

THE COGNITIVE SCIENCE OF RELIGION: IMPLICATIONS FOR THEISM?

by David Leech and Aku Visala

Abstract. Although the Cognitive Science of Religion (CSR), a current approach to the scientific study of religion, has exerted an influence in the study of religion for almost twenty years, the question of its compatibility or incompatibility with theism has not been the subject of serious discussion until recently. Some critics of religion have taken a lively interest in the CSR because they see it as useful in explaining why religious believers consistently make costly commitments to false beliefs. Conversely, some theists have argued for the compatibility of religious belief with basic CSR results. In this article, we contribute to the incipient discussion about the worldview relevance of the CSR by arguing that while a theistic reading of the field only represents one interpretative option at most, antitheistic claims about the *incompatibility* of the CSR with theism look like they may be harder to maintain than first appearances might suggest.

Keywords: atheism; by-productism; cognitive science of religion; models of explanation; psychological reductionism; theistic evolution; worldview implications

Although the Cognitive Science of Religion (CSR), a current approach to the scientific study of religion, has exerted an influence in the study of religion for almost twenty years, the question of its compatibility or incompatibility with theism has not been the subject of serious discussion until recently.¹ The incipient discussion of these issues has been motivated in large part by the fact that the standard CSR account, although not unambiguously endorsed by them, has recently featured in public atheists Richard Dawkins's *The God Delusion* (2006) and Daniel Dennett's *Breaking the Spell* (2006) as impressive new evidence of the mere naturalness of religion. Although neither author makes a step-by-step argument for the incompatibility of CSR with theism, their indirect arguments to this effect can appear to gain plausibility from the existence of a new scientific account purporting to offer a powerful explanation of the naturalness of religious beliefs.

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We argue in this article that a closer consideration of the implications of CSR for theism removes some of the *prima facie* plausibility of this type of argument. As a consequence, while the CSR is plainly compatible with atheism, at the same time it may fail to be incompatible with theism in any problematic ways. If this is the case, the CSR may carry no implications interesting enough to dent positions on either side of the theism-atheism debate.

BRIEF SURVEY OF CSR VIEWS

Before turning to our argument it will be helpful to recall some of the basic theoretical assumptions and contributions of the CSR, and introduce some relevant distinctions.

The CSR standard explanation of religion draws on the cognitive sciences to explain how pan-human features of human minds—namely, certain postulated nonconscious cognitive mechanisms or “mental tools”—constrain religious beliefs and behaviors, and how particular religious, cultural, and environmental factors modify cognitive defaults.² Prominent CSR researchers such as Scott Atran, Pascal Boyer, and Justin Barrett propose that these mental tools significantly constrain religious beliefs; that the “beliefs” they cause are not normally accessible to consciousness and voluntary modification; and that religious beliefs are evolutionary by-products of the natural and simultaneous functioning of these tools (“byproductism”).³

Two theoretical contributions in particular do much of the heavy lifting in CSR explanations: (1) Boyer’s cognitive optimum theory of religious concept transmission known as minimal counterintuitiveness (MCI) theory (Boyer 1994; 2001) and (2) Justin Barrett’s hypothesis of the existence of a (hypersensitive) agency detection device or “HADD” (2004).

(1) Boyer’s MCI theory predicts that concepts that are only minimally counterintuitive will transmit between minds more successfully than those that are merely intuitive and those that are very counterintuitive. Religious concepts that are interesting and memorable but not too counterintuitive for memorization will transmit more easily from one human mind to the next. Minimally counterintuitive religious concepts are optimally supported by the nonconscious mechanisms of human memory that favor the acquisition and transmission of certain religious representations over others. One consequence of the MCI theory is the “theological correctness effect” identified by Barrett (2004): if highly counterintuitive religious ideas—typically, theological ones—are explicitly taught, they will tend not to be acquired or to spread as successfully among their target audience as less counterintuitive ideas. In other words, religious concepts that involve

massive violations of humans' innate "ontological categories" will not transmit successfully.

(2) Barrett's hypersensitive agency detection device, or HADD, is his name for a postulated cognitive mechanism that accounts for the generation and frequency of MCI religious concepts in culture. CSR, drawing on the work of anthropologist Stuart Guthrie (1993), posits a human perceptual bias for (nonreflectively) over-detecting agency in the environment. This perceptual bias is presumed to be adaptive, since it reduces the risk of unexpected encounters with predators. Because this tool is *hyper* sensitive, it is prone to detect agency in the environment (including assumed supernatural agency) given very limited evidence of agency. HADD is hypothesized to contribute to the formation of religious concepts in situations of high urgency, for instance, identifying an ambiguous form such as a shadow as an agent, and in situations relating to death.⁴ Where no natural agents can be discovered, invisible MCI agent concepts are liable to turn into supernatural agent concepts.

MCI and HADD alone do not constitute the complete CSR "mental basement" explanation of how religious beliefs are formed and successfully transmitted. Agentive beliefs formed by the triggering of HADD also activate a further postulated cognitive mechanism—Theory of Mind, or "ToM"—which additionally attributes minded qualities such as belief states and desires to these supposed agents. The supernatural representations thus generated are also supposed to be inference rich and elicit powerful affective reactions, thus further embedding themselves in the minds of the religious community. According to CSR, the combination of these factors constitutes a powerful explanation of the prevalence of religious beliefs in the world and their ease of transmission across cultures.⁵

WORLDVIEW NEUTRALITY, PARTISANSHIP, AND RELEVANCE

We can introduce a distinction at this point that will be helpful for structuring subsequent argument by asking whether this CSR standard explanation is (1) worldview neutral or worldview partisan or (2) religiously relevant or irrelevant for theism. Let us define a "worldview" as a set of propositions about the world. We can further distinguish two subsets of propositions (A, B) within this set, where the preservation of the propositions of subset A would be essential for the survival of the worldview, whereas the propositions in subset B could be modified or rejected without jeopardizing its survival. Allowing for a gray area where it will not be immediately clear to which subset certain propositions should be assigned, it nevertheless seems clear enough in the case, for example, of theism that the proposition "there is a God" must fall under (A), while "God parted the Red Sea by an act of special providence," for a great many theists at least, can fall under (B). Likewise, in the case of atheism, "there

is no God” must fall under (A) while “there are no abstract objects,” for some atheists, can fall under (B). (There are plenty of theists who do not necessarily believe that God parted the Red Sea by special providence, and there are atheists who do not necessarily believe that abstract objects can’t exist, since the admission of their existence doesn’t undermine disbelief in God as such, even if it may not fit with certain renderings of naturalism.)

A scientific discipline or a theory can be said to be worldview neutral if it does not explicitly commit itself to the A subset of propositions of a particular worldview position in the formulation of its theories. By contrast, an example of a worldview *partisan* theory would be a theory that would be explicitly based, say, on atheist or theist assumptions (e.g., Intelligent Design, which makes explicit appeal to the existence of a God, or at least a nonhuman intelligence, in the formulation of its theories).

By contrast, let us say that a scientific discipline or a theory is religiously relevant for some particular religious view if its theories seem to require a modification or rejection of one or more propositions in the B subset of a given religious worldview. With this distinction to hand, we can therefore say about a scientific theory *x* that it may be worldview neutral with respect to religious worldview *y*, since its being true is consistent with the nonnegotiable A subset of propositions of worldview *y* also being true, while it nevertheless has religious relevance for the latter, since it may force a modification or rejection of one or more propositions in the B subset of *y*. Assuming this distinction, it therefore makes sense to say that for a given religious worldview, it is possible for a theory to be both worldview neutral and religiously relevant at the same time.⁶

Turning, then, to the CSR, there are three possibilities regarding the relation between CSR theories and any given religious worldview: either the theories are (1) compatible with subsets A and B of the religious worldview, or (2) they are incompatible with subsets A and B, or (3) they are compatible with subset A but not with one or more propositions in subset B. Let us call (1)—the claim that the CSR does not presume the truth or falsity of any of the religious beliefs it studies—that is, that it is worldview neutral and religiously irrelevant—the “religious agnosticism thesis.” This thesis entails that when the CSR is studying religion, the truth or falsity of religious claims is irrelevant: the same explanations go for both true and false beliefs. Secondly, let us call the opposite of the religious agnosticism thesis (2)—namely, the claim that when we explain religious beliefs cognitively, we need explicitly (or implicitly) to assume that at least one of the religious beliefs in the subset A of propositions are false (worldview partisanship)—the “falsity of religious beliefs thesis.” Thirdly, let us call the claim (3) that CSR theory is inconsistent with, and therefore renders necessary the modification or rejection of at least one proposition in the subset B of propositions within a religious worldview, the “religious relevance” thesis.

KEY CSR THEORISTS ON WORLDVIEW NEUTRALITY

Armed with these distinctions, we can firstly turn to the views of the chief CSR theorists regarding the broader worldview implications of their field, since these provide a convenient jumping off point for further consideration of the issue. *Prima facie*, CSR researchers' claims seem to range between (1) and (2) as defined above. These authors usually appear to accept the "religious agnosticism thesis" (1) according to which there is no need to build claims about the truth or falsity of religious views into any of the explicit formulations of CSR theory. Occasional comments, however, might seem to give a contrary impression that some of these writers might equally tend toward the "falsity of religious beliefs thesis" (2) and suppose that CSR theory must be committed to atheism.

Take Atran, for instance. In the preface of his *In Gods We Trust*, he briefly observes that the cognitive perspective is agnostic toward religious truth claims, stating that "[t]he chosen scientific perspective of this book is simply blind to them and can elucidate nothing about them—so far as I can see" (Atran 2002, ix). However, other claims of his sound like they may contain assumptions inconsistent with the "religious agnosticism thesis." For example, Atran appears to claim in places that the counterintuitiveness of religious ideas is tantamount to "counterfactuality": when religious ideas violate our innate and modular expectations about ontological categories, they necessarily become counterfactual. (What precisely the term "counterfactual" is supposed to mean here is unclear, but appears to make reference to falsity.⁷) Furthermore, in addition to the counterfactuality claim, Atran also makes a separate claim that religious beliefs do not strictly include propositions at all, but rather some kind of "quasi propositions" that have no proper content. He writes that "religious quasi propositions may have *truth value* (e.g., Baptists believe that "after you die you either go to Heaven or Hell" has truth value), but they are *not truth-valuable* in the sense of being liable to verification, falsification, or logical evaluation of the information" (2002, 95). Again, these passages are somewhat unclear, but they seem at least to contain the (non-worldview neutral) assumption that religious claims are not meaningful (see Atran 2002, 93–95). However, if—as it seems we must—we class the religious believer's (meta-) claim that their propositions have truth value as a subset A type belief, Atran's claim appears to be not genuinely agnostic, but rather endorsing the "falsity of religious beliefs" thesis, since he affirms that the crucial A subset (meta-) belief "'There is a God' has truth value" is false.

We also appear to find a similar range of claims in Boyer. While in places he maintains a worldview-neutral position, he sometimes appears to imply that it is the business of the CSR to explain why belief in *imagined* agents is so widespread in human cultures. "The question is," he writes, "why . . . some concepts of imagined entities and agents rather

than others matter to people?” (Boyer 2002, 68). In several different places in his writings, he explicitly states that “[r]eligious notions are products of the supernatural imagination” (2003, 199).⁸ Once again these passages are somewhat unclear. It is true that the involvement of imagination in religious thinking (as in almost all domains of thinking) does not just as such say anything about the latter’s truth-tracking quality, but *prima facie*, talk of “imagined entities” without relevant further qualification can sound like an endorsement of a “falsity of religious beliefs” thesis.

Whereas Boyer and Atran are somewhat vague in their judgments on this issue, another chief CSR theorist, Justin Barrett, has tried to show that the falsity of religious beliefs need not be assumed. Barrett has more consistently and unambiguously defended the religious agnosticism thesis as well as the idea that the results of the CSR might actually support some theistic beliefs. Barrett maintains that what CSR shows is that religious beliefs are psychologically comparable with many other beliefs that are held true. As in the case of these ordinary beliefs, religious beliefs are products of cognitive systems that we normally hold to be reliable. He concludes that “[t]hese observations should reveal that I find the CSR independent of whether someone *should* or *should not* believe in God” (Barrett 2004, 123).

This survey of the claims of Atran, Boyer, and Barrett, who represent some of the main architects of the “standard model” of CSR explanation, seems to suggest the following: although the apparent vacillation in views makes any definite claims problematic, it looks like CSR theories, although perhaps tending toward formulation in terms compatible with the religious agnosticism thesis (1), have not received unambiguous formulation in the works of their chief theorists.

Strict Naturalism and Atheism. While the aforementioned CSR researchers themselves appear to be vague on the issue of the compatibility or incompatibility of the CSR with theism, and may disagree among themselves about it, the different external consumers of CSR theory are more unambiguously divided. As a result, we get a series of possible positions on the worldview implications of CSR that can be arranged from antireligious to religiously neutral.

At the most antireligious end, CSR has been associated with strong forms of naturalism and subsequent atheism (Wiebe 2005; Dennett 2006; Slingerland 2008a; 2008b). However, it is far from obvious that it must be accompanied by those assumptions: it seems perfectly possible to accept the theoretical contributions of CSR and its background theories while espousing broader or more minimal forms of naturalism.⁹

The strict naturalist reading of CSR is based on three core claims. The first claim is methodological and epistemological in nature and it states that only science can provide us with knowledge about reality

and, therefore, scientific knowledge has priority over all other ways of obtaining knowledge. According to this claim, human action and its recurrent patterns, such as societies, languages, religions, and cultural artifacts, should be understood as parts of biological and physical nature. In addition, the advocates of this view normally argue that natural scientific methodology should be accepted in social sciences and humanities more wholeheartedly than before. The role of Darwinism as a general framework is usually emphasized (e.g. Dennett 1995). The second claim is ontological and it states that only “matter in motion” is real. The strict naturalist is usually committed to some form of physicalism that claims that all entities consist of parts that are ultimately material or at least reducible to entities and processes postulated by current physical theory. Physicalism leads to the third claim according to which intentional explanations and intentional states cannot be included in an ultimate description of the world. This claim would ultimately eliminate all teleological explanations such as rational explanations (folk psychological accounts) of human action.

It is true that the aforementioned three core assumptions of strict naturalism do not logically entail rejection of all religious positions. Some forms of pantheism could probably be made compatible with such a view, but given strict naturalism, it is difficult to see how theism could be true. We assume here that theism involves the claims that (1) God is nonphysical and exists (thus contradicting physicalism) and (2) actively works in the physical world (contradicting physicalism and [its] elimination of teleological explanations).

Broad Naturalism and Methodological Naturalism. Although the aforementioned scholars are inspired by strong forms of naturalism, there do not seem to be any obvious objections to combining the CSR with broader conceptions of naturalism. The advocates of nonreductive materialism or emergent materialism usually claim that although the world is materially constituted, it includes complex entities and processes that cannot be explained by physical causes alone or causes reducible to physics. Thus emergent materialists deny or reformulate the causal closure claim to allow “causal power” to higher level states.¹⁰

CSR can readily be interpreted in terms of the aforementioned broad (nonreductive or emergent) naturalism and/or methodological naturalism. According to Michael Murray’s view of the CSR, we need not assume that religious beliefs are false, because the “truth-question” is basically outside CSR theory. In addition to rejecting the three core claims of strict naturalism, he claims that there is no necessary connection between the psychological and biological origins of theistic beliefs and their truth. CSR’s results can be useful in explaining some features of theistic beliefs and traditions, but these explanations do not grasp the truth or falsity of

the content of such beliefs and are therefore completely agnostic toward their truth (Murray 2007; 2009; Murray and Goldberg 2009).

Consider, for example, CSR's assumption that religious beliefs and practices are by-products of psychological mechanisms that are outcomes of natural selection. This claim seems to imply that since religious beliefs are by-products of some nonreligious mechanisms, they are *prima facie* suspicious. However, if we look at this reasoning more carefully, Murray argues, we realize that we have no reason to claim that beliefs that are evolutionary by-products or "accidents" produced by cognitive systems geared for other functions must be false. Although it seems quite plausible to claim that natural selection has created selection pressures that have led to the emergence of various dispositions in the human mind that give rise to religious beliefs, the falsity of religious beliefs does not follow from this. This is because most of our other beliefs, including scientific beliefs and everyday beliefs, are also similarly "accidental" from an evolutionary point of view: natural selection did not favor individuals who were able to do quantum mechanics or calculus. We are able to form beliefs about quantum mechanics and calculus—as well as many other things—because our cognitive mechanisms that originally evolved to do something else, are flexible enough to process different inputs (Murray and Goldberg 2009).¹¹ Therefore, the fact that evolved cognitive mechanisms are involved in producing religious beliefs does not entail that those beliefs are mistaken or even suspicious.

Murray is surely correct to point out that the mere fact that religious beliefs have biological and psychological origins does not automatically make them false. However, we might still be left with a nagging feeling that cognitive explanations somehow show that religious beliefs are mistaken. This feeling might be due to our intuition that the things that make beliefs true ought to figure in our explanations of those beliefs. To put the intuition in epistemological terms, the claim is that in order for a belief that *p* to be justified (i.e., to be a proper candidate for being true), it must be causally connected to the reality which it represents. So if religious beliefs are not caused by any actual state of affairs in reality but by the cognitive mechanisms themselves, then they do not seem to be proper candidates for being true. According to Murray, the first premise of this argument is that the origin of religious beliefs can be explained without any reference to or without any direct connection to supernatural reality. The second premise is that religious beliefs are not causally connected to their supernatural target. The third premise is that a belief is not justified if it is not causally connected to its target. These premises are supposed to produce the conclusion that religious beliefs are not justified.¹²

Murray objects to such reasoning on several counts. First, he points out that although causal analyses of knowledge and justification are quite

popular, they are not by any means the only possible theories available. Not all theories of justification require a causal connection between the object of a belief and the belief itself. Although causal theories of knowledge and justification are currently quite popular, there are other alternatives available. Second, even if we grant for the sake of argument that religious beliefs must be causally connected to their supernatural targets, the argument would still fail, Murray insists, because we can understand the required causal connection in a way that satisfies the conditions of causal connection. In the case of theism, we can claim that the supernatural reality has set up our cognitive systems in such a way that they produce true beliefs about God in certain environments. The causal connection, in this case, would be there, but it would not be direct.

We have already pointed out that the mere fact that religious beliefs might be by-products of evolved cognitive mechanisms does not amount to much in assessing their truth. However, the main result of the CSR, namely, that religious beliefs are easy to form and transmit, remains to be considered. Barrett examines the implications of this claim. One could argue, he supposes, in the following way. The premise would be the claim that we now have evidence that shows that people are credulous recipients of religious beliefs, because religious beliefs are such that they “fit” very well into our cognitive architecture. Hence, since we now know why people believe in gods and spirits so easily (because of their psychology, not because of gods and spirits), we should not regard religious beliefs as plausible.

Barrett begins by pointing out that the results of the CSR do indeed point strongly to the conclusion that religious beliefs are easy to believe and transmit and our cognitive structures are the main causes of this fact. However, despite the plausibility of this premise, it does not follow from the fact that human beings have cognitive faculties that make some beliefs more plausible than others, that we should hold these more plausible beliefs false. We must be somehow in error if we take the plausibility of the belief that *p* as evidence for its falsity. This mistaken assumption might be salvaged by insisting that the plausibility of the belief that *p* is wholly produced by the more or less unconscious cognitive mechanisms that psychologists study. If one were to make this move, Barrett points out, then one would commit oneself to a view according to which conscious deliberations do not come in at any point in the process of acquiring beliefs. This cannot be true, Barrett claims, because humans are also capable of grounding their beliefs in reflected arguments and evidence (Barrett 2007, 65–66). At this point, Barrett’s defense hinges on a certain conception of what cognitive mechanisms are and how they are related to conscious reasoning. In his view, what individuals believe is always a result of interplay between many different factors: unconscious biases created by cognitive systems, conscious reasoning, and available information all contribute to produce a belief in an individual.

According to Murray and others, therefore, we need not think that the strict naturalist assumptions are the only possible background assumptions of CSR research. If this is the case, then we can conclude that CSR is worldview neutral rather than worldview partisan, because it is not necessarily committed to the truth of strict naturalism. In sum, two crucial moves were made in arguing for this conclusion. First, it was argued that conscious (reflective) reasoning might be involved in justifying religious beliefs. The argument implies that conscious processes and reflective reasoning cannot be completely explained by mechanistic factors. Secondly, it was claimed that whether religious beliefs are true or not might be outside science, because science deals with empirically measurable reality. This is because the theist might claim that there are aspects of reality that are not accessible to natural sciences and as a consequence there might be genuine knowledge that is not scientific. As already noted, under the conditions imposed by strict naturalism these claims would not be possible: if everything is considered as physical or reducible to the physical and the domain of physical states is completely exhausted by the natural sciences, then there is nothing left outside the sciences. Thus if the sciences can explain religious beliefs and no scientific evidence for their truth is available, then religious beliefs must be false.

For the above-mentioned reasons, then, we suggest that there are grounds for thinking that the “falsity of religious beliefs” thesis (2) is unsound, and CSR theory is in fact best regarded as “religiously agnostic” (1). The CSR explanation does not appear to entail a single worldview, since it looks compatible with the above variants of strong naturalist/atheistic and methodologically naturalist/agnostic worldviews, and it also seems compatible, at least in general, with theistic worldviews.

RELIGIOUS RELEVANCE

We have argued in the previous section that there are reasonable grounds for thinking that the standard CSR explanation is not incompatible with theism in general, since it is “religiously agnostic.” This leaves the question of “religious relevance.” CSR theory may nevertheless be found to be incompatible with one or more propositions in the B subset of propositions in a religious worldview (in the case at hand, theism), and thus have religious relevance. The critic of religion might at this point object that the religious relevance of CSR theory for theism is nevertheless genuinely damaging: although CSR is perhaps compatible with bare belief in God’s existence, it is incompatible with “really existing theism” due to its having implications for the truth of some other important theistic propositions. If it were to have negative relevance for one or a number of such beliefs, it might tend to undermine theistic belief generally or at least force theists to make compromising modifications of their beliefs.

In order for this objection to go through, the atheist would have to show that the theistic propositions that are supposedly incompatible with CSR theory are either among the nonnegotiable ones in the A subset of propositions of the theistic worldview, or at least in the gray area between A and B subsets. However, there are reasons to think that for mainstream theistic worldviews, it is harder than it might appear to identify good cases of negative religious relevance of CSR for theist beliefs falling in the nonnegotiable (A) subset or in the gray zone.¹³

Firstly, CSR does not pretend to have a complete explanation of religious belief and behavior. On an initial acquaintance with some of the better-known CSR works this may not be evident. The reader who casually peruses works such as Boyer's *Religion Explained*, which has been accused of rhetorically playing up the power of CSR explanation, may take away the feeling that the CSR will probably turn out to be incompatible with at least certain significant theistic beliefs.

However, a fuller survey of the CSR literature makes it plain that this is not the case. In fact, CSR explanation is actually pitched at too general a level to bring it into obvious or interesting conflict with theistic beliefs. This generality is mainly a result of the CSR's commitment to a cultural epidemiological approach to its subject matter inspired by Dan Sperber's anthropological work. Sperber's "epidemiology of representations" model, endorsed by CSR researchers, explains population-level tendencies to religiosity rather than individual cases of religious beliefs or behaviors.¹⁴ CSR consequently explains the "cultural fitness" of representations or their likelihood to spread, accounting for the memorable nature of religious representations by appeal to their fit with the properties of the postulated nonconscious mental tools. Indeed, critics—picking up on the generality of CSR explanation—have questioned its explanatory power precisely on account of this generality, and suggested (echoing Clifford Geertz [1973]) that it may be the type of large-scale anthropological program that has little or nothing to give to the study of particular cultural traditions because the generalizations that such programs produce are not very interesting (Day 2007, 59).

Notwithstanding the claims of some of its critics, it seems to us that the generality of CSR explanation can hardly by itself be a deficit of the CSR approach. However, this generality of CSR explanation would appear to have important consequences for the question of its relevance for theism.

To see this point, consider the following. If we imagine that CSR did indeed offer a complete explanation of religious beliefs, the theist could maintain that God was orchestrating the processes specified in the CSR explanation in order to bring about religious belief in humans, but she might have to concede that this accommodation would have negative relevance for certain theistic beliefs. Consider construals of the God-human relationship. If God arranged for supernatural belief to become a universal

by orchestrating creation in the above-specified way, God would not be the proximal cause of such beliefs. But since humans are generally convinced that they are directly in relationship with God or gods, it would look like God was deceiving them in their belief that they are in direct personal relationship with supernatural agency. If the theist had to concede the completeness of the standard CSR explanation of religious belief, she may have to concede that in this respect at least God resembled a *deus deceptor* (Deceiving God). This would look like a candidate for incompatibility between a CSR claim and a theistic claim in the A subset or at least in the gray zone.

In fact, however, the CSR explanatory model underdetermines how humans acquire and transmit religious beliefs and behaviors and therefore cannot function as a complete account of “how God did it” with respect to religious belief formation in humans; to require of the theist that she adjust certain of her theistic beliefs (e.g., her beliefs about the divine-human relationship) to be compatible with a “complete” CSR explanation of religious belief formation and transmission would therefore be misconceived. This would be to mistake what kind of explanation CSR offers.

A further respect in which CSR explanation would seem to have only limited relevance for theistic beliefs is in its inability to explain particular religious beliefs and practices. There are two senses in which it falls short of doing this.

Firstly, the CSR model seeks explanations of recurrent features of thought in terms of cross-cultural causal factors. But particular beliefs and practices cannot be exhaustively explained as instances of general tendencies, so CSR explanation underdetermines the content of particular theistic beliefs. For example, it is beyond the scope of CSR explanation to account for why Trinitarian belief arose in communities of Christian theists, even though it can predict generally that these communities would believe in a supernatural agent or agents.

Secondly, it does not seek to explain why given individuals hold particular theistic beliefs, and whether those beliefs are rationally justified. Assuming the truth of the CSR explanation, particular theistic beliefs (along with all other religious beliefs) are presumably supported by the cross-cultural human intuitive biases and predilections specified by CSR theory, and all by themselves these may be unreliable in producing theistic beliefs. However, they do not just by themselves produce particular theistic beliefs, so while it is true that CSR predicts that humans are predisposed to hold religious beliefs in general by having such and such nonconscious mental tools, it is not the case that its explanation has any immediate interesting implications for the rationality of particular theist beliefs. As already mentioned, it would be misconceived to suppose that the explanation specifies all of the causal pathways through which people come to hold

theistic beliefs. It follows from this that even were the critic of religion to object that the cognitive mechanisms such as HADD and ToM posited in the explanation were systematically unreliable,¹⁵ this would not just by itself make theistic beliefs irrational. The theist can always object that other causal pathways leading to particular theistic beliefs not specified in the CSR model—such as testimony, religious experience, or divine special action—may yet be reliable.

It is a further consequence of the scope of CSR explanation that its acceptance would not imply determinism.¹⁶ While some CSR researchers might personally favor a deterministic global computationalist view about human cognition, CSR theory is only committed to the claim that some aspects of human cognition relevant to explaining religious beliefs are computational (Laidlaw and Whitehouse 2007; Whitehouse 2007, 250). Its findings are thus compatible with interpretations such as the one proposed by anthropologist James Laidlaw, who has proposed that CSR supplies an explanation of the cognitive “raw material” from which self-conscious religious traditions arise, but that those traditions are additionally products of conscious, noncomputational cognitive and affective processes. (Of course, the nondeterminism of CSR theory in this regard would also permit theist claims about a direct supernatural input entering as an additional factor into the causal mix.) Whether or not it is correct to suppose (as Laidlaw suggests) that appeal must *necessarily* be made to noncomputationalist explanation in accounting for concrete religious beliefs and behaviors, the general point seems valid that for scope reasons CSR in fact offers no explanation of these, whether in computationalist terms or otherwise. The CSR explanation suggests at most that humans are naturally determined to have a disposition to form religious beliefs, but the CSR provides no good reason for supposing that particular religious beliefs—such as belief in the Trinity or Mohammed’s prophethood—are determined effects of our cognitive architectures.

On the other hand, CSR theory may have negative religious relevance for some negotiable theistic claims, especially with regard to theistic beliefs about natural knowledge of God. We have already noted that the by-productism of the CSR standard model explanation does not carry implications for the rationality of theism in general—God may somehow be superintending the evolutionary process. However, by-productism may seem to come in conflict with some theist beliefs about how God implants natural religious belief in humans. For instance, one common theist assumption has been that God does this via a particular psychological mechanism or *sensus divinitatis* (“God sense,” God Faculty). This assumption, for instance, has been defended by Plantinga, who has argued that God, presumably wanting to be known and worshipped by humans, would provide them with specifically religious cognitive mechanisms designed to produce beliefs of the right sort (Plantinga 2000).

But the CSR explanation, due to its by-productism, posits no specifically religious psychological mechanisms, so there seems to be a *prima facie* inconsistency in this case.

This appears to be one theist belief at least for which the CSR account has genuine relevance. In this case, the theist who is disposed to accept the standard CSR explanation must either explain how there could at once be a special God Faculty *and* by-productist reasons for the existence of natural knowledge of God, or modify the God Faculty reading. The theist who wanted to go the first route could argue (following, e.g., a speculation of Plantinga's) that the original God Faculty might have suffered noetic damage, while God allowed other cognitive mechanisms to take up the slack by malfunctioning in just the right way so as to produce the required religious beliefs (Plantinga 2000, 190). Alternatively—since this seems a bit contrived—the theist could drop the God Faculty account and simply claim that God implanted religious beliefs in humans in the ways specified by the CSR.¹⁷ Whichever of the solutions the theist chooses, it is not clear that there is any deep problem here for theism. The claim at stake—that God implanted a natural disposition to believe *in such and such a way*—is neither specified in detail by (here, Christian) theist tradition nor is the modification of one view about how God may have implanted it in favor of another obviously damaging to (Christian) theism in general, just as an atheist's shift from disbelief about to belief in abstract objects would not obviously damage the case for atheism in general.

A more promising line of attack for the atheist might be to point out that the theist also has to accommodate the fact that the CSR predicts that the natural religious beliefs produced as a by-product of these mechanisms do not reliably produce *theistic* beliefs.

But also in this case, the problem is probably less deep for the theist than it at first seems. The theist can maintain with tradition internal consistency that, prior to the historical revelations, humans held religious beliefs that were false in much of their specific content but crucially true insofar as they mediated an inchoate representation of the God of classical theism.¹⁸ She could point out that this would be compatible with traditional theistic interpretations, such as a “cosmic covenant” understanding of prehistoric religion, or a patristically inspired Logos theology. In addition, given the fact that the cognitive mechanisms specified in the CSR account do not determine particular beliefs, this particular consequence of CSR explanation would not clearly require revision of nonnegotiable or gray-area theistic beliefs.

CONCLUSION

We have argued that there are reasons for thinking that the standard CSR explanation is not incompatible with theism in general and should rather

be regarded as worldview neutral. Moreover, it seems hard to identify candidate cases for religious relevance where CSR theory is inconsistent with theistic beliefs which are at least in the gray area between negotiable and nonnegotiable ones. Perhaps further scrutiny could identify such cases, but in their absence, it looks like where CSR is relevant for theistic beliefs, it is not relevant in ways that are interesting or problematic for mainstream theistic worldviews. For it to be relevant in these ways, it would probably need to specify more of the causal pathways through which theists come to their beliefs. As it stands, it specifies only population-level features of human religiosity and makes only general predictions about religious beliefs and behaviors; no foreseeable progress in the CSR is likely to result in radical changes to its explanatory scope. For this reason, it appears that contrary to first appearances, CSR theory can probably be assimilated reasonably easily by a large class of theists who do not have a principled objection to the biological and cognitive sciences.

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NOTES

1. See for example Bielfeldt (2004), Brelsford (2005), Lawson (2005), Gregersen (2006), Peterson (2006), Day (2007), Leech and Visala (2011), Murray (2007; 2009), Näreaho (2008), Oviedo (2008), Slingerland (2008a; 2008b), Visala (2008), and Clark and Barrett (2011).

2. CSR researchers additionally share background theoretical commitments to (1) computational thinking, (2) domain specificity, (3) nativism (broadly defined), (4) adaptationism, and (5) cultural epidemiology (Atran 2002, 243–47). For a useful overview of specific CSR theoretical contributions, see Barrett (2004). This article focuses only on the CSR explanation of religious beliefs and will not be discussing CSR theories of, for example, ritual action or the dynamics of religious traditions.

3. We take the work of Atran, Barrett, and Boyer as representative of what has been called the “standard model” of CSR explanation (Murray 2009), although not all scholars who would associate themselves with the CSR position necessarily endorse all of these positions.

4. CSR hypothesizes that the generation of afterlife beliefs may involve a conflict between different mental tools—those that process biological activities, and those that process psychological activities. While the “living thing describer” tool registers that death terminates biological processes, the “Theory of Mind” and HADD tools do not register that death terminates psychological processes. Because Theory of Mind and HADD keep generating mental states for dead persons, the idea that persons can survive death becomes attractive. See Boyer (2001) and Barrett (2004).

5. See for example Barrett (2004).

6. We adopt the notions of worldview neutrality (and partisanship) and religious relevance (or irrelevance) from Stenmark (2004).

7. After several criticisms, Atran stopped using “counterfactual” as a synonym for “counterintuitive.” See, for example, Atran and Norenzayan (2004) and comments.

8. For further examples of Boyer’s partiality, see, for example, Boyer (2001, 342–43, 368–69).

9. Our notions of “strict naturalism” and “broad naturalism” (otherwise termed “reductive naturalism” or “hard naturalism” and “non-reductive naturalism” or “soft naturalism”) are adopted from Taliaferro and Goetz (2008).
10. For discussion, see for example Clayton and Davies (2006) and McCauley (2007).
11. See also Barrett (2007, 62–63, 65).
12. Murray’s formulation of the argument and his response can be found in Murray (2007; 2009) and Murray and Goldberg (2009). See also other essays in Murray and Schloss (2009).
13. Of course, this will not be the case for all classes of theist: the CSR explanation will have profound negative relevance, for instance, for the antievolutionist theist, because it comes with general evolutionary assumptions built in.
14. See Sperber (1975; 1996). For a basic account of Sperber’s approach, see Lawson and McCauley (1990, 68). See also Sterelny (2001), Day (2007), Laidlaw (2007).
15. See, for example, Murray’s (2009) anticipation of this critical objection.
16. For a discussion of the significance of the cognitive sciences for the free will/determinism question, see Peterson (2003, 95–98).
17. For instance, Clark and Barrett (2011) argue that the standard CSR explanation gives empirical access to the design plan of the God Faculty.
18. See also Plantinga (2000, 176–77) and Clark and Barrett (2011).

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