

# Evolution and Religion

## The Transformation of the Obvious

David Sloan Wilson

In his autobiography, Darwin (1887/1958) describes a fossil-hunting expedition to a valley in Wales that he took as a young man with Adam Sedgwick:

We spent many hours in Cwm Idwal, examining all the rocks with extreme care, as Sedgwick was anxious to find fossils in them; but neither of us saw a trace of the wonderful glacial phenomena all around us; we did not notice the plainly scored rocks, the perched boulders, the lateral and terminal moraines. Yet these phenomena are so conspicuous that...a house burnt down by fire did not tell its story more plainly than did this valley. If it had still been filled by a glacier, the phenomena would have been less distinct than they are now (70).

Darwin and Sedgwick couldn't see the evidence for glaciers because the theory of glaciation had not yet been proposed. With the theory in mind, the evidence was so overwhelming that the glaciers might as well have still been present. This phenomenon can be called *the transformation of the obvious*. It illustrates the need for a theory to organize the facts that lay all around us. A similar transformation of the obvious occurred with Lyell's theory of geology and Darwin's theory of evolution.

Can there be a transformation of the obvious for the study of religion? Certainly we do not lack facts, which lay all around us like the rocks of Cwm Idwal. In addition to a sizeable social scientific literature on religion, there is a much larger body of traditional scholarship on religions around the world and throughout history. This information is descriptive, but so was most of the information about geological formations, plants, and animals available to Lyell and Darwin. What we lack is a comprehensive framework for *organizing* the facts about religion.

Evolutionary theory can provide this framework, as it has for the natural world and increasingly for other human-related subjects. However, this enterprise is still in its infancy, comprising perhaps a few dozen individuals, with the most important developments taking place within the last ten years. In this article I will attempt to provide a brief tutorial and progress report.

### Major evolutionary hypotheses about religion (or any other trait)

Evolutionary theory offers a number of major hypotheses for the study of any trait, which can be applied to the study of religion. Perhaps the most important question is whether the trait counts as an *adaptation* that evolved by enhancing survival and reproduction, as opposed to the many non-adaptive products of evolution. If so, then we need to know the *unit of selection*. Did it evolve by enhancing the fitness of whole groups, relative to other groups in the total population (between-group selection), or by enhancing the fitness of individuals, relative to other individuals in the same group (within-group selection). With cultural evolution there is a third possibility. A cultural trait can potentially evolve to increase its own transmission, like a disease organism, without benefiting human individuals or groups (Dawkins 2006; Dennett 2006).

If the trait is not an adaptation, it can nevertheless remain in the population for a variety of reasons. Perhaps it was adaptive in the past but not the present, like our eating habits, which make excellent sense in a world of food scarcity but have become a major cause of death in today's fast food environment. Perhaps it is a byproduct of another adaptation—a spandrel, to use an architectural metaphor made famous by Gould and Lewontin (1979). Or perhaps it is merely neutral and entered the population by genetic or cultural drift.

Table 1: Major evolutionary hypotheses for any trait, which can be applied to the study of religion.

RELIGION AS AN ADAPTATION	RELIGION AS NONADAPTIVE
Group-level adaptation (benefits groups, compared to other groups)	Adaptive in small groups of related individuals but not in modern social environments.
Individual-level adaptation (benefits individuals, compared to other individuals within the same group)	Byproduct of traits that are adaptive in non-religious contexts.
Cultural parasite (benefits cultural traits without regard to the welfare of human individuals or groups)	Neutral traits (drift)

These six major hypotheses provide an excellent framework for the study of religion, as shown in Table 1. One indication of its utility is that it can classify past theories of religion that were formulated without evolution in mind, in addition to more recent efforts based on contemporary evolutionary theory.

As one example, consider Durkheim's (1912/1995) definition of religion: "[A] unified system of beliefs and practices relative to sacred things...which unite into one single moral community called a Church, all those who adhere to them" (44). Durkheim and the tradition of functionalism that he helped to initiate clearly imagine religion as a system that is adaptive at the level of whole groups. Nevertheless, it was not classified as "evolutionary" at the time because cultural evolution was associated with a linear progression from savagery to civilization. From a modern evolutionary perspective, Durkheim might well have been on the right track, but his theory of group-level functionalism requires an explanation in terms of group-level selection.

As a second example, modern sociologists tend to rely upon economics as their theoretical framework for explaining religion. According to Rodney Stark and William Bainbridge (1987; Stark 1999), the human mind is designed to formulate explanations that are good at obtaining benefits in a non-religious context. Some benefits cannot be had, such as rain during a drought or everlasting life. That does not prevent us from wanting them, so we invent gods with whom we bargain for that which we can't have. This is clearly a byproduct theory of religion as something that is not adaptive by itself but connected to something else that is adaptive. Evolutionists such as Pascal Boyer (2001), Scott Atran (2002) and Kirkpatrick (2004) have a different conception of the mind than Stark and Bainbridge, based on evolutionary psychology rather than economic theory, but they also envision the elements of religion as by-products of mental "modules" that evolved in non-religious contexts. More generally, it is gratifying that the evolutionary framework can accommodate all naturalistic theories of religion, past and present, without requiring additional major hypotheses.

At this point, it is worth asking whether the evolutionary framework has added anything new, especially if it can assimilate all past theories. If there is no alternative to evolutionary theory, doesn't it become a vacuous term for any kind of change? In biology, evolution is defined as any kind of genetic change, whether by selection, mutation, drift, linkage, or any other process. It is important for the definition to include everything, or else it would not function as a complete accounting system. The theoretical framework is not vacuous because it includes specific categories of change. Progress is made when we assign particular traits to particular categories – that the spots on guppies evolve primarily by selection, rather than drift; that many genetic polymorphisms are selectively neutral and evolve by drift, rather than selection; that juvenile features of domestic dogs are byproducts of selection for tame behavior, and so on.

The study of human-related subjects such as religion from an evolutionary perspective is much the same. Human behavioral change is often based upon psychological and cultural processes that are rudimentary or absent in other

species, but we still must begin with a complete accounting system for any kind of change, which is not vacuous because it includes a number of meaningful categories for classifying particular examples of change. This is the sense in which the evolutionary framework outlined above represents an important advance for the study of religion.

Another point to make is that “non-evolutionary” theories of religion were never truly imagined as non-evolutionary. To pick the example of Stark and Bainbridge’s economic theory, they are not creationists and do not invoke supernatural intervention. When pressed to explain why the human mind is designed for cost-benefit reasoning in non-religious contexts, they would surely invoke evolution. In this fashion, Stark and Bainbridge rely upon evolution, *but think they can proceed without knowing much about evolution*. The same can be said for every other theory of religion that rejects the possibility of supernatural intervention. What’s new is that the italicized assumption has proven false for the study of religion and virtually all other human-related subjects. Not only do naturalistic explanations require assumptions about evolution, but they also require a sophisticated knowledge of contemporary evolutionary theory.

### **A current lack of consensus among evolutionists**

Once we have a general theoretical framework, we need to determine the relative importance of the major hypotheses for particular elements of religion. Evolution is a messy, multifactorial process and all of the major hypotheses might be relevant to some degree – otherwise they would not be worth including as categories within the general framework. Still, for any given religious trait, some hypotheses will be more relevant than others and it should be possible to reach a consensus, based on the empirical evidence. With the accumulation of studies, a more general assessment of the major hypotheses becomes possible. Until the field of evolutionary religious studies is operating in this mode, it cannot be considered a fully mature scientific discipline.

Unfortunately, the field is *not* yet operating in this mode. Evolutionists interested in religion agree on the major hypotheses, but there is no consensus whatsoever on their relative importance. Each has its champions as the primarily explanation of religion. In my opinion, there can be much more agreement among evolutionists on the basis of current information. For example, there can be a consensus on the plausibility of group selection, especially for human cultural evolution, despite the heretical status of group selection in the past (Wilson 2002, 2007). There can also be a consensus about byproducts turning into adaptations. In particular, authors such as Kirkpatrick (2004) might be right that most elements of religion are based on genetic psychological adaptations that evolved in non-religious contexts, but authors such as Richerson and Boyd (1999, 2005) might be right that cultural evolution turned these

“exaptations” into adaptations for collective action. Even though the nascent field of evolutionary religious studies comprises only a few dozen people, in the past they have worked largely in isolation. Workshops such as the one that led to this volume and other mechanisms of coordination are required to turn these individuals into a coherent scientific discipline worth the attention of the wider community of scientists and scholars interested in religion.

### **A natural history foundation**

Evolution is fundamentally about the relationship between organisms and their environments. That is why detailed field studies of plants and animals are so important and provide the foundation for more controlled laboratory experiments. For religion, the analog of a field study is a careful ethnography of a particular religious system in a particular location and time. Fortunately, this kind of information exists in abundance for religions around the world and throughout history. Religious scholars are the natural historians of religion, and the field of evolutionary religious studies needs to collectively play the role of Darwin in organizing this information from an evolutionary perspective.

In *Darwin’s Cathedral* and a subsequent article (Wilson 2002, 2005) I made a humble beginning by conducting a study of 36 religions, chosen at random from Eliade’s (1987) *Encyclopedia of Religion*. The encyclopedia was used to *select* the religions, which were then *evaluated* with respect to the major hypotheses using the wider literature. Because the religions were chosen without respect to any particular hypothesis, the sample can be used to assess the relative importance of the major hypotheses for religious systems in general, as defined by the editors of the encyclopedia. The details are provided by Wilson (2005), but the general conclusion is that most religions in the sample are clearly designed to define groups, coordinate behavior within the group, and solve the all-important problem of cheating. Their *secular utility*, as Durkheim would put it, is unmistakable. Elements of religion that appear irrational and dysfunctional often make perfectly good sense when judged by the only appropriate gold standard as far as evolutionary theory is concerned—by *what they cause people to do*. This conclusion emerges so strongly that it begins to qualify as a transformation of the obvious. Space permits only a single example of what I mean by this bold claim.

### **Jainism: an example of the transformation of the obvious**

One of the religions in the sample is Jainism, which has been practiced by a small fraction of the Indian population for thousands of years. It is one of the most ascetic religions in the world. Jain renouncers are homeless and without possessions. They filter the water that they drink, the air that they breathe, and sweep the path in front of them to avoid killing unseen creatures. They

even occasionally fast themselves to death in a practice called Santhara, which is celebrated by the entire community. How can such a religion be adaptive for either individuals or groups? Jainism appears to be a good candidate for the cultural parasite hypothesis—until one reads the scholarly literature.

It turns out that the renouncers comprise a tiny fraction of the religion, whose lay members are among the wealthiest merchants of India. The Jains occupy an economic niche similar to the Jews of Western Europe and other merchant societies around the world (Landa, 2007), which requires cooperation over long distances and is correspondingly vulnerable to exploitation. The religion provides an elaborate set of mechanisms for insuring cooperation. The renouncers even serve as a moral police force, entering the houses of the lay Jain families and inspecting their devoutness before accepting their food (see Wilson, 2005 for a more detailed discussion). Here is how one natural historian of religion, a Jain scholar named James Laidlaw, describes the secular utility of Jainism in a book whose title says it all: *Riches and Renunciation: Religion, Economy, and Society among the Jains* (Laidlaw 1995):

How then, is it possible to live by impossible ideals? The advantage for addressing this question to Jainism is that the problem is so very graphic there. The demands of Jain asceticism have a pretty good claim to be the most uncompromising of any enduring historical tradition: the most aggressively impractical set of injunctions which any large number of diverse families and communities has ever tried to live by... This directs our attention to the fact that yawning gaps between hope and reality are not necessarily dysfunctions of social organization, or deviations from religious systems. The fact that lay Jains make up what is—in thoroughly worldly material terms—one of the most conspicuously successful communities in India, only makes more striking and visible a question which must also arise in the case of renouncers themselves (7).

With a little information, such as the sight of an emaciated ascetic or beliefs and practices that appear bizarre and irrational when taken out of context, Jainism appears obviously dysfunctional for both individuals and groups. The same religion becomes obviously functional based on more information. As for Jainism, so also for most of the religions in the random sample. As for the random sample, so also for most of the religions in the *Encyclopedia of World Religions*.

### **Humans as a largely group-adapted species**

Evolutionary theory was confined to the biological sciences and excluded from most human-related subjects for most of the 20<sup>th</sup> century. Now virtually all human-related subjects are being approached from an evolutionary perspective, with the most important developments occurring during the last ten or twenty years. There will be many transformations of the obvious, including

but not restricted to religion. In retrospect, we will wonder how we could have missed the degree to which we are genetically and culturally adapted to function at the level of groups.

## References

- Atran, S. 2002. *In gods we trust: The evolutionary landscape of religion*. New York, NY: Oxford University Press.
- Boyer, P. 2001. *Religion explained: Evolutionary origins of religious thought*. New York, NY: Basic Books.
- Dawkins, R. 2006. *The God delusion*. London, UK: Bantam Press.
- Darwin, C. 1958. *The autobiography of Charles Darwin, 1809-1882, with original omissions restored*. Ed. Nora Barlow. New York, NY: Harcourt Brace. Original work published 1887.
- Dennett, D. C. 2006. *Breaking the spell: Religion as a natural phenomenon*. New York, NY: Viking.
- Durkheim, E. 1995. *The elementary forms of religious life*. New York, NY: The Free Press. Original work published 1912.
- Eliade, M. Ed. 1987. *The encyclopedia of religion*. New York, NY: MacMillan.
- Gould, S. J., & Lewontin, R. C. 1979. The spandrels of San Marco and the panglossian paradigm: A critique of the adaptationist program. *Proceedings of the Royal Society of London, Series B*, 205 (1161), 581-598.
- Kirkpatrick, L. A. 2004. *Attachment, evolution, and the psychology of religion*. New York, NY: Guilford Press.
- Landa, J. T. 2007. The bioeconomics of homogenous middleman groups as "adaptive units." *Journal of Bioeconomics*.
- Laidlaw, J. 1995. *Riches and renunciation: Religion, economy and society among the Jains*. Oxford, UK: Oxford University Press.
- Richerson, P. J., & Boyd, R. 1999. Complex societies: The evolutionary origins of a crude superorganism. *Human Nature*, 10, 253-290.
- Richerson, P. J., & Boyd, R. 2005. *Not by genes alone: How culture transformed human evolution*. Chicago, IL: University of Chicago Press.
- Stark, R., & Bainbridge, W. S. 1987. *A theory of religion*. New Brunswick, NJ: Rutgers University Press.
- Stark, R. 1999. Micro foundations of religion: A revised theory. *Sociological Theory*, 17, 264-289.
- Wilson, D. S. 2002. *Darwin's cathedral: Evolution, religion and the nature of society*. Chicago, IL: University of Chicago Press.

