



Cultural Evolution of Religion, Spirituality and Ritual: Impacts On Human Cooperation

Rita Anne McNamara 

Received: 8 May 2023 / Accepted: 1 February 2024
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Abstract From the classic gene-centred view of evolution, cooperation is a mystery. This paper reviews the cultural evolutionary approach, which asks how genes and culture both carry information across generations to produce adaptive responses. Cultural evolution approaches ritual, religion and spirituality as collective responses to cooperation challenges. Ritual engages with individual and collective neuro-biological responses that cue group cohesion and facilitate trust. Ritual simultaneously cues social learning and can alleviate anxiety by downregulating neurological arousal. Religion forms a complex set of socio-cultural behaviours and beliefs that facilitate group identification and may help to resolve classic dilemmas of cheaters and free-riders who threaten the long-term survival of cooperative systems. Spirituality engages ways of being that are targeted at relational, holistic, and communal awareness that facilitates healthy relationships among individuals, communities and ecosystems. The cultural evolutionary view can reveal an underlying sensibility to beliefs and behaviours that seem on their surface nonsensical to an outside observer—helping to explain why they persist across groups despite costliness to individuals. It can also help to shed light on why some religious and spiritual forms spread while others do not, providing insight into how these forms change when groups mix.

Keywords Group cohesion · Trust · Culture-gene-coevolution · Religion and spirituality · Belief and behaviour

✉ R. A. McNamara
School of Psychology, Victoria University of Wellington
600, 6140 Wellington, New Zealand
E-Mail: rita.mcnamara@vuw.ac.nz

Die kulturelle Evolution von Religion, Spiritualität und Ritualen: Ihre Bedeutung für menschliche Kooperation

Zusammenfassung Aus der klassischen, genzentrierten Sicht von Evolution ist Kooperationsverhalten ein Rätsel. Der kultur-evolutionäre Ansatz folgt einem Mehrebenen-Ansatz, indem er fragt, wie neben den Genen auch Kultur über Generationen hinweg Informationen weitergibt und adaptive Anpassungen hervorbringt. Aus der Sicht der kulturellen Evolution können Herausforderungen, die mit Kooperation verbunden sind, mit kollektiven Phänomenen gelöst werden, die sich grob unter den Begriffen Ritual, Religion und Spiritualität zusammenfassen lassen. Rituale aktivieren individuelle und kollektive neurobiologische Reaktionen, die den Gruppenzusammenhalt fördern und Vertrauen erleichtern. Rituale stimulieren gleichzeitig soziales Lernen und können Ängste verringern, indem sie neurologische Erregungszustände herunterregulieren. Religion bildet ein komplexes Bündel soziokultureller Verhaltensweisen und Überzeugungen, die die Identifikation mit der Gruppe erleichtern und dazu beitragen können, das klassische Dilemma von Täuschung und Trittbrettfahren zu lösen, die langfristig das Überleben kooperativer Systeme gefährden. Spiritualität befördert eine Lebensweise, die auf ein relationales, ganzheitliches und gemeinschaftliches Bewusstsein abzielt, das gute Beziehungen zwischen Individuen, Gemeinschaften und Ökosystemen ermöglicht. Die kulturevolutionäre Sichtweise kann die Ursachen für Überzeugungen und Verhalten, die in sozialen Gruppen trotz ihrer Kostenträchtigkeit für den Einzelnen fortbestehen, entschlüsseln und erklären, warum sich manche Überzeugungen und Verhaltensweisen verbreiten und andere nicht. Sie kann auch wichtige Erkenntnisse darüber liefern, wie sich diese religiösen und spirituellen kulturellen Formen im Laufe der Zeit verändern, wenn sich kulturelle Gruppen vermischen.

Schlüsselwörter Gruppenzusammenhalt · Vertrauen · Gen-Kultur-Koevolution · Religion und Spiritualität · Glauben und Verhalten

1 Introduction

When we look at the human world today, it is all but impossible to imagine it without pervasive, omnipresent, highly reflexive levels of cooperation. Even our most seemingly uncooperative moments of competition—be it in business, sports or war—are profoundly cooperative in the sense that each side has to cooperate with each other to compete with the opposing side. Individual conflicts are no exception; they too are structured by rules and expectations that make it possible for the competition to unfold based on the cooperation of the combatants. Taken in isolation from the rest of the natural world, it can be easy to take this level of pervasive cooperation for granted. However, understanding how we got to be this way becomes a puzzling mystery when we expand our view to even our closest non-human relatives.

The evolutionary perspective that treats humans as an outgrowth of natural processes present throughout the rest of the natural world seeks to solve this puzzle.

However, making the leap from individual, genetic inheritance to the group-level transmission of phenomena such as norms, rules of engagement, beliefs and rituals that form the backbone of human social structures around the globe and throughout history require more than can be passed on through genes alone. From the individual, gene-centric view, organisms are vessels for genes, the primary unit of evolutionary inheritance (Dawkins 1976; Williams 1966). The ‘goal’ of the gene, then, is to get as many copies of itself into the next generation as possible. If, from the gene’s-eye perspective, the only objective is to get more copies into the next generation, why would an organism ever act in a way that does not directly serve this gene?

The gene-level of inheritance can get us part of the way to resolving the puzzle of human cooperation in the sense that it can lead to the evolution of cooperative systems (systems that involve an organism taking on a cost to benefit another organism) and prosociality (behaviours that facilitate social interactions making longer-term social relationships possible, as opposed to antisocial behaviours that make sustained social interactions less likely and promote asocial lifeways) through a number of mechanisms: kin selection/inclusive fitness as well as various forms of reciprocal altruism and reputation management (Barkow et al. 1992). However, as we shall see, these mechanisms may be necessary but they cannot be sufficient for the full explanation of human cooperation and prosociality. Kin selection and inclusive fitness demonstrate how a specific gene can end up being selected for across multiple genetically related individuals as carriers of that gene, particularly in non-human species (Eberhard 1975; Foster et al. 2006; Burnstein et al. 1994). However, the extent of human cooperation with non-relatives makes inclusive fitness an insufficient explanation (Griffin et al. 2004; Hill et al. 2011; McNamara and Henrich 2017b). Reciprocal altruism, or the ability to track the record of cooperation experience with specific individuals and the memory to track one’s own reputation within a social group go further toward resolving the puzzle of human cooperation (Allen-Arave et al. 2008; Leimar and Hammerstein 2001; Kaplan et al. 2012; Brülhart and Usunier 2004). However, as group size expands to modern-day societies that number in the billions, the ability for cognitive systems to track each potential cooperation partner via reputation falls apart.

The additional cognitive and behavioural mechanisms available through culture bridge this explanatory gap, but how did these cultural forms themselves come to be? And, how did we evolve into such profoundly cultural beings?

2 Cultural Evolution as the Resolution to the Puzzle of Human Cooperation

Broadly speaking, cultural evolution is the process by which adaptations accumulate through the inheritance mechanisms embedded within and transmitted by culture. Also known as multilevel selection, dual-inheritance theory, and culture–gene coevolution—cultural evolution includes the individual psychological and genetic factors that allow for information to be transmitted across generations through culture and the products of that evolutionary feedback process (Creanza et al. 2017; Richerson et al. 2010; Mesoudi 2017; Henrich et al. 2008).

Starting with our psychological and behavioural toolkits that enable cultural dynamics for humans as the cultural ape: Psychological factors (and the genetic predispositions that may underpin them) that are implicated in cultural evolutionary processes include the attentional resources, social learning biases and predispositions towards learning from other conspecifics that appear to be at least somewhat unique to humans (Lyons et al. 2007; Brosnan et al. 2009; Jiménez and Mesoudi 2019; Mesoudi et al. 2010; Henrich 2009; Whiten et al. 2009). Products of human cultural evolution include material and non-material cultural forms such as toolkits, technologies, artefacts as well as norms, institutions, behaviours and beliefs. The accumulated learning over generations enables the ratchet effect, which makes it possible for humans to develop cumulative cultural innovations in complex toolkits, technologies and social systems that could never be invented by a single human without some degree of socialisation into the system (Legare and Nielsen 2015; Tennie et al. 2009; Mesoudi and Thornton 2018).

Importantly, forms inherited via cultural transmission pathways can be operated upon by Darwinian selection mechanisms (although these mechanisms operate in ways that rhyme with but are not a 1:1 correspondence to the dynamics that operate at the genetic level). Therefore, we can apply the logic of Darwinian selection to analyse the historical trajectories and social dynamics of sociological phenomena.

Although the exact steps we took in making the leap from our common ancestor with modern-day chimpanzees to the cultural apes we are today are not known with 100% certainty, cultural evolutionary studies of religious belief and behaviour have made great strides in mapping out much of this territory. Every known human society has culture, and every known human society has some form of supernatural belief system. Religion has long been theorised to be the foundation of humanity's remarkable degree of cooperative sociality (Peoples and Marlowe 2012; Whitehouse and Lanman 2014; Durkheim 1995; Malinowski 1948; Turner 2005). The psychological and cognitive mechanisms that lead to successful large-scale social living also appear to give rise to religious and spiritual beliefs and behaviours (Norenzayan et al. 2016a). Namely, the ability to conceptualise and perceive a supernatural agent are theorised to be related to the evolved social-cognitive functions that enable humans to infer and interpret the minds of other humans (Guthrie 1995; Boyer 2001; Atran and Norenzayan 2004; Piazza et al. 2011; Jong 2011; Bering 2006; Barrett 2011; Barrett and Keil 1996). The debate then began to focus on whether these patterns of supernatural belief and the behaviours around such a belief were a direct adaptation, a by-product of social cognition with no apparent direct adaptive benefit, or an exaptation that was later picked up on by evolution to create later adaptations across the human lineage (Sosis 2009; Murray 2010; Johnson 2009; Dawkins 2006; Boyer 2003). Arguments for the direct adaptive benefit of religion focuses mainly on its ability to foster cooperation (Sosis and Ruffle 2004; Bulbulia and Sosis 2011; Norenzayan et al. 2016a; Johnson 2009).

Cultural evolution makes the arguments for ritual, religion and spirituality as adaptations for cooperation more tenable, as the cultural transmission pathway can operate on much smaller timescales than genetics alone. Further, although evidence for genetic group selection is scant at best, cultural group selection can be seen to account for patterns of social change and intergroup dynamics (Henrich 2004;

García and van den Bergh 2011; Norenzayan et al. 2016b). This then leads to culturally selected constellations of behaviours, beliefs, norms and institutions that foster attitudes and actions within their adherents that promote cooperation, often at a net neutral benefit or even direct cost to themselves. In this map of our journey from our common chimp ancestry to the cultural apes we are today, the genesis of religious belief and behaviour complexes we call religion came as an exaptation from the social–cognition and social bonding behaviours that became directly beneficial for cooperation by providing a ‘cognitive middle-man’ to deter would-be cheaters that would otherwise break long-term cooperation when no human observer was around to punish their violations (Sterelny 2017; Norenzayan et al. 2016a; Schloss and Murray 2011a; Watts et al. 2015). Importantly, this cooperation is an expansion upon the prosocial behaviours available under more genetically oriented cooperation mechanisms such as kin detection and reputation management (McNamara and Henrich 2017b; Henrich 2016).

Another important point to consider before moving on with this map of human cultural evolution via ritual, religion and spiritual experience: as with the gene-centred view that genes could be transmitted even to the detriment of the organism that contains them, cultural forms themselves can take on adaptive dynamics of their own that do not necessarily produce a direct benefit to the individuals that hold and transmit them. Thus, a belief in a punitive, all-seeing God may have emotional and metabolic costs to the individual believer. But, if it is more likely to out-compete other beliefs that might be occupying human minds, then it is likely to persist and spread given the existing environmental constraints that promote its transmission and retention. Taking this to the cultural group selection argument, a belief or behaviour that makes the cultural group itself more likely to persist and spread (even to the detriment of individuals in the group) is also more likely to be selected. Thus, a belief in a punitive, all-seeing God who wants you to go out and tell others about Him and kill anyone who doesn’t believe in Him is likely to promote that group’s growth and spread as the belief promotes a) its own movement into new minds, b) exclusivity of cooperation with fellow believers, and c) the active elimination of minds that hold competing beliefs. Similarly, a belief or behaviour within religious and/or spiritual cultural complexes need only promote individuals’ tendencies to take on a cost for the benefit of their focal group in order for it to produce cooperation and its associated prosocial effects (a phenomenon known as parochial altruism: García and van den Bergh 2011; Choi and Bowles 2007; Norenzayan et al. 2016b). Take, for example, the Spanish Inquisition. At face value, we may not consider wholesale torture and execution of heretics and non-Christians as terribly prosocial or cooperative. However, the unifying belief among those who carried out the Spanish Inquisition propelled coordination and cooperation amongst themselves, taking on the costs of time, effort, and resources to track down, devise the trials, tribulations and executions of non-believers that could very easily have been allocated to more individually -beneficial activities such as growing food and growing their own households. The fact that many of these actions were taken by religious specialists who had explicitly given up their avenue to genetic fitness via vows of chastity further highlights the cultural inheritance necessary, as these dynamics could *not* unfold on a purely genetic level.

3 Cultural Evolution of Ritual

Ritualised behaviours are common around the world, and they appear to provide specific cognitive effects depending on how they are activated (Rossano 2009; Fogelin 2007). Although ritual and belief are often assumed to operate together, the singular focus on belief may have its cultural evolutionary roots in Protestant Christianity with less of a direct impact in other systems (Cohen et al. 2003; Cohen and Hill 2007; Taylor 2007). Ritual actions have long been linked to reduction in anxiety (Gmelch 1971; Malinowski 1948; Boyer and Lienard 2007; Homans 1941). More recent neuro-cognitive approaches show distinct effects of ritualised behaviours reducing anxiety responses, which may have formed an initial basis for their adaptive benefit in situations of great uncertainty (Lang et al. 2015; Karl and Fischer 2018). Paradoxically, impacts on individual wellbeing can be seen for both the more calm and introspective rituals such as prayer and meditation as well as the more activating, extreme rituals such as fire walking and other rites of initiation used in small-scale societies around the world (Atkinson and Whitehouse 2011; Fischer et al. 2014).

At a broader, interpersonal level, rituals that are enacted at a personal cost to the individual—such as the extreme rituals mentioned above—have the added benefit of communicating hard-to-fake aspects about the ritual performer. This effect of costly signalling through ritual is thought to have been further coopted by cultural evolution to develop more complex social systems (Xygalatas et al. 2013; Soler 2012; Sosis and Alcorta 2003; Rossano 2012). Costly ritual displays communicate the performer's otherwise unseen qualities of trustworthiness, which further promote systems of cooperation (Purzycki and Arakchaa 2013). The willingness to act at a personal cost further conveys the belief that the performer holds, making this aspect of ritual an essential ingredient in the cultural transmission of religious belief systems (Langston et al. 2018; Henrich 2009; Rossano 2012). Group rituals thus provide the context for social connections to be strengthened and patterns of shared beliefs to be either re-affirmed or challenged (Whitehouse and Lanman 2014; Fogelin 2007). At a cultural group selection level, groups that are formed on a basis of ritual demonstrations of devotion to the group are empirically observed to last longer, suggesting a direct selective benefit to forming social systems based in ritual performance (Sosis 2000).

4 Cultural Evolution of Religion

Although ritual can form discrete acts that are limited in time and space, religion often builds upon ritual to form socio-cultural complexes of rituals and beliefs (Purzycki and Sosis 2013; Purzycki et al. 2014). These belief and behaviour complexes create normative structures within cultural systems that can be the subject of cultural evolutionary processes at the level of individual beliefs and/or behaviours within the broader set, clusters or groups of beliefs and behaviours that form particular constellations of norms (McNamara and Henrich 2017a), or systems as a whole. Much of the scholarship on the cultural evolution of religion has focused on the impact of particular aspects of religious systems, especially in the form of supernatural

agent beliefs and their impact on cooperation in large-scale societies. The supernatural monitoring hypothesis and the supernatural punishment hypothesis are two approaches that help to explain the cultural evolutionary success of world religions, especially Abrahamic faiths. These hypotheses both address the gap in explanation for the scale of human prosociality beyond what is feasibly sustained by individual relationships of kinship and reputational concerns alone (as discussed above).

The supernatural monitoring hypothesis posits that religious systems with beliefs that supernatural agents are unseen observers to their every action creates a sense of being constantly observed, thus leading believers to err on the side of caution by avoiding antisocial behaviour, just in case (Johnson 2009; Bering 2006). These beliefs carry extra potency when the supernatural agents that have access to ‘socially strategic’ (information that is of interest for social interactions) and who care about what their believing constituents do provide an important baseline for sustained prosocial behaviour in large groups (Purzycki et al. 2012; Boyer 2001). If the socially strategic information is also loaded with a moralistic, in the sense that the behaviour is inherently good or bad as opposed to an idiosyncratic preference, then these supernatural interests in human morality may be even more effective for broad-scale cooperation (Roes and Raymond 2003; McNamara et al. 2021; Lang et al. 2019).

Although the mere thought of being observed can curb some antisocial behaviour (Haley and Fessler 2005), the perception of an observer alone appears to be an insufficient deterrent to bad behaviour unless that observation comes with the expectation of negative consequences in the form of punishment (Berniūnas et al. 2019). From an evolutionary game theoretic perspective, the cost–benefit trade-offs of defection (i.e. antisocial behaviour) in a community full of cooperators will always make the individual defector the evolutionarily preferred strategy. This then makes cooperative systems vulnerable to invasion by antisocial defectors who ultimately shift the balance from group-level cooperation to total defection. Adding punishment can stabilise cooperation by reducing the benefit of defection (Henrich 2006; Boyd and Richerson 1992). Theories as to how threat of supernatural punishment enforces cooperation vary as to whether it is a direct deterrent to action or whether it reduces the perceived cost to punish others among human believers (Henrich et al. 2006; Laurin et al. 2012; Schloss and Murray 2011b).

When combined with belief supernatural monitoring (especially if that monitoring is omniscient) of moral behaviour, supernatural punishment beliefs that include divine omnipotence to affect any aspect of a person’s life create a cluster of beliefs in moralising Gods (Norenzayan et al. 2016a). Cultural group selection is hypothesised to have promoted the spread of moralizing Gods (especially within Abrahamic traditions) as a result of their ability to both dissuade antisocial behaviour that would destroy the balance of cooperation and to incentivise in-group favouritism through the signalling pathways of demonstrated belief in such moralising Gods that engender trust in otherwise unknown individuals (Purzycki et al. 2016; Lang et al. 2019). This then feeds adaptive systems that build on religious display of belief through ritual, dress and other observable cues. These beliefs are hypothesised to have the capacity to motivate in-group cooperation and devotion more effectively than religious systems without these beliefs, thus making it more likely that, in times of conflict, a group with these moralising God beliefs will remain coherent and thus more suc-

cessful. This success then motivates spread of these beliefs via prestige and success bias to either conversion or immigration, adoption of similar beliefs in new religious systems via syncretism (i.e. appropriation), and through direct group-to-group conflict via greater success in warfare and active conquest of non-believing groups (i.e. colonisation and missionisation: Norenzayan et al. 2016b). Although these dynamics are most evident in Abrahamic traditions, they can be seen to apply in some aspects of other world religions such as Hinduism and Buddhism, especially in the concept of karma (White and Norenzayan 2019; Berniūnas et al. 2019; Willard et al. 2020; Purzycki and Kulundary 2018). On the other hand, studies of non-Abrahamic traditions across the Pacific suggest that the moralisation in these world religions is not the active component in creating sustained cooperation, although the threat of supernatural punishment is (Watts et al. 2015).

The impact of belief that god(s) will punish you as an individual appear to have vastly different psychological consequences compared with belief that others or that people in general will be punished for any given offence (McNamara and Purzycki 2020; Purzycki and McNamara 2016). Although beliefs in heaven and in benevolent gods have been associated with more cheating in experimental settings and with higher crime rates in cross-national data sets (Shariff and Rhemtulla 2012; Shariff and Norenzayan 2011), belief in god(s)' forgiveness and benevolence appears to be more associated with secure attachment styles, trust of others, and more willingness to take an apparent risk when interacting with strangers (Johnson and Cohen 2016; Krause et al. 2015; Johnson et al. 2016; Wilt et al. 2016). This perception of god(s) as benevolent and personally involved appears to also have correlations with more stable ecological systems that also favour secular control of otherwise existentially threatening situations, which in the long-run may reduce the adaptive pressure for moralising gods in the first place (Norris and Inglehart 2004; Zuckerman 2008; Baimel et al. 2022).

Along these lines, perhaps the biggest adaptive benefit that arises from prosocial religious belief systems is their capacity to expand the definition of who belongs within an in-group (McNamara et al. 2016). The cues of belief and belonging from adoption of these religious belief systems ride on the signalling systems utilised in ritual displays to convey information about a potential interaction partner without the benefit of direct connection through kinship or interpersonal contact and reputation (McNamara and Henrich 2017a; Hruschka et al. 2014). These expanding inner circles also make interaction across societies smoother by creating a shared normative framework for interaction. This then allows for the adaptive dynamics of individual socio-ecological settings to create locally specific forms of religious belief systems that simultaneously support social life within local conditions and with interaction across more diverse groups (Purzycki and McNamara 2016; McNamara 2020; McNamara et al. 2021; McNamara and Henrich 2017a).

5 Cultural Evolution of Spirituality

Although the cultural evolution of ritual and religion tend to focus on observable behaviours and beliefs within large, established traditions, the cultural evolution of

spirituality has the capacity to span the range from established world traditions to individual idiosyncratic practices. The spiritual dimension of these sets of beliefs and behaviours tends to be focused more on the ineffable, holistic and communal connections among and within individuals, communities and ecosystems. These include the vast array of practices that induce altered states of awareness, as developed across societies around the globe and throughout history.

Trance states induced by processes including ecstatic dance (union of synchronistic motion with sound (Nummenmaa et al. 2012; Wiltermuth and Heath 2009)), extreme rituals involving threat to body safety (i.e. the cavadee, sun dance, firewalking—see Fischer and Xygalatas 2014; Xygalatas et al. 2013; Fischer et al. 2014) and sensory deprivation are often components of high-arousal, imagistic rituals that create greater group cohesion through the shared experience of intense stimulation (Atkinson and Whitehouse 2011; Whitehouse 2002). Traditions of meditation and ritual use of medicinal plants, fungi, and animals with consciousness-altering capacities have similar abilities to induce trance states, although these are often used in more inward-focused settings to explore one's own body/mind and connection to the adjoining socio-ecological environment—even if practiced as a group (Millière et al. 2018; Palhano-Fontes et al. 2015; Krause 2018).

The adaptive benefits of these trance states have long been focused around healing and connection. Societies the world over throughout history have had practitioner specialists who engage with altered perceptions of reality and perceptual experiences of communication with unseen otherworldly beings for the purposes of healing (Porath 2008), forecasting the future (Evans-Pritchard 1937; Curry 2016), and navigating the relationships between humans and the non-human world (Eliade 1972; Narby and Huxley 2004). Some have even suggested that this capacity to spontaneously enter altered states might be an underlying individual difference that was selected for over time and can explain the relatively constant rate of schizophrenic-spectrum traits and behaviours across societies (Polimeni and Reiss 2002). Sociologically, shamanic practices are theorised to have evolved as part of the hunter-gatherer niche to capitalise on individual tendencies to enter altered states and cultural practices to cultivate them (Winkelman 1990; Singh 2018; Winkelman 2020). As societies shifted to more agrarian lifestyles, these shamans similarly shifted roles into spirit mediumship, the priestly class and as social scapegoats through witchcraft accusation dynamics. Shamans are also hypothesised to be the earliest specialisation in otherwise egalitarian societies. Their specialist knowledge of the environment in the case of practitioners working with plant and fungi inducers of trance states also perform important roles as keepers of ecological knowledge in the local system (Callicott 2013; Luna 1986; Ojalehto et al. 2017). For example, within Amazonian plant medicine traditions, curanderos (plant medicine practitioners) work directly with various plants of the forest to reconnect and maintain balance across the human and non-human forest communities and facilitate taking on the perspective of other beings in line with the local epistemological approach to understanding other minds (Reis and Pereira 2020; Škrabáková 2014; Sulkin 2005).

At an individual level, the processes and practices that evoke these altered states, although historically used primarily by specialists, do have consistent physiological, neurobiological and psychological effects. They result in individual experiences

that fuel the continued selection and evolution of these practices into new cultural forms. These trance states down-regulate the neuro-biological processes that are associated with more top-down cortical control, leading those who enter these states to access parts of the body/mind that are otherwise inaccessible to conscious, alert awareness (Brewer et al. 2011; Danielson et al. 2011; Simon and Engström 2015; Smigielski et al. 2019; Tagliazucchi et al. 2016). This reduction of top-down control facilitates increased levels of creativity through divergent thinking (Preller and Vollenweider 2018; Abraham et al. 2012), leading to novel problem-solving solutions and contributing to the recent rise in microdosing protocols among high-performing creative professionals (Lea et al. 2019; Polito and Stevenson 2019). The lower-levels of altered perceptual awareness from practices such as mindfulness meditation and microdosing can also reduce anxiety and alleviate stress, leading to the rise of mindfulness-based therapies (Lomas et al. 2015; Killingsworth and Gilbert 2010; Carmody et al. 2008). Deeper states of meditation and psychedelic usage are associated with changes in the neural pathways of attention (Chiesa and Serretti 2010; Jha and Krompinger 2007) that in turn shift one's perspective of self and interrelationships with others and with their surroundings (Farb et al. 2007; Smigielski et al. 2019; Yaden et al. 2017). These mystical experiences of expansive self have long been a hallmark of the spiritual experience (Taves 2020), and are supportive in developing a greater sense of connection within the community (Kettner et al. 2021). These experiences that reduce anxiety, reconfigure the sense of self in community and disengage loops of stress-evoking activation typically hidden below the level of awareness have also promoted the recent cultural selection of trance-inducing somatic and psychedelic therapies as break-through treatments for even the most intractable cases of severe psychological trauma (Lanius et al. 2020; Chamberlin 2019; Chi and Gold 2020; Luoma et al. 2020).

Paradoxically, the rise of secularism and decline of religious activity in modern western society also appears to in part be a cultural precursor to a rise in spirituality within those who self-identify as spiritual-but-not-religious (Willard and Norenzayan 2017). As ritual displays of religious adherence began to decrease across Europe, the resulting decline in religiosity has not emerged as a continent-wide atheism (Zuckerman 2007; Lanman 2012a; Kalkman 2014; Lanman 2010). Rather, rates of belief in paranormal and otherwise supramundane but non-religious phenomena such as ghosts, UFOs and other mythical creatures remain as high as ever (Baker and Draper 2010; Persinger 2001; Willard and Norenzayan 2013). However, given the folk nature of many of these beliefs, their correlations with education in either the current dominant form of scientism or previous dominant religious forms make it difficult to determine whether these beliefs are genuinely on the rise, on the decline, or have remained relatively steady over time.

6 Conclusion

It is perhaps indisputable that culture forms a primary mode of existence for all humans. Although the strictly genetic biological framework cannot explain the extent of human sociality encapsulated within our capacity for culture, applying a cultural

evolutionary framework to sociological phenomena provides a systematic grounding to bridge the remarkable level of human sociality into the rest of the natural world. This enables us to map out our pathway from our closest common chimpanzee ancestor to the modern cultural ape we are today. The cultural evolutionary approach to religious and spiritual belief and behaviour as a model for approaching the puzzle of human sociality can provide an important framework for decoding the dynamic processes that underpin the rise and fall of various beliefs and practices across time and space.

As mentioned above, a cultural evolutionary approach to sociological phenomena can allow us to examine how social forms change over time using the logic of Darwinian adaptive processes that rhyme with but are not exactly the same as genetic evolution. Because the units of cultural evolution are cultural forms, they do not have the same degree of discreteness as genes (although some approaches such as memetics have attempted to define such discrete units). The processes that determine whether a transmission event of a cultural form has occurred are much more akin to the social construction processes that sociologists have long identified as limitations of a strictly biological view of the human mind (Burr 2015). This affords us a number of issues that have long puzzled sociologists of complex socio-cultural phenomena such as religion.

First and foremost, a cultural evolutionary account can help to unpack the dynamics of the apparent decline of religion in the shift to modernisation, industrialisation, and secularism that has occupied sociologists for decades (Inglehart 1997; Turner 2014; Blum and Dudley 2001; Taylor 1989; Cascardi 1992; Lanman 2010). From the perspective of how we arrived into a world built on parochially prosocial moralising religions reviewed above, one might argue that the functions of religion for holding societies together have been largely replaced by functions of modern state governments (Norris and Inglehart 2004; Kay et al. 2010). Thus, with the initial adaptive pressures that may have sparked the cultural evolutionary process leading to prosocial religions removed, one could predict a decline in organised religious adherence as has been observed throughout western countries (Zuckerman 2008; Lanman 2012b). Importantly, this approach can also make sense of religious and/or spiritual social forms that persist despite intercultural contact events such as colonisation, migration, missionisation and globalisation if the initial adaptive pressures within the socio-ecological contexts where the cultural forms evolved are still present (McNamara et al. 2021; Dawson 2017; Luna 1986; McNamara 2023b). Thus, a cultural evolutionary approach can be useful in unpacking when and how syncretic forms of religious beliefs emerge when cultures mix. Cultural evolution may also help to provide a coherent analytical framework to understand phenomena such as the rise of spiritual-but-not-religious designations in otherwise secular societies, as the other impacts of connection with the ineffable still vie for space in human minds, whereas the other societal functions of religion are carried out by secular sources of power and control. This analytical framework offers a functionalist perspective that examines the adaptive value of social and cultural forms through a radical comparative perspective that spans historical times, societies and species. The power in this framework compliments the more focused sociological perspective that is often focused at a more granular level to a certain subset of specific societies.

The multilevel selection aspect of cultural evolutionary theory is particularly powerful when dealing with phenomena that impact entire societies, as it has the capacity to track the unfolding dynamics of competing forms at multiple levels of analysis. Taken in this light, the array of beliefs within a single religious community can be seen as competing variants vying with each other in a wider ecology of beliefs, norms, expectations and social structures. The power of the evolutionary biological logic at the background of this analysis is that it can provide direct connections to bio-psycho-social factors such as ecology and individual biological functions of the people in societies to help to understand why certain patterns in belief and behaviour may arise. For example, when the constraints of a harsh environment are eased through mechanisms including more stable climates, more reliable secular governmental control, peaceful interpersonal and intercultural relations, etc.—individuals are typically afforded more leeway in how far they are allowed to deviate from group norms (Gelfand et al. 2011; Jackson et al. 2019). With this greater tolerance for deviance, people have the space to both innovate new practices and beliefs while also relaxing their strict adherence to old forms, creating a proliferation in the marketplace of religious ideas (Iannaccone 1992; Finke and Stark 2005). With this new ‘adaptive radiation’ of beliefs and behaviours, a new constellation of cultural forms within the society can emerge, whereas variation across individuals continues to maintain the broader ecological dynamics of belief in the wider ecosystem or market of cultural forms. If the environmental constraints shifted to encourage more strict norm adherence again (as often happens after natural disasters or could be argued to have happened in the USA in the early 2000s—see: Bentzen 2019; Nail and McGregor 2009; Sibley and Bulbulia 2012), then the new dominant form may reach fixation as deviance is again restricted to eliminate other cultural forms.

By examining the individual and group-level benefits of ritual, religious and spiritual phenomena, the cultural evolutionary approach can begin to make sense out of otherwise apparently paradoxical aspects of social life. The analytical tools of cultural evolutionary theory can also support researchers in overcoming their own cultural biases, as it inherently asks the researcher to examine why a given practitioner or community of belief might be motivated to persist in these beliefs and practices over time, rather than merely assume that their actions are irrational and nonsensical. These tools also give us the capacity to examine broad patterns over vast areas of the globe and stretches of time to better appreciate the complexities of how psychological and behavioural systems adapt to specific environmental conditions at various times in history.

Certain ontological challenges remain for a direct translation of some aspects of cultural evolutionary theory into mainstream sociological and cultural anthropological discourses. Although the lens of evolutionary theory can alleviate some cultural biases that researchers carry with them into the research, it comes with its own history of cultural baggage. As described by Ingold (2007), many of the core components of cultural evolutionary theory taken to be parallel to genetic evolutionary processes are underdefined. Indeed, this is an active area of debate within cultural evolution. If a behaviour is taken as a unit of cultural inheritance, its cultural meaning must be co-constructed with the environments (including the human

minds) within which they are enacted. Thus, unlike a gene, a behaviour (or any other cultural form) cannot be said to exist outside of its context. This desire within the scientific and reductionist materialist monist (i.e. the ontological stance that all of reality is only constituted of material physical phenomena) makes these forms of cultural evolutionary works susceptible to inappropriately ethnocentric and oversimplified analyses of complex sets of cultural phenomena. This parallels issues of reductionism in more purely genetic lines of evolutionary analysis, as epigenetics and evolutionary developmental biology are shown to be unsupported by the evidence of dynamic developmental processes (Carroll 2006). This limitation can be redressed as cultural evolutionary theory itself is further elaborated and refined by application to contexts in which this reductionism is inappropriate and as more researchers from diverse ontological backgrounds can identify and rectify the holes in the theory (McNamara 2023a).

Where the field remains to grow is in incorporating more voices and perspectives of diverse researchers. Most of the existing work in especially the cultural evolution of religion has an implicit assumption of Abrahamic monotheism as a by-product of most researchers working in this area being from cultural backgrounds that are predominantly Western, and therefore most impacted by Abrahamic traditions. More work from scholars of different cultural backgrounds and more collaborative work with practitioners themselves can further broaden and expand the depth and accuracy of cultural evolutionary theorising about these potent and universal aspects of human experience. Thus, the field of cultural evolutionary research also has much to learn and grow from through the deep historical, ethnographic and lived-experience perspectives afforded by collaborations with sociological research perspectives.

Funding Open Access funding enabled and organized by CAUL and its Member Institutions

Conflict of interest R. A. McNamara declares that she has no competing interests.

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Rita Anne McNamara 1986, PhD, Senior Lecturer in Cross-cultural Psychology, Victoria University of Wellington, New Zealand. Fields of research: Cultural evolutionary psychology, cultural psychology, psychology of religion, social psychology, culture and cognition, theory of mind, morality. Publications: Cultural Models of Minds and the Minds of Gods. In: The minds of gods: New horizons in the naturalistic study of religion, eds. B. Purzycki and T. Bendixen. New York 2023.