

Sacred versus Secular Values:

Cognitive and Evolutionary Sciences of Religion and Religious Freedom

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Introduction

In his chapter for this volume, Justin Barrett develops the view put forward by Robert McCauley (2011) that “religious expression in beliefs and practices is nearly inevitable in most people.” This view is based on recent advances in the cognitive and evolutionary sciences of religion (CESR henceforth), and is otherwise known as the *naturalness of religion thesis*: the claim that because religion is part of the phylogenetic and ontogenetic history of human beings, it is natural to humanity. The purpose of this chapter is to examine this claim and to explore some of its implications for religious freedom, the principle that people are free to choose their own religious beliefs and governments should not enforce state religion or seek to eliminate all religious expression. The primary question we wish to address is: If religion is indeed natural to humanity, should it be afforded special political protections safeguarding its expression? At first blush, it may appear that the answer to this question depends on how the alleged naturalness of religion is understood. We argue, however, that regardless of where religion lies on the naturalness spectrum, CESR offers few convincing reasons for protecting religious expression in terms of naturalism, and that there are compelling reasons for cautioning against such. Our central thesis is that religion may be a fundamental political right that deserves legal protection, but such protections cannot be derived from its naturalness. What CESR can offer is a materialist account of religious beliefs and practices, which may prove useful for explaining religion in secular terms and resolving conflicts between religious believers and secularists.

Barrett (this volume) has initiated the discussion on naturalism from the perspective of cognitive science; we hope to complement his outstanding contribution by focusing on recent advances in the evolutionary sciences. Together, these approaches have ushered in a renaissance in religious scholarship, including the emergence of new academic societies, conferences, and journals. Indeed, over the past decade the cognitive and evolutionary sciences have merged into what appears to be an interdependent and mutually beneficial long-term collaboration. Still, these areas of study began as independent approaches, and despite a flourishing relationship, they continue to maintain distinct research methodologies and foci (Bulbulia et al. 2008; Sosis and Bulbulia n.d.). As the following discussion illustrates, the two approaches often yield divergent conclusions over the evolution of religion, even when considering the very same issue.

To summarize the outline of this chapter, we first offer a brief overview of the evolutionary study of religion and its relationship with the cognitive science of religion. We then describe one evolutionary theory of religion, namely, signaling theory, which is acutely pertinent to the discussion that follows. Next, we examine the implications of evolutionary signaling theory for the naturalness of religion thesis. We then conclude with a short discussion about the implications of this work for religious freedom. Because of the numerous fields of study that our topic touches upon, we note here that our discussion is conveyed amid considerable diversity in the science and philosophy of religion. Undoubtedly, then, many issues such as religious epistemology, the moral right to religion, and the nature of religious freedom will escape the limits of our analysis. Nonetheless, we hope our contribution is able to cross disciplinary divides, and speak to scientists, philosophers, and policy-makers alike.

Evolutionary Science of Religion: an Overview

Eminent theorists from Hume to Weber have long recognized that religion evolves, that is, it changes and develops over time. For instance, in his *Natural History of Religion* (1993 [1757]: 158-59), Hume

commented that there is a kind of flux and reflux to religion such that, in due time, it changes with individuals and societies. Likewise, Weber noted that a community's religious system tends to become embedded in its political structure, thus changing with its military and economic prosperity (1991 [1922]: 17). But despite recognizing the ebb and flow of religion, these theorists, like most scholars of their day, remained in the dark about the exact mechanism responsible for change; it was not until Charles Darwin that light was shed on the matter.

The evolutionary study of religion rightly originates with Charles Darwin, who offered a mechanism that could explain change in nature, including changes in human behavior over time. That mechanism is natural selection, which Darwin described as follows: "if variations useful to any organic being do occur, assuredly individuals thus characterized will have the best chance of being preserved in the struggle for life; and from the strong principle of inheritance they will tend to produce offspring similarly characterized" (2005[1859]: 413). Building on this observation, Darwin considered human evolution in the *The Descent of Man, and Selection in Relation to Sex* (1871), where he argued that, similar to other adaptations, human beliefs and behaviors evolved by differential survival and reproduction. Remarkably though, when considering religion Darwin failed to apply his own selectionist logic and thought the problem of the origin of religion was relatively easy and obvious. He wrote: "As soon as the important faculties of the imagination, wonder, and curiosity, together with some power of reasoning, had become partially developed, man would naturally crave to understand what was passing around him, and would have vaguely speculated on his own existence" (2005[1871]: 678). According to Darwin, then, once humans evolved the ability to reflect on their own existence they needed answers to existential questions, and religion was born to provide those answers.

Darwin was a careful scientist and his detailed descriptions of the structure and form of numerous species remain an inspiration to scientists today. Yet, in spite of his keen observational skills, he seems to have completely missed the structure and form of religion. For simply contemplating existential questions does not lead one to build elaborate monuments, undergo circumcision, renounce sexual activity for a lifetime, or turn dinner into charcoal on an altar for beings that have never been seen. Darwin deserves credit for launching the evolutionary science of religion, but, admittedly, it was not a strong beginning. Indeed, only in the past decade have evolutionary scholars begun to understand why selection has favored the many remarkable beliefs and behaviors that constitute religious expression.

While Darwin may have thought the causal factors favoring religion's evolution were obvious, the evolutionary study of religion faces a number of significant challenges. Here we mention two that are particularly relevant to the discussion that follows. The first challenge is that patterns of religious behavior, like other areas of social life, have undergone considerable change over our evolutionary history, making generalizations about them somewhat tenuous. British anthropologist E.E. Evans-Pritchard (1965) was explicit to the point when he argued that dramatic historical changes in religious behavior render it impossible to generalize across categories of religions such as tribal, chiefdom, and contemporary world religions. To overcome this challenge, the evolutionary science of religion observes the following three points. First, religion is describable by means of methodological naturalism, which simply means that the supernatural and normative need not be invoked to explain any set of religious phenomena. Second, the ethnographic record indicates that religious behavior is quite costly, but nonetheless rampant across cultures, including modern societies (Bulbulia 2007: 622). Third, given that religion is costly, natural selection must have favored its survival only if it provided potential benefits to its practitioners, such as enhancing cooperation, assuaging existential concerns, or improving health and healing (Atran 2006; Bulbulia 2006; Sosis 2006; Sosis and Alcorta 2003). Hence, evolutionary scientists

of religion do generalize across time and space because they presume that religious behaviors are natural phenomena that are responsive to the range of selective pressures humans have experienced throughout their varied evolutionary history, and the costs and benefits of these behaviors can be analyzed from an adaptationist perspective.

The second challenge for evolutionary scientists is how to define religion. Put simply: What is religion? And more specifically, when considering the evolution of religion, what is selection operating on and what is evolving? With regard to what religion is, scholars have offered countless definitions. However, those definitions range from individual experiences to collective beliefs, from ritual practices to social institutions, or they are specific to study topics which can be as diverse as Neanderthal burials and contemporary religious fundamentalism. It is not clear, then, whether religion is a coherent set of phenomena or an artifact of various disciplines and discourses, imposed on disparate human activities (Smith 2009). Acknowledging these difficulties, evolutionary scholars propose that religion, if anything, is an inherently fuzzy category with unclear boundaries.

Accordingly, rather than defining religion per se, many evolutionary scholars have concluded that it can be best studied by considering its constituent parts (Alcorta and Sosis 2005; Atran and Norenzayan 2004; Bering 2005; Bulbulia 2005; Sosis 2009a; Whitehouse 2008). For despite its diversity, religion consists of recurrent core features that receive varied emphasis across cultures. For instance, although Christian cultures place great emphasis on the afterlife, Judaic cultures put less emphasis on the afterlife and more on human responsibility in this life (Baecck 1958). Furthermore, while some cultures focus on mystical experiences, others focus on creeds and doctrine (Whitehouse 2004). The task for evolutionary scholars is therefore to shift attention away from providing a conclusive definition of religion, and to focus instead on demarcating its recurrent features. In doing so, one finds that such features include—among others—ritual, myth, taboo, emotionally charged symbols, music, altered states of consciousness, commitment to supernatural agents, and afterlife beliefs. Developing a list of religion's core features is of course fraught with its own difficulties: specifically, scholars will undoubtedly continue to debate fiercely about what should be included and excluded from the list. We wish to point out, however, that even if a list of features were universally accepted, religion would remain a fuzzy category, as there are always human activities on the fringes that will defy strict definitional boundaries.

With that said, breaking the social category of religion down into its more easily definable core elements has several advantages. First, it avoids endless disputes concerning whether Marxism, science, patriotism, sports and so on are religions. After all, it is clear that religion shares several core elements with these cultural institutions, especially in terms of promoting group commitments, involving ritual, assuaging anxieties, and inculcating myths. Second, it allows researchers to take a comparative approach to religion, and thereby identify and explain why some groups emphasize different aspects of religion above others. Third, and most importantly, by breaking religion down into its basic elements it becomes obvious that these elements did not evolve together. Ritual, for example, has antecedents in many other species (Alcorta & Sosis 2005, 2007; D'Aquili et al. 1979) and presumably has a much deeper evolutionary history in our lineage than many other core elements, such as myth. Therefore, asking "When did religion evolve?" is a poor question because it assumes that at some point in our evolutionary history religion simply "appeared." But this is not the case: religion did not just appear, but rather consisted of uniting cognitive processes and behaviors that for the most part already existed. And although these elements evolved separately, at some point in our evolutionary history they began to coalesce regularly. With regard to timing, then, the appropriate question is: "When did the features of religion coalesce?" At the moment we do not have a clear answer to this question, and we know surprisingly little about the dynamic interrelationship between the many core features of religion. Of

course, understanding why these features coalesce as they do should provide us with insights about *when* they began to do so.

Finally, breaking religion down into its constituent parts also clarifies what selection has operated on—a coalescence of cognitive, emotional, and behavioral elements—and directs us to the appropriate questions for analyzing the adaptive value of religion. Put simply, even if religion is simply a Western construct, as some have argued (Klass 1995), it is nonetheless a collection of cognitive processes and behaviors that form an appropriate unit of adaptationist analysis; for it is the functioning of these processes together that makes religion an adaptive system. Specifically, religion is an adaptive system, similar to—but no less complex than—the respiratory, circulatory, or immune systems, all of which are also Western constructs and probably lacking in the lexicon of traditional populations, yet no less interpretable through an evolutionary lens. With this in mind, it is clear why evolutionary scholars avoid the murky waters of defining religion, and focus instead on pinpointing its recurrent set of core elements: if religion is an adaptive system, then it needs to be studied as such. To clarify, evolutionary scholars do isolate and study specific core elements of religion in order to understand their fitness effects and how they function. The point is simply that it is the religious system itself—the coalescence of these elements—that must be the focus of an adaptationist analysis.

Evolutionary Signaling and Religion

From an adaptationist standpoint, the most striking feature of any religious system is its costs. This is particularly noticeable in terms of the ritual practices that throughout the world are often torturous and terrifying (Glucklich 2001). For instance, consider just a few of the initiation ceremonies historically performed by Native Americans: Apache boys were forced to bathe in icy water, Lui seño initiates were required to lie motionless while being bit by angry hordes of ants, and Tukuna girls had their hair plucked out. Of course, not all communities demand such sacrificial behavior of their members. Indeed, the most common religious activities in Western world religions, namely, prayer and scriptural study, are comparatively benign compared to the above rituals. It deserves mentioning, however, that even in religious communities that place few demands on their adherents, religious activities still require time and energy; time and energy that will not be available for other more “productive” activities.

But this begs an important question: Why is there so much variance across religious communities with regard to the costs imposed on adherents? Furthermore, what are the determinants of this variance? In trying to understand why selection would favor costly religious behaviors, evolutionary scholars have drawn upon two main insights from cultural anthropology, which we address briefly here.

Firstly, anthropologists have often approached religion as a form of communication (Evans-Pritchard 1956; Leach 1976; Luhmann 2000), typically viewing ritual as the primary expression of religious belief. However, it was not until anthropologist Roy Rappaport’s pioneering work (1968, 1979, 1999) that ritual was clearly shown to be a unique form of communication. Based on his ethnographic accounts of the Maring of New Guinea, Rappaport demonstrated that rituals serve as a non-linguistic mode of expression, insofar as the ritual act itself conveys and instills social conventions among members of a community. This is because participating in ritual is equivalent to accepting what it represents, which, for Rappaport, is commitment to the community and its social way of life. As such, rituals serve as the very foundation of society, and even the origin of the social contract (Rappaport 1999: 132).

Secondly, while researchers have long maintained that religion promotes group solidarity (Durkheim 1995 [1912]; Hechter 1988; Redekop 1967; Turner 1969), it is Durkheim’s key insight into the nature of

social life that remains a central tenet for the anthropology of religion. That is, because we are born into groups, we develop an underlying sense of the basic social structures that promote group solidarity. For instance, we learn through enculturation to abide by the general morals and legal traditions of our group, not only to avoid punishment, but because we often benefit from harmonious social operations. Recognizing this, Durkheim argued that from a social scientific perspective, the primary characteristic of religion is not supernatural belief, but rather collective behaviors that serve the needs of the group. After all, seemingly religious behaviors such as worship services or rituals are actually social behaviors, which, through collective effervescence, reinforce group solidarity. This was made clear by Durkheim's analysis of totemism among the Australian Aborigines, where he showed that the totem is at once the symbol of god and society—just as, for instance, the cross represents Christ and the Church for Christian communities. Thus, when individuals collectively served the totem, they inadvertently served the group, thereby strengthening its underlying social structures.

For evolutionary scholars, the above accounts highlight the fact that religion promotes communication and group solidarity. But these accounts alone are not entirely satisfactory for those who wish to understand religious behavior in terms of its evolution. To understand how natural selection could have favored ostensibly costly religious behaviors, evolutionary scientists have turned to evolutionary signaling theory (Cronk 1994a; Irons 2001), which aims to explain the adaptive value of signals used in animal communication (Searcy & Nowicki 2005). Of central interest to signaling theorists are the conditions under which selection will favor reliable and deceptive signals respectively. Based on costly signaling models, communication between individuals with conflicting interests can be reliable when there is a link between the quality of a signaler and the signal being produced, which typically depends on the cost of the signal. Under conditions where the signal is costly to produce, selection can favor those whose qualities enable audiences to reliably discriminate between honest and dishonest signalers. As a result, natural selection provides the means to discriminate by exacting demands that are more costly to low quality signalers than they are to high-quality ones (Grafen 1990; Zahavi & Zahavi 1997). For instance, numerous reliable signaling systems have evolved—such as the stotting of Thompson's gazelles, the plumage of peacocks, the frequency calls of frogs, and so forth—that involve organisms which possess the energetic resources to display signals that are too hard-to-fake for those with low energetic resources. Put concisely, signals expressing phenotypic condition can be honest if the costs to lower quality individuals of imitating the signals of higher quality individuals outweigh the benefits that can be achieved.

Applying these insights from evolutionary biology and cultural anthropology, evolutionary anthropologists Lee Cronk and William Irons, began to investigate religion as an evolved and dynamic signaling system. Irons (2001) argued that the costliness of religious behaviors enables them to serve as honest signals of commitment to the group. This is because only those who are committed to the group's beliefs and goals will be willing to incur the time, energy, and opportunity costs of such actions. The solidarity created within religious communities enables them to offer community members significant benefits, including social networks, insurance, materials, and even marital partners. These benefits, however, can be exploited by free-riders who are not committed to the community, but nonetheless reap the group's benefits. To avoid the free-rider problem, communities must therefore impose a cost on potential group members. Accordingly, religious performance serves to demonstrate

an individual's commitment and loyalty to the group, thereby allowing them to benefit from the social and material resources it offers.¹

On the Naturalness of Religion

The salient point that emerges so far is that evolutionary scholars seek to describe religion in natural terms. But the word *natural* among evolutionary scholars remains ill-defined, unless we cling to the preconception that whatever science investigates is simply natural. Thus the meaning of the term is an open question. Of course, there is a prevailing definition in philosophy, which centers on the concept known as ontological naturalism, the view that the real world is nothing more than the physical world—that is, the objective world around us is causally closed to physical antecedents and physical consequences (Armstrong 1981; Kim 1998; Lewis 1972; Papineau 1993, 1998). While most evolutionary scientists embrace such a perspective, they operate on a slightly different conception of *natural*, which is best described as methodological naturalism: the view that metaphysical commitments of any kind outside of logical analysis and empirical data have no place in science, for science adopts no attitude toward the phenomena it investigates (Draper 2005). If that is right, then a definition of *natural* for many evolutionary scholars is simply the commitment to the scientific method. For the study of religion, however, it is necessary to turn basic definitions like these, in which *natural* is a methodological assertion, into a defensible understanding of religious behavior as natural phenomena. In this section, we wish to examine McCauley and Barrett's novel approach to explaining the naturalness of religion. After discussing their view, we will briefly provide our own take on the matter.

Drawing on McCauley (2011), Barrett (this volume) defines naturalness as “thought processes or behaviors that are characterized by ease, automaticity, and fluency.” To illustrate, we must first explain McCauley's position, which distinguishes between two basic types of naturalness: maturational and practiced naturalness. Maturational naturalness arises as a natural consequence of normal development, such as learning to walk or talk. Practiced naturalness, on the other hand, arises not through the normal course of physical and psychological development, but rather through repeated practice and training, such as learning to play a musical instrument. Barrett (presentation, May 4, 2011) further clarifies that maturational and practiced naturalness should be considered along a continuum. At one end of the continuum are maturationally natural behaviors, such as walking, which require little environmental input. At the other extreme are practiced behaviors, which Barrett refers to as expertise, that require extensive training, such as science.

Barrett argues that religion lies toward the maturational end of the naturalness continuum. To defend his view, Barrett relies on an emerging set of studies (e.g., Atran 2002; Barrett 2004; Boyer 2001), which indicate that core elements of religious expression—such as supernatural agent beliefs, teleological reasoning, and afterlife beliefs—are the natural outcome of normal cognitive development. Barrett comments that: “The regularity and early development of maturationally natural capacities make me think these capacities map on to what we normally think of as part of human nature or as natural cognition.” While we also find this outlook and the accumulated body of research undergirding it compelling, we suggest that religion actually lies more toward the practiced end of the naturalness continuum. In what remains of this section we defend this view.

¹ For more detailed accounts of the application of costly signaling theory to religion see Bulbulia (2004a,b, 2009), Bulbulia and Sosis (n.d.), Schloss (2008), and Sosis (2003, 2005, 2006).

To begin, we agree with Barrett (2000, 2007) that the cognitive structures which produce religious concepts—hypersensitive agency detection device, theory of mind, mind-body dualism, and so forth—are indeed at the foundation of religious thoughts and behaviors. These are essential ingredients of what we call the *religious system*, that is, the recurrent set of core religious elements on which selection operates. But the underlying cognitive structures of religion comprise only the seeds that provide the potential for the system. After all, theory of mind, mind-body dualism, and other cognitive features are necessary but not sufficient to produce religion. To be sustained across the life course and across generations, religious beliefs require reinforcement, and religious behaviors require practice. Therefore, without further qualification, we doubt that religious behaviors are “nearly inevitable” (Barrett, this volume): religious expression requires cultural inputs and cultivation, not just cognitive potential. Whether one believes in Zeus, Vishnu, or Allah will depend on the cultural environment in which one was raised. But exposure to these supernatural agents is not enough to generate commitment to them. What does? Adherents throughout the world believe in their gods and not other people’s, regardless of exposure, because adherents perform rituals for their particular deities (Alcorta & Sosis 2005). In other words, while humans possess the cognitive machinery to believe in gods, the particular gods that humans commit to requires cultivation. In this regard, belief is not automatic but rather achieved through ritual behaviors, such as supplications to a particular god, ritual presentations of myth, ascetic practices, and healing ceremonies, all of which instill an experience of what religious persons would call the “sacred.” This notion is aptly expressed by Karen Armstrong: “Religious discourse was not intended to be understood literally ... People were not expected to “believe” in the abstract; like any mythos, it depended upon the rituals associated with the cult of a particular holy place to make what is signified a reality in the lives of participants” (2009: 15). That is to say, religious practices are technologies that are critical for performers to understand and experience their community’s shared religious outlook.

In terms of cultivating religious experience, religious ritual is universally used to identify the sacred, and in so doing separate it from the profane (Durkheim 1995[1912]; Eliade 1959). As Durkheim (1995 [1912]) argued, the sacred emerges through ritual and reflects issues concerning the social order, such as group interests and welfare amid the threats and uncertainties of the universe, which take on a seemingly cosmic significance in light of religious discourse. On the other hand, the profane centers on the issues of the individual, such as the daily routines of work and consumption. Additionally, as noted by Rappaport (1999), ritual does not merely identify that which is sacred—it *creates* the sacred. For instance, holy water is not simply water that has been discovered to be holy, or water that has been rationally demonstrated to have special qualities; it is rather water that has been *transformed* through ritual. This is because the sanctifying ritual of holy water collectively alters the participants’ cognitive schema of water itself, rendering them with a template for differentiating holy water from profane water. Most importantly, from a behavioral perspective the emotional significance of sacred and profane water is quite distinct: not only is it inappropriate to treat holy water as one treats profane water; it is emotionally repugnant to do so. The central point can thus be summarized. While religious adherents differentiate sacred and profane things, their cognitive discrimination would be empty without having an emotional reaction to the sacred (Alcorta & Sosis 2005); for it is the emotional significance of the sacred that underlies “faith”, and it is ritual participation that invests the sacred with emotional meaning.

Though we return to signaling theory in the next section, it is also worth pointing out here that costly signaling is central to cultivating religious experience. This is due to the fact that ritual technologies, which separate the sacred from the profane and invest emotional substance into otherwise arbitrary symbols, are often purposefully difficult to perform. Specifically, they are physically demanding, time

consuming, and oftentimes dangerous. While the cognitive foundations of these behaviors may be maturationally natural, it would be inaccurate to describe such behaviors as “natural” in McCauley’s sense of the term; that is to say, as “easy, automatic, or fluent.” Armstrong, for example, describes how the “yogin had to do the opposite of what came naturally. He sat so still that he seemed more like a plant or statue than a human being; he controlled his respiration, one of the most automatic and essential of our physical functions, until he acquired the ability to exist for long periods of time without breathing at all” (2009:21). And ritual performers recognize the difficulty in carrying out their ritual routines. As one Chasidic Jew informed Sosis during his fieldwork in Israel, “Do you think keeping these *mitzvot* is easy? It’s hard work doing God’s commandments!” (Sosis 2009b: 200). With regard to the naturalism spectrum, such behaviors do not come with ease, automaticity or fluency, and thus they are best characterized by the practiced rather than maturational side of the continuum.

Nonetheless, while we wish to emphasize the importance of cultivation in the development of religious beliefs and commitments, we are not claiming that religious expression is at the far *practiced* end of the naturalness continuum, which is inhabited by activities such as science and chess mastery. These are activities that seem to be at odds with our natural cognition, given the immense effort they require. Consider, for example, the challenge of acquiring statistical expertise. Statistical reasoning appears to conflict with fundamental cognitive algorithms to such an extent that even researchers, including those who regularly employ statistical models in their own work, frequently consult statisticians for advice. Of course, such difficulties are consistent with what we know about our evolved minds. As shown by Gigerenzer and Hoffrage (1995), humans have difficulty with Bayesian reasoning when data are presented as probabilities; but when presented as frequencies, Bayesian problems are much easier to solve. Accordingly, our minds are designed to handle and manipulate frequency information, because frequency formats correspond to the sequential way information has been naturally acquired throughout our evolutionary history. Extensive training is thus necessary to attain statistical expertise, for our cognitive algorithms are not naturally consistent with Bayesian reasoning. We fully recognize that statistical reasoning is different from religious cognition. Where the former requires overriding or circumventing normal cognition, the latter requires moderate cultivation to nurture underlying cognitive propensities. This is witnessed by the fact that religious systems everywhere involve the same modes of human cognition, such as the penchant for beliefs in the afterlife, magical causation, and supernatural agents (Pyysiainen 2004). At any rate, although religion may not be at the far *practiced* end of the naturalness continuum, we wish to stress that it still requires repeated articulation and performance to manifest itself in human communities.

This leads us to a final point on naturalism. Following McCauley, Barrett claims that maturational naturalness is characterized by a lack of variation within populations, whereas practiced naturalness is marked by high variance in expertise. To illustrate, while most human beings learn to walk in the same manner, they rarely learn the same trades or talents in nearly identical ways. We, therefore, agree with Barrett that the cognitive foundations of religious beliefs are universal and lack significant variation within and across populations. However, we contend that populations exhibit high levels of variance in religious expression, as countless ethnographies have shown, which is precisely what we would expect if practiced naturalness characterized religion. Even in highly religious communities variation is evident, although it tends to be underappreciated by outsiders who see people dressed similarly and performing the same rituals. Insiders, however, seem to be well aware of such variation (Heilman & Cohen 1986; Sosis unpublished data). And there is good reason for group members to pay close attention to internal variation: an individual’s deviation from community norms indicates deficient group commitment. Evolutionary signaling theory suggests that this variance in belief and practice is likely to have fitness

consequences—a topic we would like to address briefly before concluding this discussion on naturalness.

Signaling Theory and Practiced Naturalness

In a brief commentary on group selection, anthropologist Lee Cronk raised an intriguing evolutionary puzzle: “Considering the phenomenal reproductive rates of Hutterites, the real mystery for evolutionary biology is why the rest of us are not trying to join their colonies” (Cronk 1994b: 615). Indeed, given the extraordinary reproductive success of Hutterites (Cook 1954; Eaton & Mayer 1953; Tietze 1957), and provided that natural selection designed us to maximize our fitness, why are most of us unwilling to pay the costs of joining the Hutterites to achieve these reproductive gains? In considering this question, let us consider first the costs and benefits of the Hutterite lifestyle. Hutterites engage in a variety of ritual practices, such as fasting, daily church worship, and thrice-daily communal meals that are preceded and followed by prayer. They also face a wide assortment of restrictions on their behavior, such as prohibitions on owning or using musical instruments, radios, jewelry, tobacco, and other material items. Additionally, dancing and gambling are also forbidden, and colonies impose constraints on contact and communication with non-Hutterites (Hostetler 1997; Janzen 1999; Wilson 2000). Collectively these requirements of the Hutterite lifestyle are rather costly (Sosis & Bressler 2003), but presumably these costs have few, if any, negative impacts on their fertility. Furthermore, while Hutterite rituals are often costly, nonbelievers *can* perform them, which raises additional inquiries. If membership in a group that requires ritual practices genuinely results in net fitness gains, why do others not simply perform the rituals required for membership, even if they do not believe the doctrine that gives meaning to the rituals? If the net gains from joining a group outweigh any ritual costs that are required to join the group, how do the costs of the ritual practices serve as deterrents of free-riders who do not believe in the teachings of a religion? Conversely, if rituals must be costly enough to prevent free-riders from entering a population, why is it beneficial for anyone to pay the costs of group membership?

The answer to these questions is straightforward: Hutterites are Hutterites and we are not because of fundamental differences in how we were raised. We are not Hutterites because we do not believe in the teachings of the Hutterites, and the only way to perceive the *net* in-group benefits of the Hutterites is to truly believe in their way of life. This of course begs the question of why we do not believe in Hutterite theology. It seems that the only way to achieve such devoutness is to actually live like a Hutterite *and* initially possess either beliefs similar to their own or highly ambiguous ones. Otherwise, simply attempting to observe Hutterite religious obligations will be perceived as too costly, and hence will be avoided or discontinued if attempted. In other words, there are genuine gains to be achieved by joining the Hutterites, but without “belief” our assessment of these potential gains suggests significant costs. Hutterites, on the other hand, are able to maintain their own faith, and consequently perceive short-term benefits, through the performance of the many rituals that fill their lives. Ritual performance during childhood minimizes the opportunity costs perceived by group members later in life, increasing their ability to tolerate costly constraints on their lives. As a Hutterite man from Montana commented, “It seems you have to be born with the Hutterite way, to be brought up from childhood on, to abide by these rules ... If you are brought up like this, you’re not used to all these things you see in town” (Wilson 2000:22). As the Hutterite example indicates, ritual performance fosters and maintains religious beliefs, and beliefs in turn enable rituals to be effective signals of commitment by lowering the perceived costs of ritual performance, thus preventing free-riders from gaining the benefits of religious groups. Accordingly, religious belief is undoubtedly important for group membership, but belief itself is a proximate mechanism that facilitates the production of adaptive ritual behaviors.

To summarize, Barrett places religion toward the maturational side of the naturalness continuum whereas we have argued that religion lies toward the practiced end of the continuum. This difference in perspective is primarily a function of our respective disciplinary trainings and affiliations. As a cognitive scientist, Barrett is interested in uncovering the universal cognitive architecture that produces religious beliefs. Thus, Barrett perceives religion lying toward the maturational end of the naturalness continuum because he is focused on the cognitive mechanisms producing religious beliefs and behavior; and it is indeed the case that our cognition naturally produces religious expression. As evolutionary anthropologists we are struck by the extraordinary plasticity of human behavior in contrast to other organisms. Consequently, we perceive religion lying toward the practiced end of the naturalness continuum because our attention is focused on the diversity of religious expression and how religious behaviors are critical for forming and sustaining belief and commitment.

Implications for Religious Freedom

In the last section it was argued that religion entails both cognitive tendencies and ritual behaviors, which together make the cultivation of religious belief a form of practiced naturalism. Our present concern is whether this naturalness bears on religious freedom. In particular, the question we wish to consider is: If religion is a natural part of what it means to be human, as it seems to be, does it deserve special protections for free expression? To answer this question, we suggest that several factors related to religious freedom must be kept in mind, including the place of religion in liberal democracies, the implications of the naturalness thesis for religious freedom, and the distinct boundary between scientific description and normative prescription. Based on these factors, the suggestion to be put forward is that CESR cannot directly speak to religious freedom, but it may be able to shed light on sacred and secular values, thereby helping others understand the pervasiveness of religious practices and the systemic nature of religious systems.

When discussing religious freedom, it is important to recognize that we are generally speaking from the perspective of a liberal democracy. This is not to say that religious freedom does not exist outside of such a political system, but rather that, on the world stage, it is a value that emerged with—and continues to be defended by—liberal democracies. As such, religious freedom holds a special place in the West because it goes hand-in-glove with the fundamental legal right to political freedom. That is, the freedom to seek, receive, and share information and ideas, which include the right to vote, hold office, petition the government, and participate in religion as one sees fit (Perry 1998, 2010). Religious freedom is included with these other political rights not because it is natural and thus self-evident, but because the history of Western governments imposing a single religion on its people has always resulted in political turmoil (Laycock 1996). When James Madison and Thomas Jefferson articulated the legal conception of religious freedom, they did so not in the name of natural law but on behalf of the commonwealth; for the choice to enact a ban on imposing a statewide religion serves a governmental interest: namely, political order. In his analysis of failed governmental attempts to establish a single religion, legal scholar Michael Perry (2010: 76-77) expresses the notion in this way: “government is not to be trusted as an arbiter of religious (or anti-religious) truth ... As Locke put it, ‘the business of laws is not to provide for the truth of opinion, but for the safety and security of the commonwealth, and every particular man’s goods and persons.’” Religious freedom is therefore protected in liberal democracies because it is practical to do so, as attested by history.

Moreover, although religious freedom may be a category restricted to legal rights, liberal democracies and many religious faiths, at their core, seem to express the same philosophical value: that human beings possess inherent dignity (Perry 2010). In other words, liberal democracies and most religious faiths recognize that human beings have an inherent value, which has a normative force that compels individuals and governments to treat human beings with respect. Furthermore, both religion and democracies design rules and guidelines to protect human beings accordingly. Even though both systems often find ways to overlook that value, they nevertheless share a common ground by valuing dignity, a ground that is also shared by international human rights.

With these caveats in mind, we entertain the notion that discoveries in CESR may impact religious freedom. One could develop an argument for protecting religion in light of its naturalness. Specifically, if religion lies on the maturational side of the naturalness continuum, then one could argue that religious expression deserves protection. That is, international law safeguards many human rights because they are in fact basic rights (Shue 1980), meaning that they are natural to human life and thus inherent to all other freedoms. For instance, it is maturationally natural for human beings to defend their life, to avoid slavery or servitude, to object to torture and cruelty, to abhor arbitrary confiscation of property, and to eschew several other violations and to endorse many more freedoms. With each, it seems that being maturationally natural is an element of basic human rights, which receive protection under international law. If so, then religious expression is equally deserving of absolute protection.

Is the above argument sound? That is to say, can religion be protected along the same lines as other basic rights? We suspect not for at least two reasons. First, even if religion lies on the maturational side of the naturalness continuum, as Barrett and McCauley contend, it is not at the far end of the continuum with other basic human rights. The right to freedom from torture, the right to water, and so forth, are basic rights insofar as other rights cannot exist without them. In other words, it is literally self-defeating to hold that human beings possess rights of any kind without ensuring that their basic rights are protected (Shue 1980). We observe that religious freedom is indeed a right—a human right—but it is not a basic right; for other rights can be enjoyed without it. Second, we contend that the political freedom to religion could be on slippery ground if it were ever justified by naturalness. This is because scientists will most likely continue to find evidence for and against where religion lies on the naturalness continuum; but the freedom to religious expression should not wax and wane with the discoveries of science—it is a legal right to political freedom, not a scientific concept subject to discovery.

Moreover, if religion lies on the practiced end of the continuum, as we have argued, it is difficult to see how its naturalness could justify protection. Similar to religion, there are countless activities that build upon natural cognitive mechanisms, but these require practice to gain expertise, thus rendering them forms of practiced naturalness. Just to name a few, these activities include gambling, dancing, playing an instrument, mastering a craft, and excelling at sports. However, unlike basic rights, these activities are rarely protected by societies, because they are not basic human needs. What makes religion different from these activities is that it has a long history of being abused by governments. Perry puts the point succinctly: “This, then, is the fundamental warrant for liberal democracy’s commitment to the right to religious freedom: Political majorities are not to be trusted (i.e., beyond a certain point) as arbiters of religious truth; moreover, the coercive imposition of religious uniformity is (beyond a certain point) more likely to corrode than to nurture the strength of a democracy. The warrant, which is rooted in historical experience, is fundamental in the sense that it is ecumenical: Both citizens who are religious believers and those who are not can affirm the warrant. And that the warrant is ecumenical is ideal: Liberal democracies are religiously pluralistic” (2010: 79). Accordingly, liberal democracies seek to

protect religious expression, a form of practiced expertise, because the varieties of human experience produce countless forms of religious belief, which, arguably, cannot be falsified. It is thus arbitrary for any majority to impose the supposed truth of its religious beliefs on others. We do not see how the science of practiced naturalness could speak louder than history or philosophy when it comes to this issue.

A final point: the descriptive endeavors of science can rarely speak to the prescriptive enterprise of ethics or law. For that reason, it is important to emphasize that there is a yawning explanatory gap between what *is* according to science, and what *ought to be* according to ethics and law. To be exact, the protection of religious freedom—what ought to be—cannot be derived from the adaptationist analysis of religion—what is. Even if religion provides adaptive benefits in the form of positive health outcomes (Koenig et al. 2001) and facilitates collective action (Soler 2008; Sosis et al. 2007; Sosis & Ruffle 2003, 2004), it still does not tell us how religion ought to be handled in liberal democracies. Moreover, determining that a trait is adaptive does not imply that the trait is ‘good’ or offers individual or societal benefits worth protecting. Under conditions of extreme resource stress, for example, infanticide is likely to be adaptive (Hrdy 1999), but few would claim that it deserves protection. In the same way, the adaptive value of religion ultimately says little about whether we ought to protect religious freedom.

Sacred versus Secular Values

But does the naturalness thesis have any significance regarding problems of religious freedom? Barrett (this volume) explores the implications of the naturalness thesis for two issues: complete freedom of religious expression and disallowing any religious expression. Rather than focus on these extreme conditions, here we examine the gray areas where sacred and secular values conflict. There are several related but separable issues that could be raised, but we focus on just one: Can CESR help to resolve sacred and secular conflicts? To make progress on that question, let us first consider several examples where basic religious activities conflict with the expression of secular values.

In April 2011, the New York Times reported that Hindu communities in Queens, New York were using the bay in Gateway National Recreation Area for religious ceremonies, including births, deaths, and festivals (Dolnick 2011). The water of the bay is believed by local Hindus to possess healing powers that can cure sickness, pain, and suffering. But unlike the Ganges, where Hindus traditionally perform religious rites, the enclosed bay does not sweep away refuse. Consequently, park rangers have been finding the remains of Hindu rites on the banks of the bay, such as clothing, statues, coconuts, and clay bowls. Furthermore, during cremation ceremonies human ashes are tossed into the bay. Park rangers and conservationists are of course concerned about the environmental impact of performing these religious rites in a fragile ecosystem.

The Jewish holiday of Hanukkah offers a second example. In 2007 an Israeli environmentalist organization launched a “Green Hanukkah” campaign in which they encouraged Jews to light seven rather than eight candles during the ‘festival of lights’ (UPI 2007, Dec 5). In an extensive Internet campaign, environmentalists argued that every candle produces 15 grams of carbon dioxide and thus the millions of Jews celebrating Hanukkah over eight days were ‘irresponsibly’ contributing to global warming. Similar concerns have been raised by American environmentalists over the energy costs of fueling Christmas lights.

However, not all conflicts between religious and secular values involve environmental issues. Jehovah's Witnesses have been at the center of numerous court battles concerning conflicts between their beliefs and secular values. Witnesses, for example, have refused to salute to the American flag, which they believe would constitute idolatry, and in a 1943 decision (*West Virginia State Board of Education vs. Barnette*) Witnesses were granted the right to refuse to salute the flag and recite the Pledge of Allegiance. A more recurrent conflict centers on battles over their right to refuse blood transfusions, which are prohibited by their faith because it is equated with drinking blood. Their right to refuse blood transfusions, even if it means certain death, has been upheld in numerous court cases. In a recent lawsuit (April 2011) a court ordered the state of Kansas to provide, at considerable expense, a bloodless liver transplant for a patient based on her beliefs as a Jehovah's Witness (Melton 2011).

The courts, of course, have not only handled sacred and secular conflicts among Jehovah's Witnesses. For example, in 2009 eleven Old Order Amish families filed a religious discrimination lawsuit against the town of Morristown, New York (AP 2009, Jan 9). The families were denied building permits by the town because they refused to abide by established building codes that conflicted with their religious restrictions on the use of electronic appliances. The town, for example, demanded full compliance with fire codes, but the Amish families contended that their faith did not allow electronic smoke detectors in their homes.

Before considering what CESR can do in these situations, it is worth considering what it cannot do. In line with what we have argued throughout this paper, CESR cannot adjudicate such conflicts, because it employs methodological naturalism not as a way of discerning matters of value, but as a way of acquiring knowledge. Methodological naturalism in this regard is simply an epistemic outlook, which presumes that all phenomena can be impartially studied using the systematic methods of observation, testing, and replication (Kurtz 1990). Because methodological naturalism attempts to eliminate from science the influence of human biases—such as religious and moral beliefs—it is widely considered the most objective way to study the natural world. Hence, an embracement of it is the surest way for CESR to maintain acceptance as a viable science among the greater scientific community. To offer judgments on conflicts of value, then, especially in the name of naturalism, would not only breach the is-ought barrier, but also pose a risk to the objectivity and credibility of CESR.

In spite of our numerous caveats and objections, we think that CESR does have something valuable to contribute: the resolution of conflicts between sacred and secular values. How so? One causal factor that pervades most conflicts between the religious and secular, as in most disputes, is a lack of understanding and appreciation for the beliefs and behaviors of the opposing side. Suggesting that observant Jews, for example, should light one less candle during Hanukkah indicates a complete lack of understanding and appreciation for the conviction of religious beliefs and practices. If CESR can offer anything in such a dispute, it is the explanation of religious beliefs and behaviors in materialist terms. Of course, CESR theories and data are unlikely to be satisfying for many religious adherents, because they fail to capture the depth of meanings in their convictions. CESR research, however, at least may help religious adherents understand how even secular values can be sacralized by secularists and evoke strong commitments (Tetlock 2003). More importantly, though, CESR interpretations of religion are likely to provide satisfying materialist explanations for secularists. Above all, CESR should not aim to justify such beliefs and practices, but with an appreciation for why humans possess such strong convictions for religious beliefs, it can hopefully open up a fruitful dialogue to facilitate conflict resolution.

On Religious Systems

Coming full circle, we conclude our discussion of religious freedom with a brief examination of the adaptive nature of religion and its implication for society writ large. One of the most important aspects of CESR research is understanding religion as an adaptive system (Alcorta & Sosis 2005; Purzycki & Sosis 2009; Sosis 2009a; Sosis et al. n.d.). Religious systems are dynamic and complex. We have little understanding of how the feedback mechanisms of religions operate, but religious systems are clearly organic—that is, they are signaling and self sustaining processes (Rappaport 1968, 1999). Altering one part of the system, then, will likely have significant effects on other parts; but those effects are difficult to predict even for those most familiar with the system, such as religious leaders. To illustrate, sociologists Rodney Stark and Roger Finke (2000) have argued that when the Second Vatican Council in 1962 repealed many of the Catholic Church's prohibitions and reduced the level of strictness in the church, it had unforeseeable consequences. Presumably, the Vatican Council was an attempt to regain the commitments of wavering Catholics, but it inadvertently initiated a decline in church attendance among American Catholics, and reduced the overall enrollments in seminaries. Indeed, in the late 1950s almost 75 percent of American Catholics were attending Mass weekly, but since the Vatican's actions there has been a steady decline to the current rate below 35 percent (D'Antonio et al. 2007; Hadaway & Marler 2005). Such impacts are not exclusive to the Catholic Church. A similar reduction in commitment followed the purging of ritual obligations in Reform Judaism as well (Iannaccone 1994; Lazerwitz & Harrison 1979). Though many other instances could be referenced, what these two examples illustrate is that religions grow organically—from the bottom up; and thus tampering with them can result in unexpected changes, even stunted growth or collapse.

Viewing religion in this light has implications for sacred versus secular conflict. External secular pressures that aim to change religions sometimes result in dangerous consequences. For example, religious radicalization, such as the emergence of the Muslim Brotherhood in Egypt, Turkey, and elsewhere, appears to be a response to aggressive secular campaigns (Armstrong 2000; Ruthven 2004). If so, minimizing religious extremism in the future may require secularists to countenance religious traditions, and design policies accordingly. This will not be easy, for even externally imposed changes that are intended to benefit religious communities can have long-term negative consequences. For example, on March 3, 1948, during a period of civil war prior to the Israeli War of Independence, Ben Gurion established a military exemption for yeshiva students. His motives have been debated ever since, but he presumably felt he was saving a cultural remnant of European Jewry that was otherwise headed toward extinction with the birth of the secular Israeli state (Efron 2003). As the yeshiva population has grown exponentially because of the extraordinary birth rates of Israeli Ultra-Orthodox Jews, not serving in the military has emerged as a costly signal of one's commitment to the community. For Jewish Israelis, not serving in the military is a stigma with consequences in the labor market. But this stigma serves as a gatekeeper within the religious community: one way of demonstrating one's commitment is staying in yeshiva not just until the possibility of being drafted has passed due to age, but even several years after one is eligible for the draft (Berman 2000). As a result, Yeshiva students and their families are exceedingly poor, because under the terms of their military exemption they are only permitted minimal employment. Due to their lack of understanding how the military exemption has been transformed into a religious commitment signal, the government has attempted to alleviate the financial plight of these yeshiva students by increasing their subsidies, but this has only exacerbated the problem (Berman 2009). By increasing payments to yeshiva students, the government has increased the amount of time yeshiva students must remain in the yeshiva to serve as an effective signal of commitment. In short, the government subsidies have effectively decreased the costs of the signal.

These examples provide strong cautioning against tampering with religions, as if they were simple ways in which people view the world. CESR is finding that religion is much more complicated than is generally appreciated. It is safe to say that like other systems in nature, religion is dynamic, emergent, and unpredictable. By recognizing religion as a complex adaptive system, it is our hope that scholars and policy-makers appreciate that if there are compelling reasons to control or reform religion, we currently have little understanding of how to do so, and naïve policies seeking change are likely to have unintended consequences.

Conclusion

In this paper, we argued that the cognitive and evolutionary sciences of religion do not provide theoretical or empirical support for the protection of religious freedom. Our contention was not that religious expression should go without protection, but rather that the findings of CESR do not provide support for the political right in question. Nevertheless, we suspect that research on religious markets may offer relevant and supportive data for religious protection. We wish to conclude our discussion by briefly pursuing this line of thought.

There is considerable debate among sociologists and economists regarding the effects of competition on the strength and health of religions. It has been argued that when religions enjoy an open competitive playing field they are responsive to the demands of religious consumers, improving the quality of what they offer, and thus increasing religious activity and commitment. On the other hand, where religious monopolies eliminate or minimize competition, religions fail to adapt to current needs: in short, they become stagnant and obsolete. The relatively high levels of religiosity in the United States, and low levels of religiosity in Western Europe, are often cited as support for this interpretation of the religious marketplace (Iannaccone et al. 1997). But state-sponsored religious monopolies that enjoy privilege not only foster religious lethargy, but also create environments that are ripe for religious extremism. As Iannaccone notes, "Genuinely violent sects tend to arise in countries where the civil government has suppressed religious freedom, favoring one form of religious expression over all others. Within these environments, an unfavored sect is strongly motivated to despise the established religion, and covet the privileges that come with state support" (1999: 23). In contrast, where religions can compete freely for members, violent religious extremism is rare. Indeed, Iannaccone and Berman observe that "the most striking feature of American sects may well be their near total lack of militancy" (2006: 122).

If this understanding of religious markets is correct, it would seem to provide a strong argument in support of special protections for the freedom of religious expression. We would add, from a selectionist perspective, that the benefits that a religion can offer will be critical to its health and adaptability (Sosis and Bulbulia n.d.). The primary benefits that most religions confer on members, and protect from potential free-riders, derive from social networks that provide mutual insurance. If governments can provide such a safety net for its citizens, even when there is a state-sponsored religious monopoly, it can minimize the threat of violent religious extremism.

Darwin, in reference to the theory of natural selection, concluded in the final passage in *On the Origin of Species*, "There is grandeur in this view of life..." (Darwin 2005[1859]: 601). We entirely agree. We wish to conclude, then, by emphasizing that the cognitive and evolutionary perspectives do not trivialize religion, explain it away, or attempt to dismantle it. Rather, CESR can lead to a new appreciation of religion. While we doubt that a defensible argument can be built from CESR research that religious

freedoms deserve special protections, we do believe that CESR research can help facilitate understanding and appreciation of religion, which can only help to resolve conflicts where religious freedoms are challenged.

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