



Is Religion Adaptive?

Yes, No, Neutral, but Mostly, We Don't Know

Peter J. Richerson & Lesley Newson

We argue that the question “Is Religion Adaptive?” has no simple answer. We will use evolutionary theory as a tool to outline a theory of adaptation and maladaptations as regards religion. Evolutionary theory gives us access to concepts and theoretical and empirical tools that have been very successful in explaining biological diversity. Of course the tools of evolutionary biology have been mostly developed through the study of non-human living organisms with the assumption that it is *genes* that are evolving. The evolutionary study of human behavior adds an important wrinkle. In all living things, information is transmitted down the generations coded in genes. But humans also pass on a vast amount of information down the generations through culture.

Just as evolutionary theory can help us understand genetically inherited diversity, it can help us understand diversity that is inherited through culture. Only in the last quarter of the 20th Century did scholars begin to turn their minds to developing a quantitative, mechanistic theory of cultural evolution and most of the pioneers were biologists, not mainstream social scientists (Cavalli-Sforza & Feldman 1981; Lumsden & Wilson 1981). Most twentieth century social scientists saw little use in trying to derive a basic theory of human behavior from biology or evolution. An important exception was the psychologist Donald Campbell (1965; 1975). Today Darwinian social science is perhaps as mainstream as any other variety in this unfortunately fragmented field of inquiry (Gintis 2004; Laland & Brown 2002).

That religions are part of culture can be seen by the way they are inherited. If a baby, whose parents were Buddhist, is adopted by a Christian family in the United States, she will grow up to know about Christianity and will perhaps consider herself to be a Christian. Just as a child of Chinese speaking parents adopted by English speakers in an English-speaking community receives no knowledge of Chinese words from her genes, neither will she have Buddhist teachings coded in her genes. On the other hand, the *capacity* to learn a language *is* inherited genetically. Might it be that some capacity to “be religious” is also inherited genetically?



Richard Dawkins (2006) argues that religious ideas are maladaptive cultural elements (memes), typically transmitted to children at young ages when their minds are impressionable and their decision-making powers not yet fully functional. He subscribes to a by-product hypothesis to explain most if not all of religion. Young minds have to be impressionable so as to rapidly and accurately acquire essential information from parents. Parasitic religious memes take advantage of this impressionability.

Dawkins' analysis is too simplistic. Nevertheless, one doesn't have to follow Dawkins in suggesting that *all* religious ideas, institutions, and organizations are maladaptive to realize that some probably are. Theory tells us that cultural variants that are transmitted non-parentally can readily evolve pathological properties. Extreme examples of religious sects espousing maladaptive ideas do certainly exist. The cult led by Jim Jones that committed mass suicide in 1978 is one example.

Let's pick apart the question: "Is Religion Adaptive?" Are we asking if religion as a whole is adaptive, or some particular religion? Or do we want to examine some aspect of religion? Every religion is an amalgam of beliefs, practices, institutions, and organizations. These are webbed up with other domains of culture—art, social and political organization, family life, practical knowledge, and so on. And, of course, religions are diverse in a multiplicity of dimensions. There are polytheisms, monotheisms, and a-theistic spiritual, ethical, and mystical systems. Some insist that adherents maintain a proper set of beliefs, some consider carrying out proper ritual to be all-important, and some emphasize common commitment to ethical ideals. Some restrict entry to a select few. Others are evangelical and open to all who want to join. Some religions are bureaucratic and authoritarian and others are the product of egalitarian local groups. We know that some societies are successful and some fail and collapse. Religions, given their importance, complexity, and diversity, certainly contribute to both success and failure.

Dawkins' parasitic meme explanation gives us a first cut at a theory of religious maladaptations. Now let us turn to how religion might evolve adaptations. Religion—or "a" religion—or some aspect of religion might be adaptive for an individual human, or it might be adaptive for a group of individuals, a congregation, a tribe or a nation. In the case of the individual, we use "adaptive" to mean helping its survival and reproductive success. Religions seem to have individually adaptive benefits. For example, Hill and Pargament (2003) review the literature on the connection between religion and spirituality and physical and mental health. In the case of the group of individuals, we use "adaptive" to mean helping the group to continue and grow by recruiting new members and by helping the long-standing members to prosper and reproduce. Most adaptive accounts of religion focus on adaptations at the group level.

Let us see how such an account might be built. Richerson and Boyd (2005) have developed what they call the “tribal social instincts hypothesis” to explain human cooperation. The hypothesis argues that the evolution of culture set in motion a process of group selection on cultural variation. Populations in semi-isolation rapidly evolved cultural differences. Symbolic boundaries limited the flow of ideas between groups. Individual members were inclined to copy the behavior most common within their group and this decreased the differences within the groups and increased differences between the groups. Individuals who failed to conform were punished and fared badly within the group. Groups with superior culturally transmitted social institutions prosper in competition with ones with poorer institutions.


As these processes continued for generation after generation in the remote past, primitive cooperative institutions arose, forming a social environment that selected for innate social instincts that enabled humans to live in moral communities. The humans successful in this environment were relatively docile, prepared to conform to social norms and institutions, and prepared to cooperate, especially with members of a symbolically marked in-group. The societies in which our social nature was shaped were tribes comprising only a few hundred to a few thousand people, but in size and degree of cooperation they far surpassed the societies of other apes. These instincts don’t force us to cooperate with just anyone, but enable us to learn to cooperate when appropriate. Thus human tribes and their modern successors came to be adapted units. Religions are candidates to have furnished some of the institutions that make tribes, and eventually large social systems, adapted systems.


Note that an adaptation at any one level is often maladaptive at other levels; religions that organize congregations tend to lead to sectarian strife among congregations. Sonya Salamon (1992) provides a concrete example from her comparisons of farming communities in the American state of Illinois. British ancestry communities in the state typically have a number of small Protestant churches. Congregations preach incompatible dogmas and compete for members. Religion is a divisive influence at the community level. German ancestry communities tend to have a single church in each community, either Catholic or Lutheran, but not both in any one community. In these communities the churches foster community-level solidarity.

Common features of religions are plausible community level adaptations (D.S. Wilson, this volume). Most religions teach a moral code that requires its members to help one another. They also provide the means for identifying “true” members (those who have taken the teachings to heart) from those who are not. Many elements of religion serve to mark the members in good standing. Iannaccone (1994) argues that strict faiths can generate higher levels of cooperation and mutual help than lax ones because the practices of

strict churches are too costly for cheaters to fake. The beliefs of strict churches are complex and difficult to learn. The ongoing expenditures of time and resources to conform to the practices of strict faiths are high. Subscribing to outlandish beliefs handicaps members from reasonably considering the evidence and judging what might really be in their best interest. Belonging to a strict faith is a conspicuous commitment that makes it difficult for members to maintain strong ties with members of other belief systems. Few are willing to pay such high costs unless their commitment to the religious community is genuine. The group is therefore protected from invasion by parasitic impostors.

Still, the higher the costs members of a religion must pay, the lower their net benefit in being a member. The congregation might be so engaged in maintaining rituals and ritual objects that they can devote no effort left to helping one another. Furthermore, the levels of practical commitment that might sometimes be required of devout faith group members may be detrimental to their welfare. The net adaptive benefits of a religion may fall below zero well short of an extreme case like Jonestown.

When religion promotes welfare because it unifies a community under a common set of customs, institutions, and organizations, it is most effective when most t all people in the population are members of the religious community. At the tribe and village scale, such uniformity may arise spontaneously, but the evolution of state-level societies was typically accompanied by the formation of more formal religious systems. Throughout the history of civilization, many conquerors and leaders have attempted to unify a population by declaring one form of religion to be official, often with themselves as the official leader or even as a living god. As ancient empires like Rome grew, they often incorporated the gods of newly won communities into the imperial pantheon. The teachings in the Qur'an unified Arab clans and eventually many different national groups despite the schisms that soon developed. Many societies, be they historically Buddhist, Christian, or Islamic, were and still are hostile to unofficial ideologies.

The fact that so many civilizations throughout history have had official religions suggests that religions are often a net advantage to a large population. Perhaps religion is most advantageous when everyone subscribes to a single one. A "universal" religion can promote cooperation on a wide scale and coordinate larger groups, bringing important benefits to the whole society (Wilson 2002). On the other hand, established churches often become hidebound, bureaucratic, and corrupt. Sometimes they are the handmaidens of predatory elites. Sociologists of religion  Roger Finke and Rodney Stark (Finke & Stark 1992) contrast the feebly established churches of Western Europe with America's vibrant religious economy based upon a plethora of entrepreneurial churches and sects.

Culture is commonly adaptive in part because human actors shape them to be so. David Wilson (2002) provides a number of examples of religious ideas being adopted because they provided fitness benefits. The formation and spread of Calvinism is his central example. He describes in some detail how the problem of corruption in the Catholic Church led Calvin and his colleagues to propose, and the people of Geneva eventually to adopt, a religiously inspired code of conduct that effectively ended the disruptive factionalism in the city. Calvin's model inspired much imitation based on its success in Geneva. Karen Armstrong (1991) gives a similar account of Muhammad's religiously inspired code aimed at regulating the intertribal anarchy of the Arabs. Stephen Lansing (1993) shows how Balinese Water Temples function to organize scarce water and coordinate rice planting on Bali so as to optimize rice yields.


However, cultural-evolutionary mechanisms may generate specific sorts of maladaptive behaviors and, again, religion is as vulnerable as any other part of culture. For example, symbolic culture can evolve maladaptively exaggerated traits by a mechanism much like sexual selection (Richerson & Boyd 1989). Exaggerated, costly, religious rituals could be examples. The Protestant Reformation's charge that the Roman Catholic Church's lavish expenditures for buildings and ornaments were dysfunctional is a potential example. Perhaps costly religious behavior sometimes has little or nothing to do with guaranteeing honest signals and is mostly or entirely costly competitive exaggeration.

Conclusion

In the face of biological and cultural complexity and diversity, phenomena like religion are unlikely to support sweeping generalizations about adaptation versus maladaptation. Theory tells us that many things are possible and the empirical cases seem to agree. Any generalizations will have to be based upon careful empirical work. The basic task is to total up the various kinds of costs and benefits that accrue to religious variants at all the relevant levels of organization. This project has barely begun in any domain of culture.

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