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# The cognitive science of religion: Implications for morality

A ciência cognitiva da religião:  
implicações para a moralidade

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## ABSTRACT

A cognitive scientific approach to religion reveals the moral role of religion in human evolutionary history and provides insight into the continuing influence of religion in human affairs. While morality can be understood and justified apart from any religious foundation, religion cannot be separated from its moral function. After setting out the evolved cognitive bases of religious beliefs and behaviors, a model for the nexus between religion and morality is developed. From this it follows that religions constitute moral worldviews that emerge from and tap into deep moral and emotional instincts. This makes religion, and moral worldviews more generally, profoundly important, but also makes them dangerously problematic. A case study of the intersection of religion, race, and politics in contemporary American presidential politics will be used to explicate these ideas.

**Keywords:** religion, morality, cognitive science, evolution, worldviews.

## RESUMO

Uma abordagem científica cognitiva da religião revela o papel moral da religião na história evolutiva humana e fornece insights sobre a contínua influência da religião nos assuntos humanos. Embora a moralidade possa ser entendida e justificada à parte de qualquer fundamento religioso, a religião não pode ser separada de sua função moral. Depois de estabelecer as bases cognitivas evoluídas de crenças e comportamentos religiosos, um modelo para o nexo entre religião e moralidade é desenvolvido. A partir disso, segue-se que as religiões constituem visões de mundo morais que emergem e instigam instintos morais e emocionais profundos. Isso torna a religião, e as visões de mundo morais mais genéricas, profundamente importantes, mas também as torna perigosamente problemáticas. Um estudo de caso da intersecção de religião, raça e política na política presidencial americana contemporânea será usado para explicar estas ideias.

**Palavras-chave:** religião, moralidade, ciência cognitiva, evolução, visões de mundo.

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## Introduction

The connection between religion and morality is often taken to be fundamental and necessary. A formulation attributed to Dostoyevsky concisely states this view: “If there were no God, then all would be permitted.” A cognitive scientific approach to religion and to morality, one grounded in an evolutionary context, supports the fundamental connection between the two, but reverses the dependency. It is more accurate to claim, *If there were no morality, then there would be no (need for) God*. From the perspective of the cognitive science of religion (CSR), religion is a product of human bio-cultural evolution that functions to meet social cooperation challenges that accompany increasing group size and complexity (e.g. Guthrie, 1993; Boyer, 2001; Bulbulia, 2004a; Barrett, 2004; Johnson and Kruger, 2004; Henrich *et al.*, 2010; Teehan, 2010; Norenzayan, 2013). In this sense, religion is a moral innovation and as such it is inseparable from its moral function. However, the converse is not true, i.e. we can have morality without religion, but we cannot have religion without morality. The goal of this essay is to provide the evidence and arguments to support this thesis.

Before we turn to that goal, we must stipulate what is intended by the terms “religion” and “morality.” Religion is notoriously difficult to define, but we need not enter into this debate here. For present purposes, we are concerned with “behaviors, badges, bans, and beliefs” (Sosis, 2006) that we would typically “deem religious” (Taves, 2009). Specifically, we will consider the generation of god-beliefs (where “god” represents any of the numerous supernatural entities found in diverse cultures, e.g. spirits, ghosts, demons, ancestor-spirits, etc.) and the ritualistic behaviors that incorporate/re-inforce such beliefs. Morality is to be understood in a comparably broad and general sense. It is not restricted to formal systems of ethics, or to axiology, but denotes all behaviors, attitudes, and beliefs that may be deemed prosocial.

## The priority of morality

Given this understanding of morality, we can see that morality predates anything that could be deemed religion. Prosociality is the defining characteristic of social mammals. Such creatures evolved the biological and neurological capacities for cooperative behavior as an adaptive response to the challenges of survival and reproduction. Humans are descended from a line of social mammals dating back tens of millions of years. While it may be argued that attributing anything resembling human morality to such distant ancestors is an inappropriate anthropomorphizing, these creatures—by definition—had evolved capacities allowing for the extension of cooperation to, at a minimum, near kin. That is, they had at least the primitive building blocks of morality. When we consider our extant relatives, we find these building blocks distributed widely across species of social mammals.

The most well-known examples come from the “higher” mammals. Empathy, fairness, reciprocal altruism, moral anger have all been documented in chimpanzees (de Waal, 2012; Brosnan and de Waal, 2014; Clay *et al.*, 2016). The last common ancestor of humans and chimpanzees dates back some 5-7 million years ago, indicating that these moral building blocks predate that split. Cetaceans, which diverged from the lineage that led to primates at a much earlier date, are also known to demonstrate empathy, fairness, and social complexity (Marino *et al.*, 2007; White, 2007). A bit closer on the evolutionary bush, but still further away than primates, are rats, and studies show even the “lowly” rat exhibits empathetic concern and helping behavior (QiLiang *et al.*, 2009; Bartal *et al.*, 2011). For social mammals, shared patterns of normative behavior make successful group living possible. Prosociality is for social mammals the defining adaptation.

As many of the core elements of human morality are found throughout social species, it may only be anthropocentrism that prevents us recognizing chimpanzee morality. However, one need not be anthropocentric to deny that there is anything that might reasonably be deemed chimp religion.

Since morality, from an evolutionary perspective, is an adaptive response to the challenges of group living, the more complex the group structure, the more developed and complex will the morality need to be. Humans live in the largest and most complex groups of any species on earth. There are, of course, much larger groups of organisms, the eusocial insects such as ants and bees come to mind. However, while such groups are larger than the typical group size for humans throughout most of our evolutionary history, they are relatively simple, with place and function in the social organization often determined genetically; and, significantly, such groups have high levels of genetic relatedness. No species lives in groups comprising so many non-kin, nor does any species possess the social fluidity and dynamics of even human hunter-gatherer societies. Consequently, humans and our direct ancestors faced more complex cooperation problems than any species of which we are aware. Meeting this challenge required sophisticated cognitive abilities, and indeed it is posited that the evolution of our brains, and particularly that of the neo-cortex, was driven by the need to successfully manage this social complexity (Dunbar, 1998; Dunbar and Shultz, 2007). For humans, as for social mammals in general, successful negotiation of the social environment is as essential to evolutionary success, on both an individual and group level, as survival and reproduction tasks. Developing systems for managing social complexity—i.e. morality—in a way that allowed for successful group action was the key adaptive advantage that allowed *homo sapiens* to achieve global dominance. Morality, understood in this way, is not simply a concern for humans, as a prerequisite for evolutionary survival, it is central to our nature.

## The evolution of religion

A key question that CSR seeks to answer in relation to belief in gods is not primarily “why do people (or particular individuals) believe in god(s)?”—how any one person comes to accept a specific religious belief is complex and highly idiosyncratic—but rather “how did humans (as a species) come to have the cognitive capacities that give rise to god-beliefs?” As such, CSR is necessarily grounded in an evolutionary context, and the basic approach is to understand what cognitive strategies would have provided our ancestors with an advantage in the struggle for evolutionary success. Such an approach, however, does not constitute an act of constructing so-called “just so stories.” It is rather a process of abductive reasoning based on empirical evidence about human psychology provided by contemporary cognitive science, neuroscience, behavioral economics, etc., in conjunction with a reconstruction of the relevant environment of evolutionary adaptation based on evolutionary biology, paleontology, archaeology, and anthropology.

The implicit model of the evolved mind employed by CSR treats cognition as enactive.<sup>2</sup> Enactive cognition sees the mind functioning to bring forth from the environment that information salient to the organism’s goals; in this case, those of evolutionary success, i.e. predator avoidance, resource acquisition, detection of prey, etc. (Varela *et al.*, 1991; Stewart, 2010). This approach is captured succinctly by Stewart Guthrie: “Perception is interpretation” (Guthrie, 1993, p. 41). Guthrie continues:

*If perception requires choosing among interpretations and therefore requires betting, and if the payoff is discovering significance, then the first bets to cover—those with the biggest payoff—are bets as high on the scale of organization as possible. The discoveries of order they yield are those we most need. Some such bets are built into perceptual systems genetically (p. 45).*

This leads to one of the basic “god-generating mechanisms” (Shults, 2014), agency detection. Humans have a well-established predisposition to interpret under-determined stimuli as agents, i.e. things acting with intent—and we can readily understand why such a cognitive process would have evolved. Given the dangerous and often under-determined environment in which our ancestors lived for millions of years, it was vital to detect whatever agents might be lurking in the brush (as there often were predatory agents lurking in the brush). It was so important to detect agents that false-positives were less costly than false-negatives (Guthrie, 1993) and so even a hyperactive agency detection device, or HADD (Barrett, 2004), would be favored by natural selec-

tion. A consequence of HADD is that humans have a natural cognitive capacity to perceive the presence of agents based on minimal evidence and to act on the basis of such perceptions—even if no actual agent is present.

Of course, perceiving an agent does one little good unless one can devise some plan of action in relation to that agent. As defined, to perceive an agent is to perceive a being that acts with intention, and so determining just what that intention may be is crucial. This leads us to a second aspect of the process—Theory of Mind (ToM), the ability to read-into the mind of another based on external cues. This is something humans do readily and automatically when interacting with other humans. Indeed, it is an essential aspect of social intercourse, and given our nature as ultra-social animals, this capacity is quite sophisticated in humans (Boyer, 2001; Bloom, 2005). In typical, everyday interactions, cues are facial expressions, body language, vocalizations, etc., but we are also primed to infer intentions from much less obvious signals. A noise up ahead, while walking on a dark night, is sufficient to trigger our fight/flight/freeze instinct (Damasio, 1994). We automatically interpret such a cue as a sign of danger. The noise in the brush that we interpret as an agent, we may also interpret as a sign of predatory intent, and we act on that interpretation. Humans evolved to be predisposed to perceive agents (even with minimal and under-determined stimuli) and to attribute mental states to those agents (also based on minimal and under-determined evidence).

These cognitive strategies of HADD and ToM are aspects of a more general cognitive tendency—that of searching for meaningful patterns. In an environment that is both dangerous and under-determined, there is an urgency to making decisions on how to act; we are often denied the luxury of trial and error, or a patient investigation of the evidence. Regularly occurring relations between elements of the environment provide valuable maps for negotiating that environment and deciding how to act. Patterns that provide evidence of agents and intentions are particularly salient. We need to not only detect such patterns, but to read into them; that is, to interpret what intentions, purposes, designs, those patterns may evince. As with HADD, it is better to infer purpose in a pattern than to miss out on a potential clue to some agent’s intent. This leads to a tendency that has been termed “promiscuous teleology” (Kelemen, 2004). Humans are naturally predisposed to search for and read into the environment signs of purpose, intent, design.

These cognitive strategies are enactive processes that enable humans to negotiate their environments in pursuit of evolutionary goals. They also constitute that natural bases for beliefs in gods. As Justin Barrett has put it:

*Belief in gods requires no special parts of the brain. Belief in gods requires no spe-*

<sup>2</sup> I say “implicit” as the literature in CSR has not employed this term. I would argue, although here I can only suggest, that the approach to understanding cognitive mechanisms as adaptive developments, central to CSR, is inherently enactive. I believe that recognizing this implicit model could have an impact on the field.

*cial mystical experiences [...]. Belief in gods requires no coercion or brainwashing [...]. Rather, belief in gods arises because of the natural functioning of completely normal mental tools working in common natural and social contexts (Barrett, 2004, p. 21).*

This is, of course, a very basic treatment of the topic, but it should suffice for our present purposes. The question now is, what does this have to do with morality?

## Morality and the gods: The cognitive connection

For many people and in many religious traditions, the notion that the gods have a role in human morality is a central assumption; one that does not even have to be explained. While the salience of morality for god is not as universal as commonly supposed, belief in morally relevant gods is ubiquitous throughout history and across the globe. How this came to be can also be explored from an evolved cognitive perspective. To understand how gods come to play a role in human morality we need to explore how humans come to think about the mind of god. There is a rich literature exploring this (Boyer, 2001; Atran, 2002; Purzycki and Sosis, 2011; Purzycki *et al.*, 2012), but we can summarize the general conclusion: humans model their understanding of the mind of god on their intuitive understanding of human minds. As Scott Atran writes, “Gods and other supernatural beings are systematically unlike us in a few general ways—more powerful, longer lived, more knowledgeable...—predictably like us in an enormously broader range of usual ways” (Atran, 2002, p. 93).

A particularly notable way that the mind of a god is unlike that of a human is in its access to socially relevant information. Pascal Boyer states that while we conceive of humans as “limited-access strategic agents,” (i.e. they have imperfect access to the minds of others), gods are, often, conceived as “full-access strategic agents” (Boyer, 2001, p. 155). This supernatural access is not necessarily conceived as all-encompassing. It seems particularly focused on information relevant to social exchanges (Purzycki *et al.*, 2012).

This is not surprising. Negotiating social relationships is key to human existence. Knowing who can be trusted, who may be cheating the group (or you) and who is doing their part (or not) to support the group’s efforts, how to encourage cooperation and discourage antisocial behavior, how to repair damaged relationships, etc., are vital and regular tasks faced by humans, and always have been. These constitute a major function of our mental activity, and so when we conceive of the mind of god, we naturally, instinctively, conceive god as having comparable concerns. This makes gods particularly well-suited to assume a moral role in human society. The nature of that role is, however, a complicated and evolving issue.

It has been argued that there are three distinct (even if frequently overlapping) moral roles for the gods to play: that of enforcer of group norms, that of legislator of group norms, that of moral exemplar. However, before gods can come to assume such exalted moral positions, they must first be conceived as moral agents with whom humans interact. Given that the mental states of the gods are modelled on the mental states of human agents, the same cognitive tools for social exchanges are employed with gods as are employed with other agents.

To explicate this further, let’s consider a case study: Yahweh as a jealous god (see Teehan, 2010). In setting out the commandments on Mt. Sinai, we are informed at the very beginning that Yahweh demands an exclusive relationship with the Hebrew people and warns of terrible punishment for cases of infidelity, because “I the Lord your God am a jealous God” (Exodus 20:5). Throughout the Hebrew Bible we are reminded, in the most visceral terms, of this divine characteristic. For example, in Hosea, Yahweh warns of the consequences of Israel “playing the harlot” with foreign gods: “I [will] strip her naked and make her as in the day she is born, and make her like a wilderness [...] and slay her with thirst [...]. Upon her children I will have no pity, because they are children of harlotry” (Hosea 2:2-5).

Jealousy is a particularly ugly human emotion that too often is the source of just the kind of spousal abuse ascribed to Yahweh. That this is ascribed to Yahweh should give us pause, and yet countless editors, redactors, and rabbinic scholars responsible for the construction of the Hebrew Bible saw fit to preserve this representation of their god (and those responsible for selecting texts from the Hebrew Bible to become part of the Old Testament in the Christian Bible saw no reason to do otherwise). While a jealous god does not fit contemporary conceptions of God as a moral exemplar, such a conception does fit with certain moral intuitions. Once the relationship between Yahweh and his people is cast in terms of an exclusive intimate relationship, then jealousy in the face of violations of that relationship, even violent retribution, made intuitive sense: this is how people, especially powerful males, often respond in similar circumstances. Granted, this is intuitive to a moral psychology underlying a patriarchal view of gender relations, but that is just what we should expect from a text in which patriarchy is a foundational assumption and which represents god as male.

Yahweh as a powerful (male) deity is intuitively understood to act as a powerful (male) human would (although scaled up to divine proportions): “visiting the iniquity of the fathers upon the children to the third and the fourth generation of those who hate me, but showing steadfast love to thousands of those who love me and keep my commandments” (Exodus 20:5-6).

Basing the mind of god on the human mind is so natural and intuitive a move that attempts to push back against it have not met with much success. This has been termed the “tragedy of the theologians” (Boyer, 2001). Despite the best

efforts of theologians to develop and spread more refined, less anthropomorphic conceptions of God, people readily revert to talking and thinking about gods in terms that more readily match our evolved cognitive intuitions (Barrett, 1999; Slone, 2004). And this is not simply a problem for contemporary thinkers; we find an early example of this phenomena in the case of Epicurus (341-270 BCE).

Epicurus argued that people misconceive the gods in that they believe that “the greatest evils happen to the wicked and the greatest blessings happen to the good from the hand of the gods” (Epicurus, 1993, p. 62). That is, people, believing that the gods are good and powerful, naturally infer that they reward those who do good and punish those who do evil. That is, in the language of CSR, they employ their moral psychology in which defection from the moral code needs to be punished and pro-social behavior rewarded in order to make sense of the gods. Epicurus pushed back against this intuitive belief, arguing that since the gods are “immortal and blessed” they have no interest in the behavior of human beings. While Epicurus inspired devotion from his disciples and continues to influence the skeptically inclined, he has been excoriated by believers throughout history and denounced as an atheist (despite asserting that we know the gods exist). Why? Because a god that does not care about human affairs might as well not exist. To think of god and to not think of god in terms consistent with our intuitive moral psychology just pushes too hard against our moral cognition.<sup>3</sup>

To conceive of a god, then, is to conceive of a potential actor in social exchanges—i.e. someone to whom behavioral norms are relevant. So, what is it that the gods want?

To answer this question, we cannot restrict our discussion to Biblical accounts or to Epicurus’ contemporaries’ beliefs, for these god-conceptions come relatively late in the history of god-beliefs. What we are looking for is the earliest evidence of the religion-morality nexus in order to gain some insight into the role god-beliefs have played in human evolution. In this context it appears that whatever it was that the gods wanted, it was not that humans treat each other in an ethical manner.

One of the most influential models within CSR for the moral role of gods involves “big gods” (Norenzayan, 2013) who act as supernatural enforcers of local group norms (Johnson and Kruger, 2004; Johnson, 2005; Johnson and Bering, 2006). We can look past nuanced distinctions between these theories and classify this approach as the Supernatural Punishment Hypothesis (SPH). The basic logic of this approach is straightforward: Social cooperation comes with a cost; such costs are offset by reciprocal cooperation, whether directly or indirectly via contributions to the group. Defectors from this system of reciprocity raise the risks, and hence the costs, of cooperation. Keeping track of who is a reliable cooperator

and who is prone to cheat may tax the cognitive capabilities of any individual, particularly as groups increase in size and complexity. Communal belief in a punishing god—a being conceived as a full-access strategic agent—reduces the risks and associated costs of cooperation by making the detection and punishment of cheating more certain.

Despite its strengths, there is a problem with this model: the earliest gods were typically “small gods,” i.e. localized deities, with limited domains of activity, who did not seem particularly interested in the ethical behavior of humans (Stark, 2001; Baumard and Boyer, 2013; Purzycki, 2011). If such gods did not care that you were sleeping with your neighbor’s wife or coveting his oxen, then what did they care about? As Baumard and Boyer put it: “People did think the gods watched them, but that was to monitor the appropriate performance of rituals and sacrifices.” Therefore, “there seems to be no reason to assume [...] that believers in such gods would have been more cooperative, or that this increased cooperation would have made their societies more successful” (Baumard and Boyer, 2013, p. 276).

As I have argued elsewhere, this criticism, while salient, does not undermine the case for the moral role of religion in human social evolution, but it does demand that we rework SPH (Teehan, 2016; Teehan and Shults, forthcoming).

While it does seem that most gods were not concerned with personal ethics (at least not until relatively late in the historical record), the fact that they were concerned with ritual behavior and prone to punish ritual violations was sufficient for such gods to play a moral role in human history. Such gods may not have been morally-concerned, but they were morally-relevant (Teehan, 2016).<sup>4</sup>

Even as late as the texts of the Hebrew Bible, we can see that gods often engaged in corporate punishment. If gods were conceived as punishing the group for individual violations of ritual behavior, then the ritual behavior of individuals had group-wide existential repercussions and would have encouraged punishment of such individuals. This would have addressed the second order problem of altruistic punishment (Fehr and Gächter, 2002; Boyd *et al.*, 2003) since individuals would be motivated to incur the costs associated with punishment as failure to punish ritual-violators would have group-wide costs. This allows us to understand the role that belief in gods could play in promoting proper ritual behavior. However, we need to do some more work to account for moral behavior.

The key to this is grasping how participation in a group ritual modulates our moral psychology. Rituals function as signals of commitment to an in-group (Irons, 2001; Bulbulia, 2004b; Sosis, 2006; Bulbulia and Sosis, 2011; Whitehouse and Lanman, 2014). Since our moral cognition was shaped to function within groups, morality functions as an in-group

<sup>3</sup> See Teehan (2013) for a developed discussion of this issue.

<sup>4</sup> The following discussion was developed in greater detail in Teehan (2016).

adaptation. The group was the site of our strivings for survival and reproductive success; for social species, such success was crucially dependent upon group solidarity and coherence. This has left a deep imprint on our moral psychology. We can see this most dramatically by considering one of the key proximate causes for moral concern, empathy.

There is an impressive body of literature focusing on the role of empathy in morality. Empathy is a complex phenomenon with numerous manifestations (Singer, 2006; Decety and Cowell, 2014; Singer and Klimecki, 2014; Decety, 2015); neuroscientists have identified up to ten brain areas involved in empathetic responses (Baron-Cohen, 2011). For the sake of our discussion, however, we can define empathy as the cognitive capacity to recognize the emotional states of another and to respond affectively to such emotional states (de Waal, 2008). Studies have shown that triggering our empathetic systems can motivate a broad suite of prosocial emotions and behaviors, e.g. increased trust, generosity, sensitivity to the suffering of others, motivation to help, and that these empathy-based responses are sensitive to in-group/out-group distinctions. All of the manifestations of prosociality generated by empathy are scaled up in relation to in-group members. It does not follow that we do not/cannot feel empathy for strangers, but it seems that, as a general rule, such empathy is dampened compared to in-group empathetic responses (De Vignemont and Singer, 2006; Avenanti *et al.*, 2010; Chiao and Mathur, 2010; Hein *et al.*, 2010; Xu *et al.*, 2009; Cikara and Van Bavel, 2014). Interestingly, this in-group bias in empathy does not necessarily result in out-group hostility; but such hostility does result in the context of inter-group competition (Cikara, *et al.*, 2011).

Rituals then, as signals of in-group status, serve as empathy triggers and generate a suite of prosocial emotions and behaviors. This serves the moral function of uniting a disparate group into a more cohesive and cooperative community. This process is not dependent on morally-concerned gods. Individual members of the group are not cooperating for fear of divine punishment, they are cooperating because of their moral sensitivity and empathetic concern for fellow in-group members. The gods may not care if you are cheating your neighbor, but by participating with your neighbor in a ritual to appease that god, you come to care about your neighbors and about treating them fairly. In this way religion comes to serve a moral function within society. We have termed this revision of the SPH the Religion-Empathy-Cooperation Hypothesis, or REACH (Teehan and Shults, forthcoming).<sup>5</sup>

There is literature attesting to the function of rituals in promoting cooperation and in fusing identity between group members (Whitehouse and Lanman, 2014). There is also evidence that the synchronous movement involved in

many rituals also results in increased prosociality (Reddish *et al.*, 2014)—significantly, synchrony is also a recognized empathy-trigger (Valdesolo and DeSteno, 2011; Behrens *et al.*, 2012). What the REACH model adds to the literature is the identification of the neural mechanism that may underlie and make possible such pro-social effects of rituals. Not only does a consideration of empathy add to a more complete causal explanation, it also has implications for signaling theory. A general position in terms of signaling theory is that rituals function to increase group cohesion through costly, at times painful, rituals (Irons, 2001; Xygalatas *et al.*, 2013). However, research shows that the brain is quite sensitive to signals of in-group status, and therefore even minimal signals can serve as empathy triggers and contribute to increased prosociality (see Shaver and Bulbulia, 2016). This is consistent with what we know: many religious rituals are not particularly costly, and yet still function as in-group markers. The ability of even minimal signals to promote prosociality allows us to see how religion may have contributed to the expansion of human social units. It suggests that spreading cooperation beyond the boundaries of small, homogeneous groups may not have been as difficult as once thought. If empathetic concern can be readily triggered by minimal signals of in-group status, and antipathy toward strangers is most pronounced in competitive situations, then religious rituals become sites for extending moral bonding to individuals who otherwise are strangers.

It may be countered that this model of religion's role in promoting cooperation effectively eliminates "religion." Prosociality results from the triggering of our empathy system by signaling of in-group status. It does not seem to matter whether such signals are religious or not. This is a valid point. It is not being claimed that only religion can serve this function; clearly there are many such triggers (e.g. race, ethnicity, nationalism, favorite soccer team, etc.). The claim is that this is a function that religion and religious rituals serve. Given the antiquity and the ubiquity of religion, this model argues that religion was particularly well-suited, perhaps uniquely well-suited, to serve this function throughout the evolutionary history of our species—and this has, I believe, profound import.

## Religions as moral worldviews

Evidence suggests that rituals have been part of human culture going back at least 40,000 years (Rossano, 2009). Belief in gods, spirits, etc. also seems to be present at the earliest stages of human culture, and the cognitive building blocks of religion plausibly pre-date *Homo Sapiens* (Turner *et al.*, 2017). Therefore, significant components of what we recognize as religion go deep into our evolutionary history, and the social

<sup>5</sup> In collaboration with Justin Lane, Teehan and Shults constructed a computational model and simulation that examined the evolution of cooperative strategies with empathy included in game-theoretic based decision-making. Initial results were supportive of the thesis that empathy contributes to a matrix of factors that tend toward increased prosociality. See Teehan and Shults (forthcoming) for preliminary results and discussion.

function of those aspects of religion also go deep into that evolutionary history. This suggests that the cognitive nexus between religion and morality (Teehan, 2016) is embedded in our nature. This cognitive and emotional entanglement of morality and religion has sweeping implications.

A religious ritual is not simply a signal of in-group identity. By triggering our moral cognition, the ritual itself becomes imbued with moral and emotional significance. Since the group was essential to our survival, a sense of belonging to the group provided emotional support and comfort. This is the evolutionary basis for the felt need for connection to something larger than ourselves. Religion can so often serve this purpose because from our earliest history religion served to trigger that sense of belonging in a very concrete manner. And it is not only religious rituals that come to have this association; images, beliefs, clothing, texts, etc. all gain symbolic significance. Religion becomes deeply imbued with moral weight and emotional valence; it comes to constitute a moral worldview.

At this point, I can do no more than loosely set out what is comprised by the term ‘moral worldview,’ but hopefully this will suffice for the conclusions I seek to draw. Ninian Smart made the case that the academic study of religion is a study of religions as worldviews (Smart, 1981). My understanding of ‘moral worldview’ is consistent with this approach but emphasizes the moral aspect. I am using the term ‘moral’ very broadly to denote not simply concerns of duties or virtues, but also of meaningfulness, of identity and connection. By ‘moral worldview’ I refer to a general outlook that includes an understanding of the world and our place in it; a conception of the good and right which provides an ethical framework for our actions and decisions. A moral worldview defines an in-group, with all the moral significance that entails; it connects us symbolically with a larger reality/community and provides a sense of existential security. A moral worldview imbues life, and our life, with meaning. Each of these aspects, I would argue, is grounded in our evolved cognition; and while we may be able to explicitly articulate certain aspects of this worldview, moral worldviews operate largely at a pre-conscious level. They serve as the moral-cognitive background that structures our sense of value and significance.

As defined here, all religions may function as moral worldviews, but not all moral worldviews are religious in nature. Secular Humanism, to cite just one example, serves as moral worldview; so too may a political ideology. Here, however, our concern is with religion. This deserves a more detailed treatment, but we can highlight some key implications.

The psychological roots of moral worldviews make them incredibly important—they may be essential to living a meaningful, morally rich life. As such, they can serve as a buffer against hopelessness and nihilism—but this also makes them problematic. For one, it renders them relatively immune to rational critique, as they are not ultimately grounded in reason but in intuitive moral and emotional cognitive processes. Literature on “sacred values” shows that challenges

to deeply-held moral positions are not only resistant to rational evaluation, but that rational critiques can deepen commitment to them and make conflicts involving sacred values more difficult to resolve (Tetlock, 2003; Ginges *et al.*, 2007; Sheikh *et al.*, 2012). This is further corroborated by research coming out of Terror Management Theory that shows that threats to worldviews lead individuals to cling more tightly to and become more defensive of their worldviews (Greenberg *et al.*, 1990; Burke *et al.*, 2010).

Understanding the moral-cognitive dynamics of moral worldviews may shed further light on the role of religion in the lives of individual believers and of religious communities, and help us come to a better understanding of the complex role of religion in the world today. As a case study, let’s employ this model to assess a much discussed paradox involving religion and politics, i.e. the overwhelming and robust support of the evangelical community in the United States for Donald Trump.

In the 2016 U.S. presidential election, evangelical support for Donald Trump stood at 81%. A religious denomination that advocates a Biblically based morality, and has made a candidate’s values a central consideration in voting, constituted the major voting block for a twice-divorced, biblically illiterate, boastfully licentious candidate. This has generated a great deal of analysis and commentary. One common explanation was that these evangelicals were simply hypocrites who abandoned their values in order to gain the political power that they hoped to gain from Trump, who energetically courted them. Certain statistics seem consistent with this charge.

A poll conducted by the *Public Religion Research Institute* prior to the 2012 election asked constituents of various religious groups whether they believed that an elected official who commits immoral acts in their personal life can still behave ethically and fulfill their duties in their professional life. Only 30% of white evangelical Protestants answered “yes”—the lowest of any group surveyed. The same poll conducted prior to the 2016 election found that 72% of white evangelicals now answered “yes”—the highest of any group surveyed (PRRI, 2016). And this support has not wavered: as recently as April 2018, polls showed white evangelical support for Trump at an all-time high (Jones, 2018).

An insightful analysis by Robert Jones points to changing demographics as a significant factor in understanding this phenomenon. He points out that white Christians, who had been the dominant religious and cultural force in the United States since its founding, presently only constitute 43% of the population; white evangelical Protestants only account for 32%—and population trends are not favorable for this group. With a median age of 57, white evangelicals are the oldest religious group studied (the youngest, at a median age of 37, are those labeled the “nones,” i.e. those who do not identify with any established religion). Jones suggests that white evangelicals are facing a cultural crisis, and a recent study argues that a sense of cultural threat was the most significant factor in explaining the presidential vote (Mutz, 2016).

Seeing religion as a moral worldview fits with and helps to explain these numbers. White evangelicals<sup>6</sup> are facing serious demographic challenges, and this has translated into decreased cultural power. This loss of cultural influence is reflected, for example, in the progress made in terms of LGBT rights, the dramatically swift change in attitudes toward marriage equality that culminated in the Supreme Court of the U.S. deeming it a constitutionally protected right, and the cultural effects of globalization. Nor should we underestimate the election of an African-American as President (twice). White evangelicals perceive their moral worldview as under attack, and such threats are processed as existential dangers, which lead people to cling more tightly to their worldview and to become more xenophobic. Donald Trump's campaign slogan, "Make America Great Again" represented a vision of America that was much more white and much more Christian. His obvious moral failings and irreligiousness were not obstacles to evangelical support because he represented, on a moral-cognitive level, a defense against the existential crisis they were experiencing. Since taking office, his repeated use of racist rhetoric and his Islamophobic immigration proposals provided supporting evidence that he was acting to re-establish the vulnerable moral worldview of his white evangelical supporters. In the face of such deep and powerful moral/emotional processes, rational arguments and evidence have little chance of influencing people's views.

On one level, the charge of hypocrisy seems compelling, but that is only if we ignore the underlying dynamics of religion as a moral worldview. Whatever the explicit teachings or stated values of a particular religion, a more basic and powerful function of religion-as-moral worldview is to provide existential security. It taps into some of the most primal and ancient instinctual drives in human nature. From this perspective, white evangelicals are responding in a manner consistent with the model of our evolved moral cognition set out in this paper.

Understanding religion as a moral worldview grounded in our evolved cognitive capacities not only provides insight into the history of religion, it provides a more effective lens through which to assess the on-going influence of religion in the world today.

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<sup>6</sup> Clearly, there is an intersection between race and religion here, as predominantly white Jewish voters overwhelmingly supported Hillary Clinton (71%, Bowman and Sims, 2017), as did black Protestants (88%, Burge, 2017). However, given the prominence of racial identity in American society, this intersection is to be expected in defining a moral worldview.



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