

# The Evolution of Prosocial Religions

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## Abstract

Building on foundations from the cognitive science of religion, this chapter synthesizes theoretical insights and empirical evidence concerning the processes by which cultural evolutionary processes driven by intergroup competition may have shaped the package of beliefs, ritual, practices, and institutions that constitute modern world religions. Five different hypothesized mechanisms are presented through which cultural group selection may have operated to increase the scale of cooperation, expand the sphere of trustworthy interactions, galvanize group solidarity, and sustain group-beneficial beliefs and practices. The mechanisms discussed involve extravagant displays, supernatural monitoring and incentives, ritual practices, fictive kinship, and moral realism. Various lines of supporting evidence are reviewed and archeological and historical evidence is summarized from early China (roughly 2000 BCE–220 BCE), where prosocial religion and rituals coevolved with societal complexity.

## Introduction

In this chapter we summarize a growing body of work that jointly addresses two major evolutionary puzzles: the rise of large-scale human societies over the last 12 millennia and the origin of world religions. The origin of large-scale human societies that rely on substantial exchange and cooperation among ephemeral or anonymous interactants (Henrich et al. 2010b) stands as a major evolutionary puzzle (Jordan et al., this volume). While the standard evolutionary mechanisms associated with kinship, reciprocity, and reputation clearly influence human cooperation in important ways, they do not capture the full extent of our species' prosociality, and cannot explain the most important and peculiar aspects of human cooperation (see also Gintis and van Schaik, this volume; Turchin, this volume). Kinship cannot explain cooperation among nonrelatives, and reciprocity and reputation do not suffice to

explain cooperation beyond dense social networks, small villages, or tightly knit neighborhoods. Moreover, neither direct nor indirect reciprocity can explain cooperation in ephemeral interactions in large groups, where reputational information rapidly degrades, or in large-group interactions such as those associated with many kinds of public goods or commons dilemmas. Perhaps even more telling is that none of these mechanisms are able to explain the variation in cooperation among extant human societies, or the massive expansion of cooperation in some societies over the last twelve millennia (Chudek and Henrich 2011).

Religions are also puzzling: the existence of supernatural beliefs and ritualized behaviors is hard to explain from an evolutionary perspective. Since natural selection tends to filter out behaviors and beliefs which do not contribute to an organism's fitness, it is difficult to see how costly religious behaviors or counterintuitive supernatural beliefs (e.g., devoting time and resources toward elaborate rituals, building massive tombs, and observing debilitating taboos) could have originated, spread, and endured in so many societies.

We argue that these two puzzles are related: converging lines of field, experimental, and historical evidence indicate that particular religious beliefs, rituals, and practices have spread because groups possessing these cultural traits have expanded at the expense of groups possessing different traits or trait packages. Over time, a variety of cultural evolutionary processes, driven by intergroup competition, gradually assembled integrated packages of cultural elements (including beliefs, rituals, devotions, and social norms) to deepen group solidarity, sustain internal harmony, galvanize trust and cooperation on larger scales, and motivate their further spreading. Central to these packages are beliefs in supernatural agents or forces that (a) moralize human action in particular (and predictable) ways, (b) incentivize certain behaviors using supernatural rewards and punishments (see Norenzayan et al., this volume), and (c) manipulate our psychology in other ways that favor success in competition with other groups. These emerging cultural packages facilitated the origins of complex, large-scale societies and explain why religions with costly religious displays and moralistic high gods—which were likely rare over most of human history—have spread at the expense of other types of religious beliefs and practices. Our hypothesized link between religion, group identity, and morality may also explain the persistence of religious belief in the face of countervailing pressures; it provides a cultural evolutionary explanation for the emergence of the moral realism that now pervades both religious and secular discourses.

We supplement our review of the evolutionary and cognitive science literature with historical evidence from early China, chosen specifically because China is often held up—inaccurately—as an example of a complex society that emerged without high moralizing gods, dualistic thought, supernatural punishment, moral realism, or religious ritual strictures.

### **Points of Departure**

Our approach here builds on and extends previous work within the cognitive science of religion. We take as our point of departure that mental representations related to religion are underpinned by the same reliably developing features of mind as nonreligious representations (Boyer 2001; Atran and Norenzayan 2004; Barrett 2004; Guthrie 1993), and that religious thinking is in many ways more intuitive than other kinds of thought (Shenhav et al. 2011; Gervais and Norenzayan 2012a), such as science (McCauley 2011). For example, core among the cognitive capacities that underpin religious representations is our ability to mentalize, or theory of mind, that allows people to think about goal-directed supernatural agents (Bering 2006a). Recent work shows that a decreased ability, or tendency, to use this mentalizing ability reduces belief in god (Norenzayan et al. 2012). Similarly, the ability to hold mental representations about souls or an afterlife may arise as a by-product of the separate evolutionary histories of our capacities for object tracking and mentalizing, leading to dualistic tendencies that permit us to readily conceptualize a separation of minds and bodies (Bloom 2004). Recent work has established this type of dualistic thinking in young children and adults from diverse societies (Chudek et al. under review; Cohen et al. 2011) and in ancient Chinese texts (Slingerland and Chudek 2011).

While foundational, this work leaves unexplained (a) the distribution of different kinds of supernatural beliefs, (b) the cultural evolution of religious representations over time, and (c) why people are emotionally committed to some supernatural beliefs or agents (gods) but not others (the so-called “Zeus Problem”; see Gervais and Henrich 2010). For example, although our cognitive capacities can readily entertain an immense range of god-beliefs, it is an important to understand why beliefs in potent, morally concerned agents equipped with ample power to punish and reward became so common over the last 5,000 years. In small-scale societies, and likely in those of our Paleolithic ancestors, gods were quite different from those found in modern world religions, being relatively weak, whimsical, and morally ambiguous (Roes and Raymond 2003). Moreover, in the modern world, people often hold mental representations of many different gods (e.g., Zeus, Shiva, and Yahweh), but only believe in (i.e., are committed to and respond behaviorally to) one or a small subset of these. Therefore, when it comes to commitment or faith, factors are at play besides the content of the representations themselves (Gervais et al. 2011).

To address these issues, we incorporate basic insights from the cognitive science of religion into a cultural evolutionary (dual inheritance) framework. The central insight of this approach is that, unlike other animals, humans have evolved to rely heavily on acquiring behavior, beliefs, motivations, and strategies from other members of their group. The psychological processes that

permit this cultural learning have been shaped by natural selection to focus our attention on those domains and those individuals most likely to possess fitness-enhancing information (Richerson and Boyd 2005). Human social learning generates vast bodies of know-how and complex practices that accumulate and improve over generations. Unlike other animals, human survival and reproduction, even in the smallest-scale societies, depends on acquiring cumulative bodies of cultural information related to hunting (animal behavior), edible plants (e.g., seasonality, toxicity), technical manufacture, and so on (Boyd et al. 2011). To exploit this accumulated body of adaptive information fully, learners often need to give priority to faith in their culturally acquired beliefs and practices over their own personal experience or basic intuitions. We have evolved to have faith in culture, with this faith being directed by certain salient cues (Atran and Henrich 2010).

What we describe below is, in part, a cultural evolutionary process in which cultural group selection “figures out” ways to exploit these learning abilities to spread effectively beliefs and practices that favor success in intergroup competition. Our ability to entertain supernatural and ritualized practices, as by-products of our evolved cognitive capacities, provides the foundation for the rise of prosocial religions and of complex, cooperative societies.

### **The Cultural Group Selection of Beliefs, Extravagant Displays, and Rituals**

A growing body of evidence suggests that religious beliefs, rituals, devotions, and social norms have coevolved in interlocking cultural complexes in a process driven by competition among alternative complexes. Cultural group selection can assemble those combinations of cultural traits that most effectively reinforce cooperative or other prosocial norms in a variety of interrelated ways. Here we focus on five. First, observation and participation in costly or extravagant rituals or devotions likely induces deeper emotional commitment to supernatural beliefs or agents, who can then be more effective monitors and punishers. Building on this transmission effect, extravagant displays can also evolve culturally to act as honest signals of group commitment or group membership, thereby favoring the associations that sustain cooperation. Second, supernatural policing and incentives (heaven vs. hell) can buttress more earthly norm-sustaining mechanisms, such as punishment, signaling, and reputation. Third, religions can extend the scope of cooperative tendencies by using collective rituals to forge unrelated individuals into emotionally connected, cooperative communities. Fourth, prosocial norms can be more readily transmitted by using fictive kinship, just as in many small-scale societies. Finally, the psychological force and endurance of prosocial norms can be increased by grounding them in the structure of the universe, either by directly attributing their creation to supernatural beings or portraying them as reflecting

metaphysical truths. Our efforts here build on much prior work (Wilson 2002; Durkheim 1915/1965; Norenzayan and Shariff 2008; Atran and Henrich 2010; Wright 2009). Each of these proposed mechanisms will be explored in turn.

### **Costly Displays and Religious Faith**

Once grounded in a cultural evolutionary framework, work on extravagant displays suggests three possible and interrelated explanations for the origin of religious asceticism, intense devotions, and some ritual practices. First, some rituals and devotional ascetic practices may have evolved culturally to deepen people's commitments to counterintuitive beliefs. Second, once such beliefs have been established, seemingly costly displays or signals evolve culturally to better demarcate group boundaries and discriminate those who share one's religious commitments and social norms (including cooperative norms) from those that do not. Third, this cultural evolutionary theory has the potential to explain the broad differences in rituals found in large- versus small-scale societies: specifically, the growing importance of low-arousal, high-frequency rituals (the "doctrinal" mode) and the relative de-emphasis of high-arousal, low-frequency rituals (the "imagistic" mode) with the expansion of societal complexity (Whitehouse 2004).

Evolutionary thinking suggests that humans possess a learning mechanism that gives weight to seemingly costly acts (credibility enhancing displays, CREDs) that are diagnostic of underlying beliefs and commitments (Henrich 2009a). Attention to these CREDs in acquiring one's degree of internal commitment to particular beliefs reduces one's chances of being manipulated by those seeking to transmit beliefs that one does not actually hold. Costly ritualized acts may have evolved as a means to convince learners effectively of the personal commitment of either the rest of the congregation (exploiting conformist biases in our learning) or of locally prestigious models. By exploiting our evolved reliance on CREDs, rituals and devotions can operate to deepen our commitments to counterintuitive beliefs. They also link performance of costly acts or extravagant displays to social success, thereby perpetuating the transmission of belief commitment across generations. Formal cultural evolutionary models show that costly displays can interlock with and sustain counterintuitive beliefs that would otherwise not be sustained by cultural evolution (Henrich 2009a).

This approach suggests that commitment to supernatural agents tends to spread in a population to the extent that it elicits, or is associated with, costly or extravagant displays. When community leaders and the congregation demonstrate commitment to supernatural beliefs by performing a costly ritual, observers who witness these commitments are more inclined to trust and learn from these actors, deepening their own belief commitments. If supernatural agents demand and incentivize certain behaviors, those with deeper commitment and beliefs in these agents are more likely to shift to behavior in

compliance with these agents. This means that rituals with CREDs can influence costly prosocial behavior indirectly, by increasing belief commitments to agents who demand such behavior. This also explains why gods demand costly rituals. Supernatural demands for rituals, devotions, and sacrifices facilitate the intergenerational transmission of deep commitments, as children infer deep commitments from the costly or extravagant actions of adults (Alcorta and Sosis 2005).

Meanwhile, the psychological nature of commitments to culturally transmitted beliefs means that sacrifices and rituals need not seem (subjectively) costly for those who already deeply believe in the agent's incentives. Once culturally transmitted beliefs exist, and individuals are equipped psychologically to distinguish CREDs, cultural evolution may also harness diagnostic actions in ways that help believers identify each other or to exclude nonbelievers (and potential free-riders) from participation and the benefits of group members (Sosis and Alcorta 2003). By embedding ideas about signaling within this broader cultural evolutionary framework, we address a number of theoretical shortcomings without losing the core insights of work on signaling (Henrich 2009a).

Several lines of evidence support these hypotheses. The cultural evolution of the interrelationship between religious beliefs and costly rituals/devotions emerges from a study of 83 utopian communes in the nineteenth century (Sosis and Bressler 2003). Analyses show that religious groups with more costly rituals were more likely to survive over time than religious groups with fewer or less costly rituals. Differential group survival caused an increase in the mean number of costly rituals per group over time: cultural group selection in action, increasing the frequency of costly ritual, and devotional requirements over time via differential group extinction. Additional ethnohistorical evidence for the spread of rituals via cultural group selection can be found in Henrich (2009a). Similarly, among Israeli kibbutzim, individuals from religious kibbutzim cooperated more in a behavioral experiment than those from nonreligious kibbutzim, with the increased cooperativeness of religious members being accounted for by their ritual participation (Sosis and Ruffle 2003; Ruffle and Sosis 2006). Surveys and experiments in the West Bank and Gaza also show that a person's frequency of attendance at religious services predicts support for martyrdom missions. Convergent findings emerge for representative samples of Indian Hindus, Russian Orthodox, Mexican Catholics, British Protestants, and Indonesian Muslims. In these samples, greater ritual attendance predicts both declared willingness to die for one's god, or gods, and belief that other religions are responsible for problems in the world (Ginges et al. 2009). Moreover, a study of 60 small-scale societies reveals that males from groups in the most competitive socioecologies (with frequent warfare) endure the costliest rites (e.g., genital mutilation, scarification), which "signal commitment and promote solidarity among males who must organize for warfare" (Sosis et al. 2007:234). In such socioecologies, cultural group selection will

shape religious rites and beliefs to manipulate our psychology to increase solidarity and commitment. A related analysis by Atkinson and Whitehouse (2011) documents the predicted relationship between ritual frequency and scale of society, with a pattern of more frequent, less dysphorically arousing rituals being associated with larger community size, more dependence on agriculture, and more influence by classical, “high god” religions.

The historical-archeological record, combined with comparative ethnography, indicates that the costliness, size, specialization, and regularity of communal rituals increased with the scale and political complexity of societies. Archaeological research on the coevolution of ritual and society indicate that rituals became much more formal, elaborate, and costly as societies developed from foraging bands into chiefdoms and states (Marcus and Flannery 2004). In Mexico before 2000 BCE, for example, nomadic foraging bands relied on informal, unscheduled, and inclusive rituals. The same goes for contemporary foragers, such as the San of Africa’s Kalahari desert, whose ad hoc rituals (e.g., trance dancing) include community members and are organized according to the contingencies of rainfall, hunting, and illnesses (Lee 1979). However, with the establishment of permanent villages and multivillage chiefdoms (2000–1000 BCE), rituals were managed by social achievers (prestigious “Big Men” and chiefs) and scheduled according to solar and astral events. This also appears to be the case for predynastic Egypt (4000–3000 BCE) and China (2500–1500 BCE), as well as for the chiefdoms of North America. After the state formed in Mexico (500 BCE), important rituals were performed by a class of full-time priests, subsidized by society, using religious calendars and occupying temples built at enormous costs in terms of labor and lives. This is also true for the earliest state-level societies of Mesopotamia (after 3500 BCE) and India (after 2500 BCE), which, as in Mesoamerica, practiced fearsome human sacrifice (Campbell 1974). Combining this with comparative ethnography suggests that high moralizing gods likely coevolved with costly regularized rituals, creating a mutually reinforcing cultural package capable of enhancing internal cooperation and harmony, while providing a justification to exploit out-groups.

Combining these observations with recent work in psychology may illuminate the linkage between monumental architecture and religion. The earliest civilizations are known for their stunning monumental architecture, usually in the form of temples, pyramids (tombs), and ziggurats (altars), all of which apparently served a religious function. The importance of such grandeur may serve at least two important psychological purposes. First, they may represent costly displays of commitment from the society’s leaders, or of the society in general, to help instill in learners a deeper commitment to religious or group ideologies. Second, their visibility may act as an omnipresent “religious prime” that stimulates prosocial behavior (Norenzayan et al., this volume). A large temple in the market square may provide a salient cue that evokes, if



only at the margins, more prosocial behavior in those interacting on the square. Societies that exploit these aspects of human psychology will expand at the expense of those that do not.

In early China, the most prominent feature of the Chinese archeological record is enormous tombs dedicated to deceased leaders. Though these were completely encased in earth, their elaborate structure and fabulous wealth which they contained were broadcast widely to the community in the course of public ceremonies dedicated to the entombment process, and the resulting mounds towered over the surrounding landscape. Our earliest written records of Chinese religious practices come from the Shang Dynasty, the first historically attested large-scale polity. In addition to constructing enormous tombs, it is clear that the life of at least the Shang elites was dominated by time-consuming and materially costly sacrifices to ancestral spirits and various deities, including the high god Shang Di (“Lord on High”) (Eno 2009). By the Western Zhou period (1046–771 BCE), evidenced by longer and more discursive texts, codified ritual observances have expanded to encompass every aspect of the elites’ daily lives: their manner of dressing, eating, sleeping, and interaction with peers were all subject to a variety of taboos and injunctions that were viewed as being grounded in the basic structure of the cosmos. It is difficult to access the economic cost of mortuary and ritual practices in early China, but one estimate puts it at a full 10% of the society’s gross domestic product (Sterckx 2009). Mandatory religious practices clearly occupied the majority of elites’ waking lives.

### **Supernatural Policing**

Our hypothesis suggests that, as we move from small-scale to large-scale societies, supernatural agents become increasingly morally concerned, more effective at monitoring norm violations (omniscience) and better equipped to provide punishment and rewards (heaven and hell) according to prescribed behavior. This view predicts many relationships, but among them is that belief in such gods should promote prosocial behavior toward co-religionists. There is now a substantial experimental and behavioral literature establishing this connection (for a detailed review, see Norenzayan et al., this volume). Here we confine ourselves to discussing the evidence for supernatural surveillance in early China.

Historically, although much evidence from Abrahamic religions is consistent with a supernatural surveillance view (Wright 2009), some researchers have suggested that a similar patterns did not emerge in early China. However, to the contrary, evidence from early China shows that supernatural monitoring played an important role in cobbling together large-scale cooperation. Even from the sparse records available from the Shang Dynasty, it is apparent that the uniquely broad power of the Lord on High to “order” a variety of events in the world led the Shang kings to feel a particular urgency about placating it



with proper ritual offerings. As we move into the Western Zhou Dynasty, the “Mandate of Heaven”—the idea that the right of the Zhou kings to rule was determined by the high god—makes obedience to the desires and standards of Heaven a central religious and political requirement. The term *tianming*, or “Mandate of Heaven,” first appears in a bronze inscription from ca. 998 BCE, and quickly became a central term of art in Zhou religious discourse. The idea that political power was the result of a supernatural mandate led to tremendous, and increasing, anxiety on part of the Zhou elite that the Heaven which gave them their power might, on the basis of its observations of their behavior, revoke this mandate.

Looking at the Eastern Zhou period (770–256 BCE), when the Zhou polity begins to fragment into a variety of independent, and often conflicting, states, supernatural surveillance and the threat of supernatural sanctions remain at the heart of interstate diplomacy and internal political, legal relations, and public morality. The fifth century BCE text *Mozi* argues that faith in ghosts and spirits must be encouraged among the people, because belief in, and fear of, supernatural agents is crucial to sustain moral behavior. For the majority of thinkers in early China, Heaven continued to function as a Boyerian “full access strategic agent” (Boyer 2001), aware of and prone to judge one’s actions and inner thoughts

### Rituals of Collective Effervescence

The idea that religious practices may function to create larger, cooperative units out of collections of individuals is one that can, in the West, be traced back to the beginning of religious studies as an academic discipline. Émile Durkheim, for instance, famously argued that the apparent practical irrelevance of rituals is more than outweighed by the fact that they “put the group into action,” serving to “bring individuals together, to multiply the relations between them and to make them more intimate with one another” (Durkheim 1915/1965:389) and create a state of “collective effervescence” (Durkheim 1915/1965:405). The theories of Durkheim and other pioneers have been revived by the cognitive science of religion, where evidence is accumulating that religious rituals appear to engage both emotions and motivations using music, rhythm, and synchrony to build group solidarity. For example, a growing body of evidence suggests that synchrony increases feelings of affiliation and may encourage acts of sacrifice for the group. Recent experimental studies have found that acting in synchrony—by marching, singing, or dancing in rhythm—increases feelings of affiliation, empathy, compassion, and connectedness (Valdesolo and DeSteno 2011; Valdesolo et al. 2010; Wiltermuth and Heath 2009), even among strangers. The joint experience of synchrony results in greater cooperation in subsequent group exercises, even in situations that require personal sacrifice. There is also some evidence that these effects emerge in childhood; for example, joint music making by preschoolers promotes prosocial behavior

(Kirschner and Tomasello 2010). The ability of music, rhythm, and synchrony to instill commitment and trust is no doubt why militaries have employed for millennia drill routines to train soldiers and build armies (McNeill 1995). Such drill techniques appear to have spread by copying more successful groups, a form of cultural group selection.

In early China, most of the central religious practices are characterized by collective and coordinated physical movement, singing, dancing, and the intonation of sacred texts. A forerunner to Durkheim, Xunzi (third century BCE) was an early Confucian functionalist theorist of religion, who argued that the primary purpose of ritual activities was not—as most of his contemporaries believed—to serve the spirits, but rather to bind people together into effective cooperative wholes through synchronized group activities (Campany 1992).

### Fictive Kin

Another strategy that religions appear to employ is to harness standard human familial emotions to foster cooperation within the larger religious “family” (Alexander 1987; Atran and Norenzayan 2004). Kinship terminology is common in religious groups. There are two different hypotheses about how these extensions of kinship may be used to influence our behavior. The strong version of this hypothesis is that by calling strangers “brothers,” our kinship psychology is actually tricked into perceiving a genealogical relationship, and behavior is consequently adjusted in altruistic and sexually averse ways. An alternative view, the “extension hypothesis” is that using kinship labels facilitates the transmission process for social norms by helping people understand how they are *supposed* to feel and act toward others in that category. In this way, kin labels allow for the readily apprehension and transmission of social norms, without psychologically conflating kinship relationships with interactions among strangers.

The phenomenon of religiously grounded, metaphorically expanded kin group is clearly at work in early Chinese culture. In the Shang, it appears that the Lord on High was viewed with both trepidation and awe precisely because the Shang kings did not enjoy a special familial relationship with him. By the time we reach the Western Zhou, the Zhou rulers are attempting to cement their relationship with their similarly independent high god by creating metaphorical kinship ties with it. In the earliest Zhou texts, the relationship between the normative order of the cosmos and the political order of the Zhou is modeled on family relationships. Heaven—or the combination of “Heaven and Earth”—is often portrayed in these texts as the “father and mother” of the universe, and the Zhou king, in turn, as the metaphorical father and mother to the Chinese people. This metaphorical extension of the family is fundamentally linked to the supernatural normative order: it is the approval and support of the supreme god, Heaven, which makes the Zhou king the “Son of Heaven,” and this status as Son of Heaven gives him his “Heavenly Mandate” to rule.

It is perhaps no accident that this expansive conception of “all under Heaven” united in a great, metaphorical family—together with a quite sophisticated bureaucracy and other institutional innovations—to allow the Zhou to extend their sway over a remarkably large geographical area and to swallow up the other large and ancient cultures in neighboring regions (i.e., to expand via cultural group selection).

By the time of the Eastern Zhou period (770–221 BCE), and particularly the Warring States (479–221 BCE) period, metaphysically grounded family metaphors were foundational in ethical and political discourse (Schaberg 2001:137). Confucius, in what is arguably the foundational religious philosophical text of early China, declares that “all people within the Four Seas [i.e., the known world] are brothers.” Indeed, one of the main tenets of early Confucianism is that public ethical behavior is a direct development of familial emotions, which are first to be perfected within the context of the biological family and then extended to the political realm (one’s metaphorical family). Confucius’s follower Mencius developed this idea into an explicit doctrine of “extension,” whereby, for instance, innate feelings of compassion for one’s genetic kin are to be gradually extended—through training in cultural learning and imaginative projection—to encompass strangers, and finally the entire world. Mencius can therefore be seen as anticipating the contemporary extension hypothesis.

### Moral Realism

The fifth way of stabilizing norms is to postulate for them a supernatural origin, or otherwise provide them with some sort of supernatural authority. *Moral realism*, or the belief that one’s moral intuitions are grounded in the metaphysical structure of the universe, both explains their psychological force and justifies their imposition on others (Haidt et al. 2008; Taylor 1989). Charles Taylor (1989) has argued for a basic distinction in human judgments between “weak” as opposed to “strong” evaluations. Weak evaluations, like one’s preference for a particular flavor of ice cream, are subjective and arbitrary. Strong evaluations, on the other hand, derive their strength from being based on one or more explicit or implicit metaphysical claims, and are therefore perceived as having objective force rather than being a merely subjective whim. People are motivated to punish violations of strong evaluations and condemn such violations in metaphysical terms. For instance, a person might not particularly like chocolate ice cream and believe that the flavor of vanilla ice cream is superior. This individual does not, however, expect everyone to share this preference, and is certainly not moved to condemn others for preferring chocolate. People in modern Western societies are also generally not inclined to sexually abuse small children, but this is an entirely different sort of preference: abusing small children is felt to be *wrong*, and people condemn and are moved to punish anyone who acts in a manner that violates this feeling. Moreover, if pressed on the

matter, this condemnation would be framed in metaphysical terms: defended on the basis of beliefs about the value of undamaged human personhood, or the need to safeguard innocence.

We hypothesize that moral realism emerged by first assembling the moral domain (category) using existing cognitive tools, such as essentialism, and then forging the link between this moral domain and supernatural agents by either (a) assigning the authorship of moral norms to universal gods or (b) tracing norms to the metaphysical structure of the universe. Moral realism sets up a bulwark against the spread of alternative views from powerful and self-interested coalitions. For example, the sacred quality of norms for monogamous marriage advanced by early Christianity—favored by cultural group selection in the environments of complex, trade-dependent, societies—allowed them to win over elite males who would otherwise be expected to resist the imposition of monogamy for their own fitness reasons (Henrich et al. 2012). In addition to creating a bulwark against interest groups, moral realism was also favored by cultural group selection because it motivates the assimilation of populations with alternative beliefs, and the active extermination of competing beliefs (think missionaries).

Much anthropological evidence indicates little or no connection between the moral and supernatural domains in small-scale human societies (Marshall 1962; Swanson 1960). On the basis of such evidence, many authors have argued that the connection between the moral and supernatural domains evolved over the course of human history (e.g., Swanson 1964). We agree with these observations, but also propose that cultural group selection drove these processes of change because moral realism influences the success of cultural complexes.

Recent experiments provide some support by showing that when norms are associated with the sacred (connected to the supernatural), they become emotionally charged and less subject to material calculations and practical trade-offs (Tetlock 2003). In conflict situations, as in today's Middle East, material offers from one group to another to relax or abandon norms associated with sacred values generate moral outrage and increased readiness to support lethal violence (Ginges et al. 2007; Atran et al. 2007).

Turning to historical evidence from early China, our records of Shang religion are too sparse to tell us much in detail about the relationship of morality and meaning to the sacred, but the Shang supreme deity, Lord on High, was seen as the ultimate enforcer of at least ritual norms. By the time we reach the Western Zhou, Heaven and its Mandate are central to the moral order inhabited by the Zhou kings: the outlines of moral behavior have been dictated by Heaven and encoded in a set of cultural norms. A failure to adhere to these norms—either in outward behavior or one's inner life—was to invite instant supernatural punishment. As Eno (2009) observes, by the time of the Western Zhou, the idea of Heaven and the Heavenly Mandate has come to support a

sophisticated and centrally important theodicy—a narrative detailing the religious and moral factors behind the Zhou’s rise to power, and their continued hold on it—and become the basic organizing concept of Zhou religion. As he explains, by the Western Zhou, Heaven “has taken on the role of ethical guardian, rewarding and punishing rulers according to the quality of their stewardship of the state. The relationship of the ruler to the High Power has now added to worship the fulfillment of an imperative to govern according to moral standards” (Eno 2009:101). Eno quite plausibly sees the creation of this sort of ethical high god as an important contributing factor in the Western Zhou’s unprecedented ability to expand militarily and politically, the clear theodicy and supernaturally mandated moral code both legitimizing the dynasty and providing a common sense of sacred history and destiny across the growing Zhou polity (Eno 2009).

By the time we reach the Warring States, we encounter a variety of views on the relationship of morality to supernatural authorities such as Heaven, reflecting the diversity that bloomed among the period’s so-called “Hundred Schools” of thought. Confucius of the *Analects* believed himself to be on a mission from Heaven, charged with leading his contemporaries back the practice of a set of traditional cultural norms revealed by Heaven to the ancient Zhou kings. One of Mozi’s primary arguments in favor of his central doctrine of “impartial caring” was that it was modeled on the behavior of Heaven, who would actively punish those who went against its dictates and reward those who embraced them. Confucius’s follower Mencius somewhat naturalized the Heavenly Mandate by turning it into an innate endowment embedded in each individual’s nature. The primary warrant for valuing and developing this nature, however, was that it represented a gift from Heaven, and to neglect it would therefore be a direct affront to Heaven’s will. In a similar vein, one of the recently discovered Confucian archeological texts describes the cardinal human relationships and their attendant virtues as part of a “great constancy” (*dachang*) sent down by Heaven. *Tian* sometimes appears in a less anthropomorphic form in so-called “Daoist” texts, such as the *Daodejing* or *Zhuangzi*, but nonetheless continues to serve as the primary locus of normative value and meaning.

### Religious Diversity and the Rise of Large-Scale Civilizations

An article in *The Economist* (2011), “Killings in Liberia: Nasty Business,” documents the manner in which a recent spread of beliefs centered on witchcraft and sorcery-based killings have effectively paralyzed civil society throughout growing swathes of Liberia, creating an environment of such pervasive interpersonal suspicion and competition that not even the most basic forms of social cooperation can get off the ground. This case, which captures the antisocial

effects of witchcraft in many societies (Knauff 1985),<sup>1</sup> illustrates that not all religious beliefs lead to prosocial behavior. While some, or all, of the features sketched out above are often taken to be typical of “religions” in general, there is reason to suspect that they actually represent relatively novel but successful products of a long cultural evolutionary process that has forged links between prosociality, morality, rituals, and deep commitments to supernatural agents or principles. Our central argument is that groups which succeeded in integrating the above features into packages of cultural elements (beliefs, rituals, and devotions) deepened group solidarity by incentivizing trust and cooperation with supernatural punishments and rewards, and were able to outcompete other groups. We believe that the gradual assembly of this cultural package was not only a key to the origin of large-scale societies, but also provides a convincing answer to the historical question of why religions with moralistic gods—rather rare among the panoply of human religious variety—have spread at the expense of other types of religion: cultural groups with religions that best promote within-group cooperation and harmony tend to outcompete other groups.

Significant advances in the study of religious cognition, the transmission of culture, and the evolution of cooperation are relatively recent. Bringing these new insights, in combination with older ideas, to bear on phenomena as complex as moralizing religions and large-scale societies is an ongoing challenge. The argument and evidence presented here provides a plausible scenario showing how synthetic progress is possible. More rigorous study is needed on the evolved psychology and cultural processes associated with the role of counter-intuitive religious agents and costly rituals in up-scaling the scope of trust and exchange, of sacred values and taboos in sustaining large-scale cooperation against external threats, and also of maintaining social and political causes that defy self-interest. Empirical research which combines in-depth ethnography with both cognitive and behavior experiments among diverse societies, including those lacking a world religion, is crucial to understanding how religion influences our cognition, decision making, and judgments. The formal modeling of cultural evolutionary processes should be combined with historical and archeological efforts to apply these emerging insights to broad patterns of history. Jointly, such efforts will further illuminate the origins of religions.

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<sup>1</sup> For a discussion of how witchcraft may operate to enhance cooperation as societies expanded in scale, see Bulbulia et al. (this volume)