists then attempt to explain the explosive adaptive radiation that took place as humans spread over the globe, filling the ecological niches of approximately 500 mammalian species (Pagel and Mace 2004) and vastly expanding the scale of social organization within a period of a few thousand years. The scientists and scholars who have joined this effort include evolutionary, developmental, and neurobiologists, biological and cultural anthropologists, psychologists, economists, philosophers, and historians, providing a model of what E.O. Wilson (1998) called consilience.

These very recent developments have profound implications for the study of religion that flow in both directions. Those interested in religion gain a powerful conceptual framework for studying religious change and diversification. Those interested in culture gain an extensive and at times almost unbelievably detailed body of empirical knowledge of religious cultures around the world and throughout history—a temporal fossil record and current inventory, so to speak. Unlike the biological fossil record, which leaves almost no trace of the genetic, developmental, and physiological mechanisms that give rise to the phenotype, religious scholarship preserves the analogous proximate mechanisms for cultural evolution in the form of behavioral prescriptions, theological beliefs, and social practices (the proximate mechanisms) that influence how members of religious communities actually behave (the phenotype that is subject to the winnowing process of selection).

There are also profound practical implications of studying religion from a modern cultural evolutionary perspective. Positive religious objectives include a desire for peaceful and cooperative relations within and among groups, a wish to be part of something benign and larger than oneself, a belief that individuals and societies can be transformed into something much better in the future than the past or present, and a more immediate desire to transmit our best values to our own children and the next generation. *These objectives are possible but not inevitable outcomes of cultural evolution.* Concepts such as “truth”, “wisdom”, “spiritual understanding” and “harmony” are not the same as the evolutionary concept of “adaptation”. If we wish to achieve the former, we must understand their complex relationship with the latter. We must abandon the comforting--but false and strangely passive--belief that evolution is carrying mankind toward a benign

“Omega point” (Teilhard de Chardin, 1959). What we stand to gain is a more practical knowledge of how to bring the outcome of cultural evolution into alignment with positive religious and general ethical objectives.

The Metanexus Institute and John Templeton Foundation are in a unique position to create a funding platform for this topic area that places equal value on the practical and basic scientific implications. In the following sections I will recommend a number of specific areas that should be targeted for funding, along with a few that should not because they are already receiving sufficient attention or have not yet become sufficiently consilient with other bodies of knowledge.

Specific areas that should be targeted for funding

1) How well adapted are religious groups to their respective environments? The phenotypic traits associated with any given religion might be adaptive or nonadaptive. As adaptations, they might benefit groups relative to other groups, individuals relative to other individuals within groups, or cultural “memes” as parasitic organisms in their own right. If nonadaptive, they might have been adaptive in past environments or byproducts of traits that function adaptively in non-religious contexts. These are the major hypotheses that evolutionary biologists attempt to evaluate for all traits and they provide an excellent framework for the study of religion. At present, there is little agreement about the basic adaptedness of religion. Some authors (such as Sosis 2004 and Wilson 2002) interpret religions as impressively adaptive, while others (such as Atran 2002, Atran and Norenzayan 2005, and Boyer 2001) regard religion primarily as a nonadaptive byproduct of traits that provide benefits in earlier environments and nonreligious contexts. These interpretations need not remain “just so stories”. Evolutionary biologists routinely determine the facts of the matter for traits in nonhuman species and similar progress can be made for the subject of religion. Especially needed are collaborations between individuals who are at the forefront of cultural evolutionary theory and individuals who have deep empirical knowledge of past and present religious groups.

2) *What role do theological beliefs and practices (including conceptions of God and religious conceptions of human nature) play in adapting religious groups to their respective environments?* This is a more refined version of question 1. Religious conceptions of God and human nature vary widely, not only at a large scale (e.g. Christianity vs. Buddhism) but also at a small scale (e.g., Calvinism vs. Quakerism within Christianity). What accounts for such an amazing diversity of religious belief? Perhaps it is simply a product of human imagination without functional significance. Or perhaps differences in theological belief *make* a difference in how they motivate people to behave. Only empirical research can settle the issue, which once again requires a collaboration between those who possess detailed knowledge of specific religious systems and those who are accustomed to testing evolutionary hypotheses. Religious scholars have studied the origin and fate of new theological conceptions against the background of physical and social environments in extraordinary detail. This information is waiting to be organized by a modern cultural evolutionary theoretical framework.

3) *What can religion tell us about the process of cultural evolution in addition to its products?* The fact that genetic replication is a high-fidelity process is not an accident. It is a result of evolution (sometimes called “the evolution of evolvability”) that requires an elaborate machinery, including the *failure* to replicate (strategic innovation) during periods of environmental stress. Similarly, cultural mechanisms of inheritance are the product of past genetic and cultural evolution and are probably more sophisticated than most researchers are currently aware. The study of religion can provide knowledge about how cultural traits—especially those that make an important difference in terms of influencing behavior-- are transmitted (or lost), both horizontally (within generations) and vertically (across generations). Possibilities include the concept of sacredness and the use of powerful narratives that are more memorable and have more emotional force than legal-sounding prescriptions. The rapid pace of cultural evolution means that the mechanisms of cultural transmission can themselves evolve to keep pace with other cultural innovations such as writing, printing, and electronic media (Aunger 2002).

4) Religions *usually* promote harmony within groups but only *sometime* promote harmony among groups. What are the ecological, social, and cultural evolutionary factors that promote harmonious relations among religious groups? Evolution in general and cultural evolution in particular is inherently *multilevel* (Sober and Wilson 1998): Groups that function well become common by replacing less functional groups in some sense, whether by a process of economic or military competition or by psychological and social processes such as imitation, imposition, and so on. Genocide is one form of between-group selection that is morally abhorrent. Groups voluntarily adopting new practices because they work better is another form of between-group selection that is morally benign. The full spectrum of between-group selection processes have operated throughout history, including but not restricted to religious groups. It is astonishing how most discourse on this subject takes place in ignorance of basic evolutionary principles. Obviously, it is a priority of the first rank to understand when between-group selection takes violent vs. nonviolent trajectories.

5) Religions are in part vehicles of practical knowledge that enable people to behave adaptively in their environments, but much of this knowledge is encoded and transmitted in a way that appears the very opposite of pragmatic. What accounts for this paradox, or more generally the advantages of encoding practical knowledge in ways that are not self-evidently pragmatic? Some aspects of human psychology and culture are self-evidently pragmatic. There is little need to wonder about a farmer who discovers a better way to grow crops and transmits this knowledge (actively or passively) to others. Religion begs for an explanation in part because it appears to flaunt this kind of practical reasoning. There is more need to wonder about why the farmers sacrifice a portion of their harvest to the Gods. One possibility is that the elements of religion that *appear* impractical are impractical. Another possibility is that seemingly impractical elements turn out to be practical when judged by the standard of *what they cause people to do*. Both possibilities are plausible hypotheses that have occupied the attention of religious theorists and scholars throughout history. As with the study of between-group interactions, however, most discourse has taken place in ignorance of basic evolutionary principles—in this case the distinction between proximate and ultimate causation. The fundamental question is: When are behaviors that are “rational” or “practical” in the ultimate sense caused by

mechanisms that appear “rational” or “practical” in the proximate sense? Framing and testing the hypotheses in these terms can result in much more progress in the future than in the past.

6) *How do religious cultural systems differ from other cultural systems?* Human social organizations can be religious or nonreligious in character. Indeed, the basic question “What is religion?” leads to the identification of numerous component traits (such as spirituality, symbolic systems that place an emphasis on sacredness, and belief in entities that cannot be empirically verified) that also exist outside religion. Religion is a very fuzzy set! The history of any geographical region (such as Europe) reveals a complex interplay between religious and non-religious organizations (Poggi 1978). *The fact that religious and nonreligious social organizations interact with each other in cultural evolution means that the study of religion cannot be confined to religion.* It must take place within the context of a theory that includes but is not restricted to religion.

7) *The need for a balance between theoretical and empirical research.* Science requires a feedback process between hypothesis formation and testing. A theory can do no better than outline a number of plausible alternatives. If these alternatives can’t be tested against the facts of the real world, then the scientific process stagnates. In the absence of an appropriate theory, empirical information piles up like snowdrifts. Disorganized information is almost as bad as no information at all and once again the scientific process stagnates. These platitudes about science might seem out of place if they did not describe the current study of religion so well. There is an enormous amount of empirical information on religion but most of it is not organized with respect to an appropriate theoretical framework. There are many theories of religion but often they remain highly speculative and do not attempt to seriously engage the data. In short, what everyone knows (or should know) about the scientific process needs to be implemented for the study of religion. Grant proposals in this program should be evaluated in part for their ability to establish a genuine feedback between hypothesis formation and testing.

8) *The need for a consilient theoretical framework.* Scientific progress requires not only a theory but the *right* theory. It might sound suspect to claim that there is a single right theory (evolution), in contrast to potential alternatives such as rational choice theory, Marxist theory, complex systems theory, behaviorism, cognitive psychology, social constructivism, functionalism, methodological individualism, and so on. However, if we restrict ourselves to purely biological subjects, there *is* a single right theory—evolution—however much our understanding of the theory has changed in the past and will change in the future. Any naturalistic understanding of human phenomena must be consistent with evolutionary theory and can be deeply informed by evolutionary theory, a form of consistency that E.O. Wilson (1998) termed consilience. This does not mean that evolutionary theory renders all previous theories obsolete. Most, if not all, major theoretical and intellectual frameworks have some explanatory value but need to be understood in the context of evolutionary theory rather than as alternatives. For example, humans undeniably reason in cost/benefit terms and maximize certain utilities at least some of the time, which is the essence of rational choice theory. However, this impressive ability must have evolved by a process of genetic and/or cultural evolution and by itself cannot possibly explain all human phenomena, which has been the ambitious claim of rational choice theory. As neither separate nor adequate by itself, rational choice theory must be understood in the context of evolutionary theory, an intellectual development that is only just now in the process of taking place (Gintis 2003). The same can be said for social constructivist theories of human behavior, which have an important core of truth--after all, cultural evolution is by definition a process of social construction--but will be much better studied within the framework of evolutionary theory than as a vaguely articulated alternative. When the Metanexus Institute and the John Templeton foundation titled its funding initiative “Competitive Dynamics and Cultural Evolution of Religions and God Concepts”, it properly recognized that all human phenomena must be consistent with evolutionary theory to be explained within the framework of science. Moreover, this recognition needs to go beyond a vague acknowledgement to include a sophisticated understanding of the theory and empirical methods of evolutionary science.

Literature Cited

Atran, S. (2002). In Gods we Trust: The evolutionary landscape of religion. Oxford, Oxford University Press. Analysis of religion as a byproduct of cognitive adaptations that evolved in ancestral environments, primarily in a non-religious context.

Atran, S. and A. Norenzayan (2005). " Religion's evolutionary landscape: Counterintuition, commitment, compassion, communion." Behavioral and Brain Sciences In press. Summary and update of Atran (2002), followed by commentaries and reply.

Aunger, R. (2002). The Electric Meme. New York, Free Press. Perhaps the most thorough analysis of the meme as a useful concept for thinking about cultural evolution.

Boyer, P. (2001). Religion Explained. New York, Basic Books. Analysis of religion as a byproduct of cognitive adaptations that evolved in ancestral environments, primarily in a non-religious context.

Boehm, C. (1999). Hierarchy in the Forest: Egalitarianism and the Evolution of Human Altruism. Cambridge, Mass, Harvard University Press. An account of the genetic and cultural evolution of human ultrasociality, from our closest primate relatives to large-scale human sociality.

Bowles, S. (2003). Microeconomics: Behavior, institutions, and evolution. Princeton NJ, Princeton University Press. A treatise by an economist at the forefront of transdisciplinary research that includes traditional economics, evolutionary biology, psychology and anthropology.

Carniero, R. (2003). Evolution in Cultural Anthropology: a critical history. New York, Westview Press. A review of the history of cultural evolution, from before Darwin to the present, with a focus on the emergence of large-scale society.

Teilhard de Chardin, Pierre (1959). The phenomenon of man. New York, Harper. An early attempt to integrate evolution and religion that portrayed evolution as progressive with mankind at the forefront.

Deacon, T. W. (1998). The Symbolic Species. New York, Norton. A highly original and interdisciplinary attempt to show that humans are (nearly) unique in their capacity for symbolic thought.

Diamond, J. (1997). Guns, Germs, and Steel. New York, Norton. A panoramic history of worldwide cultural evolution from the origin of agriculture to the present.

Diamond, J. (2004). Collapse: How societies choose to succeed or fail. Viking, New York. An analysis of how past civilizations have failed and what modern civilizations

must do to share a similar fate.

Fehr, E. and S. Gächter (2002). "Altruistic punishment in humans." Nature 415: 137-140. Experiments that reveal the human propensity to punish social transgressions, even without the prospect of indirect benefits.

Fehr, E. and U. Fischbacher (2003). "The Nature of Human Altruism." Nature 425: 785-791. A review of human altruism that represents the best of contemporary interdisciplinary research.

Gintis, H. (2000). Game Theory Evolving. Princeton, NJ, Princeton University Press. A treatise by an economist at the forefront of transdisciplinary research that includes traditional economics, evolutionary biology, psychology and anthropology.

Gintis, H. (2003). "Towards the Unity of the Behavioral Sciences." Santa Fe Institute Working Paper #03-02-015. An article-length account of contemporary interdisciplinary studies of human sociality.

Gintis, H., S. Bowles, et al., Eds. (2005). Moral sentiments and material interests: the foundations of cooperation in economic life. Cambridge MA, MIT Press. A treatise by two economists at the forefront of transdisciplinary research that includes traditional economics, evolutionary biology, psychology and anthropology.

Henrich, J. (2003). "Cultural group selection, coevolutionary processes and large-scale cooperation." Journal of Economic Behavior and Organization 53: 3-35. An article-length account of modern research on cultural evolution, including commentaries.

Henrich, J., R. Boyd, et al. (2004). Foundations of human sociality: economic experiments and ethnographic evidence from fifteen small-scale societies. Oxford, UK, Oxford University Press. A unique interdisciplinary study in which a single set of experiments drawn from the field of experimental economics was administered to small-scale societies around the world.

Koppl, R., Ed. (2005). Evolutionary psychology and economic theory. Greenwich, CN, JAI Press. A recent volume exploring the interface between evolutionary and economic theory, including the nature of large-scale human social organizations.

Nisbett, R. (2003). Geography of thought: How Asians and Westerners think differently, and why. New York, Free Press. A popular book that summarizes current research on cognitive processes as a product of cultural evolution, but a leader in this field.

Odling-Smee, F. J., K. N. Laland, et al. (2003). Niche Construction: The neglected process in evolution. Princeton, Princeton University Press. An attempt to think about evolution as a co-evolutionary process in which organisms change their environment, which in turn changes the properties of organisms.

Pagel, M. and R. Mace (2004). "The cultural wealth of nations." Nature 428: 275-278. A brief account of how human cultural diversity exhibits the same patterns as biological diversity.

Poggi, G. (1978). The development of the modern state: a sociological introduction. Stanford, CA, Stanford University Press. This short history of the emergence of state-level society doesn't mention evolution by name but clearly implicates multilevel cultural evolutionary processes.

Richerson, P. J. and R. Boyd (2004). Not by genes alone: how culture transformed human evolution. Chicago, University of Chicago Press. The most recent and perhaps most balanced and accessible account of the contemporary field of cultural evolution.

Sober, Elliott and David S. Wilson. 1998. Unto Others: The Evolution and Psychology of Unselfish Behavior. Cambridge, MA: Harvard University Press. A book-length treatment of multilevel selection theory in relation to human behavior and cultural evolution.

Sosis, R. (2004). "The adaptive value of religious ritual." American Scientist 92: 166-172. An example of contemporary, theory-driven empirical research on religion from an evolutionary perspective.

Tomasello, M. (1999). The cultural origins of human cognition. Cambridge, MA, Harvard University Press. An attempt to understand the roots of human cultural evolution through the study of our closest primate relatives and human child development.

Wilson, D. S. (2002). Darwin's Cathedral: evolution, religion, and the nature of society. Chicago, University of Chicago Press. Analysis of religion as primarily a product of between-group selection, in contrast to the byproduct of interpretation of Atran and Boyer. The diversity of views among evolutionary biologists studying religion points out the need for a balance between hypothesis formation and testing.

Wilson, D. S., (2004). "The New Fable of the Bees: Multilevel selection, adaptive societies, and the concept of self-interest". Advances in Austrian Economics 7: 201-220. An article-length treatment of how multilevel selection, and not self-interest, accounts for all forms of ultrasociality.

Wilson, E. O. (1998). Consilience: The Unity of Knowledge. New York, Knopf. A general plea for the unification of knowledge.