Explaining Religion (Away?)
Theism and the Cognitive Science of Religion

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Abstract In light of the advancements in cognitive science and the evolutionary psychology of religion in the past two decades, scientists and philosophers have begun to reflect on the theological and atheological implications of naturalistic—and in particular, evolutionary—explanations of religious belief and behaviour. However, philosophical naiveté is often evinced by scientists and scientific naiveté by philosophers. The aim of this article is to draw from these recent contributions, point out some common pitfalls and important insights, and suggest a way forward. This proposal avoids the genetic fallacy as well as misunderstandings of the cognitive mechanisms that give rise to religious belief. In the end, it may well be that the cognitive science of religion is atheologically and theologically ambiguous; traditional philosophers of religion on both sides of the debate still have work to do.

Keywords Cognitive science of religion · Evolutionary psychology · Naturalism · Divine action

Introduction

The cognitive science of religion (CSR) is the study of a specific albeit complex set of human psychological facts: religious beliefs, feelings and behaviours. In particular, CSR is a naturalistic research programme that aims to provide general explanations for the cross-culturally recurring collection of psychological phenomena (e.g., beliefs, behaviours) associated with supernatural agents. Such phenomena include, for example, supernatural agents (e.g., gods, souls; Pyysiäinen 2009) beliefs, religious

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rituals (McCauley and Lawson 2002) and religious group dynamics (Wilson 2002). In other words, CSR is the study of human persons, not divine ones; it is the study of people's concepts of gods, not the gods themselves. As such, the question of whether or not any given god really exists goes beyond the field. However, while the cognitive and evolutionary psychologies of religious belief might not have metaphysical implications, they might well have epistemic implications for religious belief.

The discussion around these issues has only just begun, and much like everything else in this nascent field, there is a diversity of perspectives. For the most part, researchers within CSR have chosen not to engage in debates about the philosophical or theological implications of their findings; indeed, those who do tend to espouse a neutral position in which the science is 'independent of whether someone should or should not believe' (Barrett 2004, p. 123) and 'blind to [religious truth claims] and can elucidate nothing about them' (Atran 2002, ix). However, other scholars on both sides of the theist-atheist debate have recently begun to chime in to predictable effect. Anti-religious public intellectuals allude to CSR research in their efforts to 'break the spell' (Dennett 2006, p. 15) of religion, to dismiss religious belief as delusional (Dawkins 2006). In response, theistic philosophers have not only defended the neutral position outlined above (e.g., Leech and Visala 2011a, b; Murray and Goldberg 2009; van Inwagen 2009), they have even argued that CSR supports particular theological claims (e.g., Calvinist *sensus divinitatis*; Clark and Barrett 2011). Perhaps unsurprisingly, however, there have been philosophical and scientific misunderstandings by scientists and philosophers respectively, especially in popular publications; evidently, a proper meeting of minds between the cognitive science of religion and the philosophy of religion is required. The aim of this article is therefore to draw from these recent contributions, point out some philosophical pitfalls and common misunderstandings about the cognitive underpinnings of religious belief, and suggest a way forward in reasoning about the psychology and philosophy of religious belief.[1]

Cognitive Science of Religion

Drawing from contemporary cognitive science and evolutionary psychology, CSR's standard model proposes that religious beliefs and behaviours are by-products of evolutionary adaptive cognitive mechanisms; furthermore, some features of religion may themselves have conferred adherents with reproductive advantages (cf. Atran 2002; Barrett 2004; Bering 2011; Boyer 2001; Tremlin 2006). While there is still much theoretical and empirical work to be done, a plausible sketch of the evolutionary and cognitive foundations of religious belief is now possible.

Our brains evolved, much like all our other organs, by natural selection; with them, our cognitive and behavioural tendencies are shaped by various selection pressures applied in our phylogenetic past. Among the tools in our evolved psychological repertoires are: the tendency to detect agency around us and to impute mental states to agents. These were and are very important inclinations to have. In an evolutionary Pascal's Wager, it paid off to have a *hypersensitive agency detection device* (HADD),

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[1] As the extant literature focusses exclusively on the theism of the Abrahamic traditions (and indeed, more specifically Christian theism), this article will be similarly limited.

to be able to 'detect' agents under ambiguous situations. Of course, this leads to false positives, but it is better to mistake a boulder for a bear than a bear for a boulder; it is better to expend energy running away needlessly than to be mauled and masticated because of complacency. A similarly active *theory of mind module* (ToMM), which infers mental states—beliefs, desires, emotions—in other people, is crucial for social interaction, as research on autism clearly implies (e.g., Baron-Cohen 2004). Furthermore, it is important to be able to do this with scant information; people are rarely explicit and never unambiguous in telling us what they are thinking or how they are feeling.

Now, these tendencies go some way to explain why we believe in supernatural agents. Faces, for example, trigger these intuitions, and so when we see the face of a dead relative, we cannot help but feel like there is still a person—an intentional agent—lingering, surviving (see Boyer 2001; Bering 2011; Bloom 2004 for slightly varying accounts). The complex elegance of the natural world—from the growth of crops and the changing of the seasons to more sophisticated observations of biologists and physicists—are similarly automatically interpreted as products of design (Kelemen 2004). As Mary Midgley (2001) recently observed, scientists, even those openly antagonistic to religion, regularly use anthropomorphic language for natural processes: nature *selects* traits for some purpose; genes are *selfish*; the world is *cruel* or *indifferent*. These are, of course, meant as metaphors, but the fact that we cannot seem to do without them is telling. Indeed, recent research on atheists and their children suggests that these tendencies—to infer intentionality in objects and events around us, to attribute psychological functioning to the dead—are deeply ingrained (e.g., Bering 2002; Bering and Bjorklund 2004); it appears religion is 'natural' (2007), children are intuitive theists (Kelemen 2004), and atheism is only skin deep (Bering 2010).

Of course, this is not the end of the explanation. Not all the outputs of our promiscuous agency detection and theory of mind systems become gods to be worshipped and obeyed at great individual and institutional cost. Successful gods have to be memorable and transmittable; they have to be relevant, applicable to multiple domains; they have to motivate belief and concomitantly behaviour (Barrett 2004). The research on the motivational or functional drivers of religious belief is ongoing, but most of the work so far is on how religious beliefs variously facilitate social life and mitigate existential anxieties. Links between religion and morality (e.g., Norenzayan and Shariff 2008; Wilson 2002), and religion and fear of death (e.g., Norenzayan and Hansen 2006; Vail et al. 2010), for example, are actively being researched.

In a nutshell once again, the belief in gods is an evolutionary by-product of a collection of adaptive cognitive mechanisms, especially those pertaining to folk psychology. However, these supernatural agent beliefs might also confer benefits to believing individuals and communities, which increases commitment to and communication of these beliefs. Various features of CSR's standard model might carry philosophical implications for theism. First, perhaps *naturalistically* explaining religion constitutes 'explaining away'. Second, perhaps explaining religion with recourse to error-prone cognitive mechanisms counts against religious belief. Third, perhaps explaining religion with recourse to evolutionarily adaptive and developmentally normal processes counts in favour of religious belief. Each of these views, variously held and argued for by theistic and atheistic commentators, will be assessed in turn.

On (Naturalistic) Explanation and Justification/Refutation

Hume (1757/2008, p. 134) is as good a place as any to start. In the introduction to his *The Natural History of Religion*, Hume famously draws the distinction between the 'foundation [of religion] in reason' and its 'origin in human nature'. This is, of course, an example of the quite apt distinction between justification and explanation respectively; between whether (and why) we ought to believe and why we in fact believe respectively. More generally, justification and explanation are clearly not the same thing; what seems less obvious to some is that explanation does not necessarily entail either justification or refutation.

It is, or should be, uncontroversial in ethics, for example, that a successful explanation of a behaviour does not by itself entail that the behaviour is either moral or immoral. To use an oft-cited example from the evolutionary psychology literature, the move from any kind of evolutionary explanation of rape to any normative claim about rape requires an additional ethical premise (cf. Wilson, Dietrich & Clark 2003). The move from 'Rape is an evolutionarily adaptive behaviour' to 'Therefore, rape is morally acceptable/unacceptable' is a *non sequitur* without the bridging premise that 'Evolutionarily adaptive behaviours are morally acceptable/unacceptable'. Similarly, bridging premises are required even if rape were an evolutionarily maladaptive behaviour or if it were a by-product of an adaptation, and so forth. Whether or not these bridging premises are true or false, acceptable or otherwise, is, of course, up for debate; what is clear, however, is that explanations of behaviours do not by themselves entail normative positions on those behaviours. None of this is to say that explanation and justification never bear upon one another: circumstances might mitigate or aggravate, exculpate or condemn. That is, the relationship between explanation and justification is contingent and requires examination on a case-by-case basis.

As in ethics, so in epistemology: to explain a belief (or act of believing) is neither to justify nor to refute it. To assert otherwise is to confuse the 'context of discovery' with the 'context of justification' (Reichenbach 1938, p. 36). The context of discovery concerns how someone came to believe something in the origin of the belief. The context of justification concerns how someone comes to prove or defend or otherwise justify the belief. To use a famous example from the history of science, August Kekulé recounts discovering the chemical structure of benzene in the dimly lit study of his bachelor quarters in Ghent; day-dreaming because his writing was stagnant, he saw a snake seizing its own tail and behold he 'recognizes truth without knowing the evidence for it' (Benfey 1958, p. 22). Upon receiving this revelation, Kekulé worked out the implications of his new theory and marshalled arguments and evidence for it.[2] In this case, the fact that Kekulé's original idea came from a dream—which, we will assume, is an unreliable way to discover chemical structures—certainly does not make his claim that benzene has a ring structure either true or false. Under a correspondence theory of truth, at least, the truth or falsity of a proposition is independent of the conditions under which the proposition comes to be entertained by any epistemic agent (Kirkham 1992). Furthermore, the belief that benzene has a

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[2] The historical veracity of this account is contested but is irrelevant for the illustrative purpose for which it is used here.

ring structure is also not irrational, despite its questionable provenance; it is not irrational because we can provide evidence and construct persuasive arguments for this belief. Whether a belief is reasonable, then, depends on the context of justification, not the context of discovery. Although Kekulé's exhortation, 'Let us learn to dream, gentlemen, then, perhaps we shall find the truth', might seem unwise to epistemological reliabilists, his counterpoint should be reassuring: 'But let us beware of publishing our dreams till they have been tested by the waking understanding' (Benfey 1958, p. 22). Again, none of this is to say that explanation and justification are necessarily unrelated: doxastic conditions might well have epistemic implications. There are surely conditions under which we might consider certain claims *prima facie* trustworthy or untrustworthy; even then, however, the truth of and necessity for such claims are independent of the conditions under which they are initially made. Rather than committing the genetic fallacy or resorting to *ad hominem* speculation, responsible epistemic agents should evaluate the evidence and arguments for the claim in question.

Applied to the relationship between religion's 'foundation in reason' and its 'origin in human nature' (Hume 1757/2008, p. 134), between the reasonableness of religious belief and the success of explanations of religion, the lesson is clear: explanations of religious belief do not by themselves entail justifications for or refutations of religious belief. Certain kinds of explanations (e.g., naturalistic explanations, as we shall see) might undermine certain kinds of religious belief, but—as the Kekulé case illustrates—if there are sound arguments for religious belief, explanations of such belief are epistemically benign. Indeed, after arguing that religious beliefs are particularly susceptible to 'evolutionary debunking arguments', Wilkins and Griffiths (in press p. 206-207) conclude, 'But debunking is not disproving. If there are independent reasons for religious belief, their cogency is not removed by the fact that religious beliefs have evolutionary explanations.'

Now, having said that successful arguments justify religious belief regardless of how the belief arose to begin with, *naturalistic* explanations seem especially problematic for religious believers; indeed, this is precisely because they potentially undercut traditional arguments for religious belief. *Prima facie*, naturalistic explanations and theological explanations of phenomena in general appear to be in mutually exclusive competition. Indeed, unfavourable comparisons of theological explanations to naturalistic or 'scientific' explanations are often used in arguments against religious belief. Whether or not intellectualist theorists of religion are right in claiming that religion emerged to explain or otherwise make sense of events, mundane and marvellous, terrific and terrifying, Western philosophers of religion have certainly relied on the putative explanatory power of theism in their attempts to justify belief in God. Traditional cosmological and teleological arguments for theism, for example, may be construed as arguments that the existence of God is the only or best explanation of facts about the world, such as the contingent existence of the physical universe or the functional complexity of biological features (see Oppy 2006 for review). In addition, arguments from miracles and religious experiences posit unusual events to be explained by the existence and activity of God. In these cases, naturalistic and theological explanations are in competition: if naturalistic explanations suffice as the best explanations for these phenomena, these arguments for theism are defeated, as parsimony dictates a preferences for the more ontologically

economical explanation, and theism includes one additional supernatural agent than does metaphysical naturalism.[3]

At least in principle then, successful naturalistic explanations of religious belief have the potential of defeating particular kinds of theistic arguments: theistic arguments that religious belief itself is only or best explained by the existence and activity of God. There is, however, an important difference between general and specific explanations of religious belief.[4] A successful naturalistic explanation of a particular religious belief system, R, might count against R if it insists on its own supernatural origins. However, a successful naturalistic explanation of religious beliefs in general or, more to the point, of a propensity toward religious belief does not count against R in quite the same way. To explain a tendency toward R-like beliefs is not to explain R in particular; to explain why people have a tendency to believe in supernatural agents is not to explain why a particular religious believer holds the particular religious beliefs she does. Before the religious believer is too comforted by this, however, it is important to note that general theories can often easily be adapted to explain special cases.[5] For example, a plausible account of the transmission of costly religious beliefs, such as those offered by CSR, undermines Thomas Aquinas's claim in Summa Contra Gentiles that the 'wonderful conversion of the world to the Christian faith is the clearest witness of the [miraculous] signs given in the past'. That is, CSR might well be able to show how costly religious beliefs like those accepted by early Christians could spread without wondrous signs, such as the miracles reported in the New Testament. Now, there might be independent justifications for believing the miracles accounts in the New Testament, but a naturalistic explanation of the spread of Christianity such as that potentially offered by CSR would refute any attempt to establish the veracity of these New Testament accounts on the basis of the allegedly surprising spread of Christianity. Indeed, CSR achieves this by rendering the spread of Christianity unsurprising. Of course, a defender of Aquinas may protest here and claim that there are particularities about the origin and spread of the Christian faith that are not explicable by CSR (or any other combination of naturalistic theories); to say that general explanations of religious transmission can often be successfully applied to special cases is not to put a silver bullet in all arguments of this kind. It is just to warn against making too much out of the distinction between general theories and applications of theories to specific cases.

In summary, naturalistic explanations for religious belief such as those offered by CSR may be applied to particular religious beliefs (and religious belief systems), and

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[3] There are, it must be admitted, various ways to apply Ockham's razor, and whether or not successful naturalistic explanations of phenomena are indeed more ontologically economical than their theological counterparts may well turn on one's understanding of ontological economy. While defending this view of ontological economy goes beyond the scope of this article, I am assuming 'ontological-type economy', which suggests that we ought not posit more types or kinds of entities than are necessary. If, for example, an explanation that only requires physical entities will do, we ought not invoke non-physical entities, even if this would reduce the total number of entities, physical or otherwise.

[4] (Leech and Visala 2011a, b) also draw this distinction, but invoke it in their discussion of the alleged unreliability of the cognitive mechanisms that produce religious beliefs; we shall turn to this later in the paper.

[5] Indeed, there is a trivial sense in which all scientific theories are explanatory (insofar as they are explanatory) in this 'general' way; application to any specific case requires the consideration of the multiple causal factors that are inevitably in play and this, in turn, may require the application of other theories.

insofar as they are, they challenge theological explanations as naturalistic explanations are more parsimonious than theological ones. However, not all religious belief systems insist on their own supernatural origins; furthermore, some that do might contain features that are inexplicable within a naturalistic framework. Finally, naturalistic explanations of religious belief, as with explanations of religious belief in general, are toothless if there are good independent reasons for religious belief.

On Levels of Explanation

In the previous section, we have seen that naturalistic and theological explanations of phenomena, religious or otherwise, may conflict and, insofar as they do, might render theological arguments redundant: Ockham's razor dictates a preference for the more ontologically economical option (i.e., the one without an additional supernatural agent). However, this is only true when naturalistic and theological explanations occur at the same level of explanation.

Current theoretical and empirical research in CSR is carried out at multiple levels of explanation. Much of the work that has been discussed here has focussed on our cognitive architectures and processes, on how our minds are structured to process information like religious concepts. This level of analysis is important, but leaves unanswered questions about how our minds got to be that way. Such questions are to be answered at developmental and, further, at evolutionary levels. The emphasis on theory of mind, for example, draws heavily on developmental research about the ToMM as a maturational natural cognitive system (Barrett and Lanman 2008; McCauley 2011); there has also been increasing speculation about the evolutionary adaptiveness of ToMM (e.g., Bering 2011). Similarly, the work on anthropomorphism and teleo-functional reasoning has lent itself to developmental (e.g., Kelemen 2004) and evolutionary analyses (e.g., Guthrie 1993). In none of these cases do the different kinds of explanations—cognitive, developmental, and evolutionary—compete, occurring as they do at different levels. The researches at different levels do constrain each other, of course: developmental and evolutionary theories have to account for actual cognitive structures and processes, and cognitive theories have to make developmental and evolutionary sense. However, the fact that there is a successful evolutionary theory of religious phenomena would hardly count against developmental or cognitive theories.

One way to construe the relationship between these more or less proximate or ultimate explanations is in terms of the transitivity of causation. Our incorrigible religiosity might be caused by (say) our promiscuous anthropomorphism and teleology, which in turn are determined by the way in which our genes and environment interact in development, which is in turn a product of natural selective processes in our phylogenetic history. That is, there are evolutionary causes of developmental facts, and developmental causes of facts about cognitive architecture and process and, finally, cognitive causes of religious phenomena. In this case, cognitive explanations of religion are proximate explanations, whereas evolutionary explanations of religion are ultimate explanations, causing religious phenomena via developmental and cognitive variables. All of this is just to say that discussion of multiple levels of analysis is far from foreign in CSR.

Like naturalistic explanations, theological explanations might occur at any level, might be proposed as more or less proximate or ultimate explanations. Creationist and Intelligent Design theories of biological facts, for example, occur at the same level as Darwinian theories; they therefore compete and conflict at that level. Theistic evolutionist theories, on the other hand, occur at a more ultimate level and purportedly account for why life on earth evolved as it has. Indeed, theistic conceptions of God in the Western philosophical tradition imply that theists are, or ought to be, much more concerned with theistic ultimate explanations than theistic proximate explanations. Cosmological arguments for the existence of God, for example, seek to establish God as the ultimate cause of all events and entities. In this vein—as implied by the definition provided above—theistic philosophers of religion conceive God as creator and sustainer, asserting that 'everything that exists at each moment of time (apart from [God]self) exists because, at that moment of time, [God] makes it exist, or permits it to exist' (Swinburne 2004, p. 7) and that 'created things are totally dependent on God for their existence from moment to moment' (Peterson, Hasker, Reichenbach, & Basinger 2003, p. 65). Now, these claims about the reliance of all things—the existence and occurrence of all entities and events— on God are not meant to deny the causal efficacy of natural laws or human action. Instead, God is said to work through such, more proximate, causes to achieve God's ends (e.g., Edwards 2010).

In the same way that cognitive, developmental and evolutionary explanations of religion do not compete with one another, theological explanations do not compete with either of them insofar as they occur at a still higher level of explanation than do evolutionary theories. If, for example, kalām cosmological arguments for the existence of God were successful in establishing God as the first cause of the universe, of its initial conditions and concomitant laws of nature (e.g., Craig 1979), God would, by the transitivity of causation, be the ultimate cause of all subsequent entities and events, including the evolutionary, developmental, cognitive, and indeed contextual variables that lead to religious belief. If such an argument were successful, the theist might say that God worked through these natural processes to cause religious belief. There is, of course, no guarantee that such an argument could be successful; there is no guarantee that it makes sense to ask questions about ultimate causes or that a theological explanation will turn out to be the best one for such questions. The evaluation of such theistic arguments are certainly beyond the scope of this current project, but must be undertaken for a fuller analysis of the implications of any naturalistic explanation of any phenomenon for theistic or religious belief.

On the Error-Proneness of Religious Cognition

Although to explain religion is not necessarily to explain it away, naturalistic explanations of religion do raise problems for certain kinds of religious belief; these problems are not insurmountable, but they have to be met. So, as a simply *qua* naturalistic research programme, CSR poses some challenges for religious faith. Furthermore, certain specific features of CSR also seem to imply the irrationality of religious belief. In particular, the language used in CSR research—of 'hypersensitive' (Barrett 2004) and 'promiscuous' (Kelemen 2004) cognitive mechanisms—suggests

that the psychological causes of religious belief are error-prone and that religious beliefs are false products of recklessly trigger-happy cognitive mechanisms, a 'set of seductive cognitive illusions' (Bering 2011, p. 8). Of course, as previously discussed, the fact that a belief is formed by an unreliable belief-forming process or mechanism does not render it false; it might, however, give us cause to be sceptical of the belief, at least until we have independent reasons for the belief. As before, if there are successful independent arguments for a given religious belief, the fact that it originated from error-prone mechanisms is something of a red herring. Even this aside, however, it might be premature to uncritically accept the premise that the cognitive faculties that ostensibly produce religious beliefs are unreliable or error-prone.

Despite the rhetoric, most CSR theories argue that religious beliefs are products of properly functioning evolutionary adaptive and currently indispensable cognitive mechanisms. The way we detect agents (HADD; e.g., Barrett 2004; Guthrie 1993) and infer mentation (ToMM; e.g., Bering 2011; Baron-Cohen 2004) and how category-based information is triggered automatically (Boyer 2001; Fazio 2001) under evidentially ambiguous circumstances were and still are eminently useful tendencies. The hypersensitivity of these cognitive mechanisms is hardly a 'design' flaw; rather, our ability to detect agency and infer psychological states and generate category-based expectations quickly with small, fragmented pieces of information makes normal human activities such as hunting and farming as well as interacting with strangers and loved ones possible. Our everyday beliefs—and indeed, our scientific beliefs—are necessarily under-determined by data, and this is, for the most part, a patently good thing for human life, survival and reproduction.

Rather than thinking of this suite of cognitive mechanisms as being error-prone by definition—'a particular built-in irrationality mechanism', as Dawkins (2006 p. 184) puts it—it is perhaps more accurate to think of them as truth-tracking mechanisms that are able to generate useful evidentially underdetermined beliefs (e.g., about the presence of agents and about agents' mental states). However, like any other aspect of our cognitive faculties, these mechanisms are fallible and their reliability in any given context is a matter for empirical investigation. As it turns out, these cognitive mechanisms can and do commit false positives, detecting agency and inferring mentation in their absence, generating false category-based expectations; this is not in dispute and has been demonstrated by our own experiences and previous research.

However, it is in some cases very difficult to verify or falsify these generated beliefs. Take, for example, the intuitive belief generated by ToMM that other human beings have rich mental and emotional lives. The infamous 'problem of other minds', for example, represents a challenge for this common sense belief by raising the possibility that other people might well be philosophical zombies, non-conscious automata (Chalmers 1996). Never mind that immaterial souls, even our belief in others' conscious experiences, are not obviously justifiable. At any rate, while it is certainly the case that these evolved and currently adaptive cognitive mechanisms sometimes commit false positives, it is equally certainly unclear how error-prone they are and whether any given output is a hit or false positive. We might freely assume that all supernatural agents that we detect are false positives, of course, but this would simply beg the question unless there is good reason for such an assumption. It certainly does not follow from the theoretical and empirical research on HADD,

ToMM and other such cognitive mechanisms that supernatural agent beliefs are (or even probably are) false positives.

According to these cognitive theories of religion, the mechanisms that produce religious beliefs are not orthogonal to truth; instead, they are truth-tracking mechanisms, albeit fallible ones. Purely functional and evolutionary adaptationist analyses of religion, on the other hand, tend to posit benefits conferred onto believers that are orthogonal to truth-seeking considerations. Terror Management Theory, for example, does not suppose that our tendency to construct and defend worldviews that confer the assurance of literal or symbolic immortality is one that is particularly concerned with correspondence with reality (Vail et al. 2010). Wilson's (2002) group-selective analysis similarly suggests that it is 'practical realism based on behavioral adaptedness' that explains the evolutionary success of religion and not 'factual realism based on literal correspondence' (p. 228). Indeed, on these views, the mechanisms that give rise to religious belief are either orthogonal to truth concerns or, indeed, antithetical to them. Given the evidence that positive illusions are important for psychological well-being (Taylor, Kemeny, Reed, Bower, & Gruenewald 2000), it might be reasonable for theories that emphasize the psychological benefits of religious belief (e.g., TMT) to construe religious beliefs as promoting positive illusions (e.g., biased evaluations). At a glance, then, such functional or adaptationist theories of religion perhaps seem more threatening to religious belief than are the cognitive or cognitive-motivational theories discussed above. Even here, however, independent arguments for religious belief may nullify the threats posed by these causal explanations of religion.

On the Naturalness of Religious Cognition

So far, we have seen that CSR theories of religion—that is, naturalistic, evolutionary, cognitive-motivational explanations of the persistent, pervasive belief in supernatural agents—are perhaps less problematic for religious belief than they appear, especially if there are independent reasons for holding those religious beliefs. There is, of course, a long history of critical reflection for such reasons for theism, for the belief in God, as construed by Jewish, Christian and Muslim theologians and philosophers, the evaluation of which is beyond the scope of this article.

On top of theism's relative immunity from arguments from CSR theories of religion, by virtue of its emphasis on God as the ultimate cause, creator and sustainer of all things, it is also consistent with the naturalness of religion thesis, the notion that supernatural agent beliefs are maturationally natural beliefs that arise 'through the ordinary functioning of human biological endowment in ordinary human environments' (Barrett and Lanman 2008, p. 113; McCauley 2011). The consilience here is effected by the widely accepted doctrine that God is interested in somehow being in relationship or interacting with human beings. This theological assertion is uncontroversial among most Jewish, Christian and Muslim lay believers, philosophers and theologians; all three religious traditions stress the importance of a personal or collective relationship with God, emphasise God's revelatory activity (e.g., the giving of the Mosaic Law, the Incarnation in Jesus Christ, the revelations to the Prophet Muhammad at Hira) and have long histories of natural theology. If God is indeed interested in relating to us, then God would have to make religious belief psychologically possible.

Theists should expect God to enable human beings to relate or interact with God, to believe in God and to attribute some experiences to divine relational acts. Indeed, it would be terribly surprising if a God who is ostensibly interested in relationships with human beings did not enable human beings to interpret any experiences as divine acts, did not provide any psychological tendency toward belief in supernatural agents. Such a God would be like an ostensibly loving parent who never provides any communicative or epistemic access to her child. Furthermore, such a state of affairs would greatly exacerbate the problem of divine hiddenness (Howard-Snyder and Moser 2001). Indeed, the fact that we have a natural tendency to interpret some of our experiences theistically seems to mitigate this traditional challenge to theism.

Clark and Barrett (2011, p. 11) have recently taken this line of argument further by arguing that the various cognitive mechanisms that converge to produce intuitive religious beliefs make up a 'god-faculty', which is consistent with the Calvinist doctrine of *sensus divinitatis* in which God has imbued human beings with an innate sense of the divine, albeit an ambivalent and inchoate one that may manifest in theologically divergent beliefs across different individuals and cultures. That is, they propose a theological explanation for the maturational naturalness of religious belief that is consistent with a naturalistic one; indeed, they propose that this theological explanation is bound to be an ultimate explanation, mediated by evolutionary and psychological factors more familiar to science. Just as an atheistic interpretation of CSR depends largely on failure of arguments that God is the ultimate cause 'of any universe there may be' (Swinburne 1995, p. 314), so this theistic (indeed, Calvinist) interpretation of CSR depends on the success of such arguments.

Conclusion

Over the last two decades, the cognitive science of religion has continued to generate testable hypotheses about the development and evolution of various aspects of religious affect, behaviour and cognition. The progress made thus far has brought us closer than ever before to understanding where religion—this pervasive and persistent collection of psychological phenomena centred around supernatural agents, which can simultaneously lead to such altruism and atrocity, such compassion and cruelty—comes from. And with an increasingly better view of the cognitive, motivational and evolutionary underpinnings of such existentially significant concepts—gods and souls and afterlives—which human beings seem to share all across the world and throughout history, it is difficult not to ask whether any of these beliefs are true, are justified. Somewhat counterintuitively, and perhaps a little disappointingly, these recent advancements in our scientific understanding of the causes of religious belief turn out to have very little to say about the veracity of those beliefs. The philosophical and (anti)theological hard yards still have to be done.

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