ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/274167809

Reidian Religious Epistemology and the Cognitive Science of Religion

Article *in* Journal of the American Academy of Religion · August 2011

DOI: 10.1093/jaarel/lfr008

CITATIONS
109

READS
1,553

2 authors:

Kelly James Clark
Ibn Haldun University
58 PUBLICATIONS **354** CITATIONS

SEE PROFILE

Justin L. Barrett
Fuller Theological Seminary
79 PUBLICATIONS **5,113** CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Project Is Religion Natural? The Chinese Challenge View project

Project Religion and the Sciences of Origins View project

All content following this page was uploaded by Justin L. Barrett on 20 July 2015.

The user has requested enhancement of the downloaded file.

Reidian Religious Epistemology and the Cognitive Science of Religion

Kelly James Clark and Justin L. Barrett*

Some contemporary philosophers defend the claim that it is rational to believe that God exists even if that belief is not based on evidence. Many such defenses are developed from a religious epistemology inspired by the work of Thomas Reid's "common sense" epistemology that posits the existence of numerous cognitive faculties that nonreflectively deliver beliefs. Reid argued that one is justified in believing the automatic deliverances of these faculties unless evidence mounts to contradict them. Reformed Epistemologists have suggested that, likewise, one should give the benefit of the doubt to beliefs that are produced by a god-faculty or *sensus divinitatis*. Recent research in the cognitive science of religion provides new reasons to believe that humans are naturally endowed with cognitive faculties that stimulate belief in the divine. We discuss these scientific findings in relation to the arguments of Reformed Epistemologists and also with regard to arguments against the rational justification of religious beliefs.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

*Kelly James Clark, Department of Philosophy, Calvin College, 3201 Burton SE, Grand Rapids, MI 49546, USA. E-mail: kclark@calvin.edu. Justin L. Barrett, University of Oxford, Oxford, UK.
The authors thank Alvin Plantinga, Dani Rabinowitz, Michael Murray, Jay Wood, Carsten Haman, and the Calvin College Philosophy Department for comments and Tenelle Porter for assistance in preparation of the manuscript. This work was supported in part by the John Templeton Foundation but does not necessarily represent the perspective of the Foundation or that of any of its representatives.

Journal of the American Academy of Religion, pp. 1–37
doi:10.1093/jaarel/lfr008
© The Author 2011. Published by Oxford University Press, on behalf of the American Academy of Religion. All rights reserved. For permissions, please e-mail: journals.permissions@oup.com

THE BELIEF THAT COGNITIVE SCIENCE of religion (CSR) has discovered the natural processes that produce belief in God has led some to claim that belief in God is, thereby, irrational. Evolutionary explanations of what might be termed a "god-faculty" are alleged to show that survival pressures, not a supernatural being, caused various religious beliefs and practices. These selection pressures produced agency-detecting devices (for instance) that were "designed" to get us to behave appropriately when confronted by a possible predator or enemy, prey or friend. If anything should be produced by this mechanism by way of belief, it should be a belief in an animal or a human. But, allegedly, because of accompanying cognitive equipment—evolved to solve other survival problems—under certain conditions our hypersensitive agency detection device (HADD) encourages fairly minimal beliefs in some kind of agent to become full-blown beliefs in spiritual agencies and powers. Spiritual or religious beliefs are an accidental by-product of otherwise effective behavior-producing faculties. So Richard Dawkins, representatively, writes: "The irrationality of religion is a by-product of a particular built-in irrationality mechanism in the brain" (Dawkins 2006: 184). By showing the ignoble, nondivine, natural origins of religious belief, the claim is that one has shown that belief in God is irrational. Michael Shermer, in a review of Dennett's *Breaking the Spell,* summarizes thus:

> Humans have brains that are big enough to be both self-aware and aware that others are self-aware. This "theory of mind" leads to a "Hyperactive Agent Detection Device" (HADD) that not only alerts us to real dangers, such as poisonous snakes, but also generates false positives, such as believing that rocks and trees are imbued with intentional minds or spirits. . . . This is animism that, in the well-known historical sequence, leads to polytheism, and, eventually, monotheism. In other words, God is a false positive generated by our HADD. (*Science* January 27, 2006)[1]

[1]Incidentally, the "well-known historical sequence" to which Shermer refers is a leftover of Victorian anthropology and has little empirical support. HADD is an acronym coined by Barrett to stand for Hypersensitive Agency Detection Device (Barrett 2004), but "Hyperactive Agent Detection Device" was Barrett's earlier formulation (2000), leading to some terminological confusion in the field.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Religion, according to this line of thought, is a trick of the brain: God is an illusion or a delusion. Let us call the claim that CSR undermines or defeats rational religious belief "the CSR objection."

The claim that belief in God is produced by a "god-faculty" is reminiscent of the arguments of Alvin Plantinga who contends that belief in God is produced immediately by a cognitive mechanism that is present in every human being (Plantinga 1983, 2000; see Clark 1990). A person, he argues, can rationally believe in God through the instigation of this faculty without the support of evidence or argument. Plantinga locates his religious epistemology within the context of Scottish philosopher Thomas Reid's epistemology. While many philosophers have been critical of Plantinga's god-faculty, contemporary anthropologists, psychologists, and cognitive scientists have amassed empirical evidence that we do, in a sense, have such a "faculty." Can we bring the Plantinga–Reid analysis of rational religious belief to bear on the charge of irrationality in the previous paragraph? And why Thomas Reid, the quaint eighteenth-century common sense philosopher that philosophical time has forgotten?

The answers to these questions are straightforward: Because the mind seems to work roughly as Reid conceived (and not as, say, the more famous Descartes or Hume conceived).[2] And because Plantinga's appropriation of Reid in defense of reason and belief in God offers the most influential conception of rational religious belief of the past thirty years. This article will consider the Plantinga–Reid conception of rational religious belief and the resources it has for responding to the CSR objection.

This article will first consider (1) the intellectual background to the claim that beliefs, including belief in God, must be supported by evidence, (2) the deficiencies of such a claim and (3) Reid's antievidentialist epistemology. (4) Next we will turn to Plantinga's Reidian defense of reason and belief in God, the so-called Reformed Epistemology and (5) show its remarkable consilience with various discoveries in the CSR. (6) Finally, we will offer responses in the spirit of Reid, to the challenge of eliminative-reductionist explanations of religious belief—explainings away—offered by some cognitive scientists of religion and other observers. Our conclusion is that, in the spirit of Edward Slingerland's defense of bringing cognitive science and the study of religion together

[2]Some contemporary philosophers, inspired by cognitive science, have been keen to resurrect Reid's epistemology. Roderick Chisholm, arguably the greatest epistemologist of the twentieth century, commended Reid to a man who had time to read only one book of philosophy and wanted a book with more truths than any alternative (see Lehrer 1989: 1).

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

(Slingerland 2008), such scientific approaches are not necessarily antireligious, but generate important new insights and enliven older problems for the study of religion and theology.

THE DEMAND FOR EVIDENCE

In "The Ethics of Belief," W. K. Clifford famously contends that: "It is wrong, always and everywhere for anyone to believe anything on insufficient evidence" (1886: 346). If every belief must be based on sufficient evidence, then it is irrational or unreasonable to believe in God without sufficient evidence or argument. Furthermore, Clifford also endorses the idea that there is not sufficient evidence or argument to support belief in God. In the absence of the evidence, Clifford's estimation of the rationality of religious belief is manifest: one must withhold belief in God.

No one would disagree that some beliefs require evidence for their rational acceptability. But all beliefs in every circumstance? That is an exceedingly strong claim to make and, it turns out, one that cannot be based on evidence.

The first reason to suppose that not all of our beliefs can be based on evidence is the regress argument. Consider your belief A. If A is rational, according to Clifford's universal demand for evidence, it must be based on some evidence, say belief B. But if B is rational, it must likewise be based on some evidence, say, belief C. And if C is rational, it must be based on D, and D on E, E on F . . . ad infinitum. If every belief must be based on evidence, then one would have to hold an infinite regress of beliefs. But we cannot be required to hold an infinite number of beliefs. So, if we rationally believe anything, there must be some beliefs that we can reasonably take as evidence but which need not be based on evidence themselves; that is, there must be some beliefs with which we can simply start.[3]

[3]Another alternative is coherentism. The coherentist claims that all of our beliefs are justified by other beliefs but avoids the regress argument by contending that our beliefs form an interconnecting web of beliefs. So our beliefs are justified by being part of a coherent or logically consistent set or web of beliefs. While coherence is a good-making property for beliefs, it cannot provide necessary and sufficient conditions for justified beliefs. The problem with construing knowledge along coherentist lines is that we can have a consistent set of beliefs with little or no connection to reality. There are more sophisticated versions of coherentism but we cannot canvass/criticize every option in this essay. The most plausible versions, however, deviate from strict coherentism and claim some sort of experiential connection to a mind-independent world or even assume the basic reliability of our cognitive faculties; see, for example, Susan Haack's "foundherentism" in Haack (2009). They thus concur with our initial but facile criticism of coherentism.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Consider what someone like Clifford might allow us to take for evidence, to start with: beliefs that we acquire through sensory experience and beliefs that are self-evident like logic and mathematics. Consider your experiential beliefs: The sky is blue, grass is green, most trees are taller than most grasshoppers, slugs leave a slimy trail. . . . Add your logical and mathematical beliefs: $2 + 2 = 4$, every proposition is either true or false, all of the even numbers that I know of are the sum of two prime numbers, in Euclidean geometry the interior angles of triangles equal 180°, etc. From a complete set of these propositions, try to deduce the conclusion that it is wrong, always and everywhere, for anyone to believe anything on insufficient evidence. The propositions in the evidence set are logically irrelevant to Clifford's claim. So Clifford's universal demand for evidence cannot satisfy its own standard. By Clifford's own criterion, therefore, it must be irrational.[4]

But the universal demand for evidence is more than irrational. It is simply false and it is easy to see why. If there were a universal demand for evidence, most of our beliefs beyond those of our immediate, present experience would be ruled out as unjustified or irrational as we sketch in the next section.

REIDIAN EPISTEMOLOGY

We develop in this section a Reidian defense of rationality. We do not claim that our theory is precisely the theory of Thomas Reid, the Scottish anti-Enlightenment philosopher, but it is in the spirit of Reid.[5] Moreover, like Reid, we defend a view of rationality that fits with the ordinary cognitive equipment that human beings have.[6] To illustrate, numerous experiments in cognitive science have explored just how complete people's representations of the visual world really are; such experiments reveal that in spite of our beliefs about the thoroughness of our experiences, perceptual inputs appear to provide only fragmentary sketches of the world around us that are colored in by relevant schema and other conceptual expectations. Research in this area demonstrates sensory experience underdetermines our beliefs about the world around

[4]Plantinga (1983) discusses this type of argument more formally and in more detail.

[5]We take a great deal of inspiration here from Wolterstorff (1983a and 1983b).

[6]Again, there are many other epistemological alternatives these days. There is no current consensus as to the best analysis of belief justification, rationality, or warrant. Nonetheless, we believe a Reidian conception of rationality is a defensible view that is better than at least some of the alternatives. For a slightly dated but critical consideration of the alternatives and a defense of a Reidian view, see Plantinga (1993a, 1993b).

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

us. Experience and logic are insufficient to build our knowledge of the world.[7]

The Reidian conception of rationality avoids the skepticism inherent in conceptions of knowledge that restrict knowledge to experience, logic, and mathematics. In a nutshell, the skeptical problem is that our experiential input (present moment, finite, fleeting) is insufficient to support our belief/knowledge output: namely, our beliefs about the world (past, present, future, enduring, other persons, etc.). We have slender experiential input and massive informational output. Even if we were to use logic and mathematics to order our experience, the world presented to us in our finite experience would pale in comparison to the rich and vast world that we believe in. Think of the world: it extends into the distant past and proceeds into the unforeseen future; its physical dimensions are both inconceivably vast and tiny; it includes people, some of whom lived long ago and far away, and it includes me, who is conscious and self-conscious and who persists through time. Now think of your own experiences: could they, when supplemented with the rules of logic and mathematics, produce the world (or, more precisely, justified beliefs about the world)? Even if we were to add the experiences of others to our repository of information, we would be incapable of inferring to the vast world. Fortunately, we are equipped with cognitive faculties that produce substantial beliefs about the world where experience and logic fail.

Reid's project was, in part, a critique of the sort of skepticism that he believed began with René Descartes and culminated in the work of David Hume. Their beliefs about what constituted knowledge led to skepticism about the world. Reid attributes this skepticism to the Cartesian reliance upon reasoning as the sole, reliable cognitive faculty; reasoning produces belief by urging assent to a proposition upon reflecting on other propositions. But reasoning alone is impotent: one must reason from something to something else. And the things one is permitted to reason from, according to the tradition Reid was critiquing, simply do not provide adequate informational resources for reasoning to the material world. In Reid's estimation precious little was or could be proved by these philosophers, and what ought to be rejected are not our ordinary beliefs, but the tradition's sole reliance upon reasoning.

[7]See Simons and Levin (1997, 1998); and Simons (2000) for support from cognitive science for this claim.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Reid believed these philosophers to be spellbound by a deceptive theory. And he is determined not to let a philosophical theory take precedence over the facts (Reid 1764: 61). According to Reid, any philosophical theory that entails the rejection of our strong beliefs in the external, material world should itself be rejected. The dismissal of our common sense beliefs is evidence enough against an abstract, arid, and speculative philosophy. True philosophy affirms our deepest commitments and works from them.

Reliance upon reasoning from very finite experience has led us astray. If we have fallen into a coal-pit, it is time to find a new path. Although Reid wholeheartedly endorses reasoning as a legitimate belief-producing faculty, he rejects the idea that it is *the* legitimate belief-producing faculty. We have many cognitive faculties, not just reasoning, that produce beliefs. He calls all of these faculties, taken together, "Common Sense."

One of our Common Sense faculties is our disposition, in certain circumstances, to believe what we sense and remember. The belief-producing faculties of sense and memory are as much a part of the human constitution as reasoning and there is no reason to exalt reasoning over sense and memory (1764: 18–19).

Our constitution also gives us belief in the past, which is assumed in every historical belief. For example, most of us believe that Caesar crossed the Rubicon and that Chinese invented gunpowder. These beliefs, of course, assume that there is a past of which no one can any longer have sensations or experiences. And my beliefs concerning Caesar and the inventor of gunpowder are surely not based on any sensations of Caesar or any ancient Chinese inventor.

Even in the domain of science, the redoubtable domain of experiential and experimental confirmation and refutation, one must simply accept without proof the regularity of nature (that the future will be like the past and that laws hold everywhere in the universe, not just in our local domain).[8] Science necessarily makes generalizations about the behavior of everything everywhere based on a finite set of extremely limited experiences. We can have no experiences or sensations of those parts of the universe that exceed our senses (we cannot see everything in the universe); in addition, the future likewise exceeds our puny experiential grasp. We can pile finite experiences on top of finite experiences ad nauseam, but we will never be able to generalize to every object everywhere without assuming the uniformity of nature. The practice of

[8]This is Hume's famous problem of induction.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

science would be impossible without our natural cognitive ability to generalize from a finite set of data to everything, past, present, and future.

So, Reid recognizes, we have a tendency or disposition to believe, in the appropriate circumstances, that there is an external world, that we have a mind or self, that there are other persons; and we tend to believe inductively supported statements, what we remember, what we sense, etc. What is significant about these cognitive faculties is that, with the exception of the reasoning faculty, they produce their effects immediately, without the evidential support of other beliefs. For example, belief in an enduring mind and belief in sensate knowledge, Reid says, are "immediately inspired by our constitution" (1764: 23). And, as with senses and memory, these cognitive faculties do not need to be justified by reasoning.

Reid also recognizes—a psychological point of some philosophical significance—that the vast majority of our beliefs are produced in us by our cognitive faculties, by our natural tendencies or dispositions to believe in an immediate, noninferential manner; that is, we do not reason to such beliefs; if anything, we simply trust our faculties and use them to comprehend the world and live our lives.

Not all of our beliefs are immediate. Some beliefs are acquired and maintained because of other beliefs we hold. Scientific theories (such as the belief that there are electrons or that $E = mc^2$) are sometimes acquired upon performing certain experiments in a laboratory or examining the observational evidence.[9] Nonetheless, even the physicist must simply assume the uniformity of nature. After hearing testimony at a trial one might form the nonbasic, inferential belief that the defendant is guilty. After weighing the evidence one may believe that giving up eggs or chocolate will reduce one's cholesterol count. But the vast majority of beliefs we hold are not ones to which we reason. The vast majority of our beliefs are produced immediately, nonreflectively, by our various cognitive faculties. We see or hear something and, if our attention is called to something, we immediately form a belief (and we find that in many of these beliefs we are assuming that there is a world outside of our minds). Someone speaks to us and we respond to them as a person (without reasoning to the belief that it is a person). Our very reasoning assumes the unproven validity of logic and our scientific reasoning assuming the unproven uniformity of nature.

[9]Most of us, though, acquire those beliefs on the basis of reliable authorities.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Consider our acceptance of what others tell us. Reid calls this "the credulity" disposition. Reid notes that the credulity disposition is "unlimited in children"—children accept without question whatever anyone tells them.[10] But as they grow and mature, children begin to question what others tell them. And they begin to ask questions of what others tell them in part because what they have been told sometimes conflicts with other things they have been told. In short, beliefs produced by the credulity disposition are not infallible. When such beliefs come in conflict, one must call upon one's other cognitive faculties to resolve the conflict.

One might look at Reid's discussion of our human cognitive faculties as both descriptive and prescriptive. In the first instance, Reid seems content simply to describe the cognitive faculties that we have. In the second instance, he seems content to suggest that we are permitted, rationally speaking, to rely on or trust our cognitive faculties. One might look at matters this way: Reid has developed an epistemology (a theory of knowledge) for creatures. Creatures are finite, limited, dependent, and, typically, fallible. We are not epistemological gods—we do not have infallible and indubitable access to basic aspects of the world and we are not infallible reasoners from those basic aspects. Yet our cognitive equipment seems to work fairly well in helping us grasp reality.

REID AND RATIONALITY

What sort of general lessons might we learn from Reid about what it means for creatures like us to be rational? Reid recognizes our many cognitive faculties that produce beliefs immediately, that is, without the support of evidence or argument. This leads him to part company with the grand tradition of modern philosophy which demands that most beliefs be supported by evidence or argument to be rational or justified. The paradigm instance of this principle is the Cartesian method of doubt in Descartes' famous *Meditations*. Descartes was determined to reject any belief that can possibly be doubted and accept only what is indubitable or what can be established by absolutely certain evidence. "Doubt first, believe second" was his motto; and rational belief is permitted only when it could be established on the basis of solid evidence and sound reasoning.

[10]As we sketch below, recent scientific evidence demonstrates that, strictly speaking, credulity is not "unlimited in children," but is selective in some interesting ways. This modification does not undercut Reid's basic point: not all knowledge can be or is derived from experience and logic alone and testimony plays a critical role in knowledge acquisition.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Reid, in his stead, suggests an innocent-until-proven-guilty principle of rationality. Belief begins with trust, not with doubt. We ought to trust, he contends, the deliverances of our cognitive faculties, unless reason provides us with substantial grounds for questioning that belief (1764: 12). Under the presumption of innocence, a belief ought to be accepted as rational until it is shown to be specious. Contemporary philosopher Nicholas Wolterstorff affirms Reid's intuitions and develops them into a criterion of rationality (1983a: 163–164). On this conception of rationality, beliefs produced by our cognitive faculties are rational unless or until one has good reason to cease believing them.[11] That is, we can trust beliefs produced by our cognitive faculty until that belief is undermined or defeated by stronger or better corroborated beliefs.[12]

Reid believes that reasoning is empty unless Common Sense supplies it with material for thought. We need something to reason *from*. If we, in a Cartesian and Humean vein, admit only what can be established by reasoning, we will admit nothing. Without the principles of common sense, we will believe nothing (1764: 57–58). Without the beliefs produced by our manifold cognitive faculties, reasoning would not lead us to embrace much of anything. Fortunately, we have been equipped with a plethora of cognitive faculties to supply us with materials for reasoning about the world. But most of the beliefs supplied by our cognitive faculties are ones that we must simply accept or trust, not ones that we can or should reason to. So we can and must trust the beliefs delivered to us by our cognitive faculty unless or until such beliefs are undermined or defeated.[13]

[11]A radical and challenging new proposal is simply to jettison discussions of rationality and justification and begin with knowledge (see Williamson 2002). For a discussion of these topics within the context of a knowledge first approach to epistemology, see Clark and Rabinowitz (forthcoming).

[12]Michael Bergman, following Plantinga, develops this more formally and fully. His main contention is that, roughly speaking, "S's belief B is justified iff i) S does not take B to be defeated and ii) the cognitive faculties producing B are a) functioning properly, b) truth-aimed and c) reliable in the environments for which they were 'designed'" (Bergmann 2006: 135).

[13]One might think, in a certain pragmatic vein, that we should not trust our innate cognitive faculties as accurate—they are, at best, effective tools for helping us cope with "reality," to move with some equanimity into the future, or to achieve our goals. If one adds an evolutionary element to this—that evolution cares only for reproductive success, not representational accuracy—then the critical issues are compounded. Richard Rorty, for example, contends that Nature has not outfitted us with cognitive faculties that are truth-tracking, rather our faculties are simply for coping cleverly (Rorty 1998: 59). But Reid's claim here is consonant with both claims. We have to start somewhere in our reasonings and so we start with what is given to us by our cognitive faculties unless or until such beliefs are undermined or defeated. We do not trust them full stop. We could not have possibly learned of the truth of evolution or conceived of the insights of pragmatism without the initial trust in the deliverances of our cognitive faculties.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

A REIDIAN EPISTEMOLOGY OF RELIGIOUS BELIEF

Now it would be thoroughly consonant with this Reidian epistemology to believe that we have a disposition to believe in God in the appropriate circumstances. Plantinga, for example, thinks that God has created us not only with cognitive faculties that produce belief in an external world, memory, other persons, and the like, but also with a faculty that produces belief in God (Plantinga 1983). Do we have a cognitive faculty, let us call it the "god-faculty," that produces belief in God? Plantinga identifies himself with the tradition of John Calvin who believed that God had provided us with an innate sense of the divine. Calvin does not claim that people have an innate sense of the God of Abraham, Isaac, and Jacob. They have an inchoate sense of the divine, not precise knowledge of Yahweh. Calvin's *sensus divinitatis* may find expression in theistic belief but it may find vaguer, less specific religious expression such as belief in spirits or in polytheism.

If there is a God who cares for human beings, it is natural to suppose that if God created us with cognitive faculties that by and large reliably produce beliefs without the need for evidence, he would likewise provide us with a cognitive faculty which produces belief in him without the need for evidence. So there is theological reason for supposing there might be a god-faculty. Are there any nontheological reasons for supposing (a) that we have a god-faculty and (b) that beliefs produced by the god-faculty are innocent until proven guilty?

There now seems to be good empirical reason, provided by cognitive scientists studying religious thought, to believe what some philosophers and theologians affirmed on theological grounds: that we have a maturationally natural god-faculty, although "religious faculty" or *sensus divinitatis* may be more precise and relevant terms.[14] Cognitive science is a relatively new discipline that unites psychology, neuroscience, computer science, linguistics, and philosophy in the study of the operations of the mind/brain. It is concerned with how the mind processes

[14]We use the term "maturationally natural" (from McCauley 2007, and forthcoming), instead of the more familiar "innate" to avoid several confusions and irrelevant commitments. A maturationally natural structure, practice, or disposition is one that arises almost inevitably by virtue of human biological endowment operating in ordinary, cross-culturally recurrent environmental conditions. Maturationally natural dispositions may be overridden or augmented by special cultural conditions (including artifacts, special tuition, practice, or institutions). Walking and talking are maturationally natural human actions. The term "innate" is often taken to mean either "in place at birth" or "a product of biology independent of environmental conditions." Neither connotation is helpful here. Moreover, contrary to Plantinga's claims that such a faculty produces monotheistic beliefs, it produces a plethora of beliefs in disembodied beings. For a discussion of cognitive science of religion and the *sensus divinitatis*, see Clark and Barrett (2010).

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

information—how it is acquired, stored, retrieved, ordered, and used. The scientific study of the thinking mind has considered perception, attention, memory, pattern recognition, concept formation, consciousness, reasoning, problem solving, language-processing, and forgetting, among many other functions and capacities. Interestingly, the results from cognitive science concerning the operations of the mind suggest empirical confirmation for Thomas Reid's speculations: that, in a large number of cases, we have cognitive systems, faculties, or modules that process information and produce immediate, nonreflective beliefs. And the Reidian faculties—perception, external world, inductive principle, memory, other persons, etc.—parallel those affirmed by cognitive science. The mind seems to work roughly as Reid conceived, with an important caveat: cognitive science suggests *more* information is automatically, noninferentially delivered than Reid supposed, and from earlier in one's life. Reid recognized that we automatically form beliefs through the deliverances of perceptual faculties, memory, and so forth, but did not know that human minds possess other, more specialized, domain-specific conceptual faculties as well.

EXAMPLES OF EMPIRICALLY SUPPORTED FACULTIES

Examples of such hypothesized faculties are not hard to find. Research in an area sometimes called "naïve physics" has shown that within the first 5 months of life infants already expect that physical objects: (1) tend to move only when launched through contact, (2) continue on inertial paths if not obstructed, (3) do not pass through other solid objects, (4) must move continuously through space (instead of teleporting from here to there), and (5) cohere as a bounded whole (unlike a cloud, a flame, or pile of leaves) (Spelke and Kinzler 2007). This sort of research relies on subtle behavioral cues such as eye gaze to determine what infants "know" or expect. For instance, if given two different displays babies preferentially attend to one versus the other, scientists infer that babies can discriminate between the two displays. Similarly, if babies watch one display until their attention is lost (they stop looking at it) and then a second display is presented that recovers the babies' attention, then scientists infer that babies notice a difference in the second display. In research on infant's understandings of physical objects, babies might be shown a display in which a ball rolls down a ramp from the right to the left, disappearing behind an opaque screen and then reappearing on the other side. The display is repeated over and over until the baby becomes "habituated" (i.e., bored). Then babies might be shown the same display with the screen removed. Generally,

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

such a display does not re-capture infants' attention, apparently because it only depicts what they assumed was going on previously: it presents nothing new. But babies in a comparison condition view the same display except that on the ramp, previously hidden by the screen is a barrier that, from an adult perspective, would clearly block the motion of the rolling ball. In such a case, babies' attention is more likely to be recovered. Scientists infer that babies know' that balls cannot roll through solid barriers. Babies find the new information about the presence of a solid obstacle surprising. Research of this kind, then, gives evidence that preverbal babies hold a host of expectations about objects in their environments: when babies recognize something as a bounded, physical object (as opposed to a pile of sand or a cloud), they automatically, noninferentially expect a range of properties to apply to the object. An early-emerging, maturationally natural cognitive faculty nonreflectively delivers commitments concerning the properties and motion of physical objects.[15]

Other domain-specific faculties that deliver beliefs in a nonreflective mode, independent of what philosophers have generally regarded as Reason include naïve biology (concerning the properties of living things), naïve sociology (concerning social reasoning), folk psychology (including "Theory of Mind" [ToM] and agency detection, concerning understanding mental activities and actions), and hazard-precaution (concerning contaminants avoidance and other environmental dangers).[16] The ways in which these various cognitive systems work together (and sometimes conflict) may also produce maturationally natural nonreflective cognitive deliverances. For instance, Paul Bloom has argued that the fact that human beings activate different cognitive faculties (including naïve physics and folk psychology) which have different developmental trajectories, evolutionary histories, and input conditions, compels people to be "intuitive dualists." That is, in a nonreflective mode, human cognitive systems deliver dualist commitments regarding minds and bodies. Combining the relevant subsystems, then, humans may have a "dualism-faculty."[17]

[15]We make no commitment as to whether this or any other cognitive faculty is a dedicated or localized neural structure, or whether it is a Fodorian "module." Rather, by cognitive faculty we refer to a functional unit.

[16]Hirschfeld and Gelman (1994) and Sperber et al. (1995) include examples of scientific research in these areas. Boyer and Lienard (2006) summarize evidence for a hazard-precaution faculty and discuss its potential ability to explain some dynamics of cultural rituals.

[17]It might be tempting to specify that the *dualism faculty* is actually a second-order faculty (because it arises from the interrelations of other faculties), but as our discussion of "faculties" concerns functional outputs, we see no principled reason for subdesignations. The same

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Research in cognitive science has produced considerable evidence that human minds are not best characterized as simple, undifferentiated general processors with a few basic faculties such as "memory," "perception," and "reason." Rather, in addition to these general activities, human minds also engage in a number of nonconscious conceptual activities that automatically and noninferentially generate epistemic commitments to solve problems rapidly in particular domains of thought—possibly as adaptive mechanisms in response to selective pressure. The case of *intuitive dualism* suggests that the interplay of these functional systems can produce additional functional tendencies as by-products or emergent faculties of other faculties. Could it be that a *sensus divinitatis* is either an evolved or emergent faculty?[18] Research in the CSR points to an affirmative answer: humans may be endowed with a maturationally natural god-faculty.

By "god-faculty," we mean that the ordinary arrangement and function of cognitive architecture in human minds often produces nonreflective, unreasoned belief in gods. By "gods," we refer to any supernatural intentional agents whose existence would impinge upon human activity. We are not arguing that this god-faculty is a dedicated functional system, a special add-on to human minds, nor that it is divinely implanted by natural or other means. Rather, the god-faculty that research in CSR points to is more akin to the proposed "dualism-faculty." Much as some parts of the maturationally natural cognitive architecture of human minds nonreflectively produce the belief that minds and bodies are separable entities (Bloom 2004), so too some collection of human cognitive architecture nonreflectively produces beliefs in gods (given ordinary inputs from the environment). With respect to belief in the divine, it seems plausible to suppose that we do, indeed, have a natural, instinctive religious sense.[19]

computational architecture seen from different functional perspectives yields different "faculty" designations. See Bloom (2004) for an overview of evidence and implications. Likewise, see Cohen (2007) for an example of how such cognitive considerations might impact and help to explain some religious beliefs and practices.

[18]Elsewhere we discuss whether cognitive science of religion favors Calvin's *sensus divinitatis* or a version more similar to Plantinga's (Clark and Barrett 2010).

[19]We leave aside discussion of the exact nature of the god-faculty: is it a single module of the mind–brain or is it a complex involving various parts of the mind–brain? We are sympathetic to Boyer, for example, when he rejects the claim that there is a single module that produces religious beliefs: "The first thing to understand about religion is that it does not activate one particular capacity in the mind, a 'religious module' or system that would create the complex set of beliefs and norms we usually call religion. On the contrary, religious representations are sustained by a whole variety of different systems" (Boyer 2004).

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

The ubiquity of beliefs in gods, much as beliefs in minds and the regularity of nature, is some preliminary evidence of a god-faculty. Anthropologist Scott Atran writes: "Supernatural agency is the most culturally recurrent, cognitively relevant, and evolutionarily compelling concept in religion. The concept of the supernatural is culturally derived from an innate cognitive schema . . ." (2002: 57). Atran's move from observing the recurrence of belief in gods to linking such beliefs to a natural part of human cognition is not grounded only on the commonness of belief in gods. Rather, Atran and other cognitive scientists of religion have begun identifying various cognitive systems that, working in concert, seem to give belief in gods intuitive support. Following anthropologist Stewart Guthrie, Atran argues for the importance of an agency detection system that has evolved to detect predators, prey, and other people in the environment. Though tailored by natural selection for a particular domain of activity, its flexibility and hair-trigger tuning makes it liable to produce beliefs in unseen agents or intentional agents with other supernatural properties (Guthrie 1993; Atran 2002). Rather than deductively reasoning to the existence of an intelligent being accounting for mysterious bumps in the night or faces in the clouds, Guthrie argues that human cognitive systems are tuned to rapidly intuit the presence of intentional agents in the environment, even given scant or incomplete evidence (Guthrie 1980, 1993). Under certain conditions, this tendency—recast by Barrett (2004) as the activity of a HADD—may generate beliefs in anthropomorphic gods, says Guthrie.

Another nonreflective pathway to belief in gods may hinge on representations of death. For instance, on the basis of experimental evidence psychologist Jesse Bering has argued that the difficulty of mentally simulating the cessation of many mental states makes the idea of minds or spirits surviving death intuitive (Bering 2002, 2006). Similarly, Bloom has argued that intuitive dualism means that afterlife beliefs are a natural product of human cognition (Bloom 2004). Believing that disembodied minds of the deceased continue to exist and potentially interact with humans, then, is a nonreflective product of ordinary cognitive systems (Boyer 2001). It is not surprising, then, that one of the most widespread and perhaps oldest kind of god belief is in ancestor spirits and ghosts.

Convergent with these findings, developmental psychologist Deborah Kelemen has suggested that children may be "intuitive theists" on the basis of a series of studies regarding children's maturationally natural cognition relevant to understanding the causes of things in the natural world (Kelemen 2004). In brief, research suggests that children

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

practice what Kelemen calls "promiscuous teleology": favoring design and purpose-based accounts for natural phenomena, beyond what they might have been taught. Hence, four-year-olds are happier with teleo-functional accounts of why rocks are pointy (e.g., so that animals will not sit on them) than mechanistic accounts (e.g., because of bits of material piling up over time). Further, they assume that intentional agents, not mechanistic causes bring about design and order. A tendency to see the natural world as designed together with an intuition that design means the presence of intentional agency leads children to readily embrace creationism and other supernaturalism with regard to understanding the natural world. These sorts of findings from developmental psychology lead scholars in the area to agree with Bloom that "Religion Is Natural" (2007).

Supposing cognitive science affirms that we do have a natural god-faculty that produces religious beliefs immediately, noninferentially, or nonreflectively. What should our judgment be of the beliefs thus produced?

EXPLAINING GOD AWAY?

Suppose religion is a by-product or accidental belief produced by HADD and ToM. Would or should the cognitive and evolutionary psychology of religion undermine rational religious belief? According to the CSR objection, uncovering the real, evolutionary cause of religious beliefs shows that religious beliefs are fanciful expressions of hidden cognitive mechanisms. Religious beliefs are not acquired due to rational reflection or to an encounter with the divine. Rather, so the CSR objection goes, they are acquired, like beliefs in fairies and elves, via processes that involved neither rational reflection nor divine instigation.

CSR objectors seldom develop their contentions into arguments; they typically rely, instead, on bold assertion and innuendo. So we will try to understand, develop, and then critically assess the CSR objection. In order to develop the CSR objection into an argument, the work must be done for CSR objectors by sympathetically imagining how their assertions might become arguments. We will consider various forms of CSR objections and critique them in turn. Since believers come in different shapes and sizes, so the force of the CSR objection will epistemically affect various believers in different ways.

Natural vs. supernatural explanations

Suppose the CSR objection claims that a natural explanation of religious belief shows the supernatural explanation to be untenable.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Matthew Alper, author of *The "God" Part of the Brain*, claims that "[i]f belief in God is produced by a genetically inherited trait . . . this would imply that there is no actual spiritual reality, no God or gods, no soul, or afterlife" (Alper 2001). Alper, in this quotation, assumes that if someone provides a perfectly plausible natural explanation for some phenomenon, a previously accepted supernatural explanation is thereby shown to be irrational.

An example might help us to see what Alper has in mind. Suppose Carsten is attending a party and unbeknownst to him, his brother, Dathan, sneaks a pill into his drink which, when it takes full effect, produces a vivid sensation of a very large Indian elephant. Upon "perceiving" the elephant, Carsten firmly believes that there is an Indian elephant in the room, and loudly warns his fellow revelers. They glance nervously around the room for an elephant (the room is small, so it does not take long) and then stare incredulously at Carsten. Dathan then informs Carsten that his belief was caused by the pill and not by an elephant. Surely, upon learning of the natural explanation of his belief, Carsten's belief that he had seen an elephant would no longer be tenable.

In this sort of case, it is clear: as soon as one discovers the natural explanation of the elephant belief, the extraordinary explanation (that there is an elephant in the room) is no longer tenable. So, too, it is alleged that as soon as one discovers a plausible natural explanation of religious belief, the extraordinary explanation (that there is a god) is no longer tenable.

Alper, however, surely overstates things—showing that a natural process was involved would not (and could not) show that there is no God. We might, for example, have a natural inclination to believe that the world consists of matter or that other people have minds and, lo and behold, the world does consist of matter and people do have minds. And Carsten may have been caused to believe that there's an elephant in the room by the Indian Elephant Pill *and* Dathan may have also deviously squeezed an elephant into the room. Showing that natural causes are involved in the production of a belief tells us nothing about the truth or falsity of that belief. So there might be a completely natural explanation of everyone's belief in God *and* God might exist.

So, too, there might be a perfectly good natural explanation of the god-faculty and the beliefs it produces (along the lines of evolution, HADD, and ToM) but it might also be true that a personal God providentially guided these natural processes so that people would acquire true belief in God. Both the natural and the supernatural explanations may be true. By pointing out the natural explanation, then, one has not

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

thereby precluded a supernatural explanation. Why, after all, could God not have produced in us, through the processes of evolution, a faculty, along the lines of Reid, that makes humans aware of God under widely realized circumstances?

There are analogies here to other natural explanations of religious belief. Consider Freudian critiques of religious belief. Freud contended that we wish God into "existence" and "God" hears our prayers: God can tame nature, help us accept our fate, and reward us for our sufferings. By revealing our desire for the divine, masking deeply insecure self-interest, Freud thinks he has explained God away.

Freud's explanation could be completely plausible without thereby explaining God away; that is, Freud's account might be an accurate description of a divinely implanted, truth-aimed god-faculty. Why could God not have produced in humans a Freudian god-faculty that makes humans universally aware of God under widely realized circumstances? After all, the god-faculty, supposing there is one, must have some determinate shape or form. Why not the Freudian or HADD shape? As Alvin Plantinga writes of Freud-Marx critiques of belief in God: "To show that there are natural processes that produce religious belief does nothing to discredit it; perhaps God designed us in such a way that it is by virtue of those processes that we come to have knowledge of him" (Plantinga 2000: 145). Surely, God could use natural processes to produce belief in God.

What Is Wrong with Carsten?

So far we have argued that it is possible to have complementary natural and supernatural explanations of religious belief. But that does not get to the heart of the matter—the supernatural explanation may be logically *possible*, but the CSR objection claims that it is not rationally *tenable* to believe in God once a natural explanation is accepted; god beliefs, like Carsten's elephant belief, are no longer rationally acceptable. If the God case were analogous to the elephant case, God would be no more tenable than Carsten's elephant. There *could* be a god, just as there could have been an elephant in the room, but belief in God would no longer be epistemically viable.

To adequately answer this version of the CSR objection, one must show that god beliefs, appearances notwithstanding, are not really like Carsten's elephant belief. Let us consider very carefully the precise problem with Carsten's elephant belief and then see if belief in God is like it or not.

Carsten's elephant belief was caused by neural processes induced by the Elephant Pill; the Elephant Pill created the sensation of an elephant,

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

which then moved Carsten to form the belief that there is an elephant in the room. His was a disguised perceptual belief. How does Carsten's elephant belief differ from a tenable perceptual belief? When I see an elephant, my perceptual faculties (vision) convey information to those portions of my brain that process visual information (sensations) and then transfer that information to the portion of my brain involved in believing. Moreover, I must *see an elephant*—that is, I need to be in the right sort of relation to the object of my perception (an elephant): for perceptual beliefs about elephants, an elephant needs to be the ultimate cause of my belief. Carsten had a perceptual belief but the Elephant Pill circumvented the appropriate cognitive processes for perceptual beliefs. Moreover, Carsten was not in the right relation to the object of his apparent perception (an elephant).

Genuine perception involves both the right natural cognitive processes (those that can put us in the right sort of contact with their object) and getting us into the right sort of contact with that object—or better, the object getting into the right sort of contact with our cognitive faculties. I cannot rely on hearing or taste to produce the visual sensation required for the belief that I see an elephant. Nor can I use reason alone to produce my belief that I see an elephant. I must use my visual faculties to put me into visual contact with the elephant. Finally, there must be an elephant, outside of my mind, out there, in the world that is the source and cause of my sensations.

Similar processes are involved in the production of other beliefs. Let us consider just one more—ToM. ToM produces rational beliefs when I come into contact with personal agents. ToM faculties are engaged countless times each day when driving to and from work, at the mall, or while watching television or listening to the radio. I instantly and constantly find myself with person-beliefs—beliefs that require the minded interior life of persons including beliefs, feelings, and desires. ToM produces rationally tenable beliefs when the information that it processes is caused by a person. If we become aware that the person-belief we formed was not caused by a person, that belief is thereby rendered untenable. Determining what constitutes proper causal contact with persons is difficult. The paradigm case—when I am looking at another human being in perfectly good lighting—is obvious but, again, problematic (for philosophers). I do not see that person's mind, I see just their body. And so I do not *perceive* persons strictly speaking; ToM may be triggered by a perception of a human being, in some cases, but it is not a perception. I see a certain kind of body—a human body—and just find myself believing that they are persons. And while in the paradigm case, ToM may bring me into the right sort of contact with a

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

physical person who is nearby, contact with persons does not require physical proximity. In fact, I do not even need to see a human body at all to form a proper person-belief. I can come into contact with a person through reading a letter or an email message. A young woman can discern the intentions of her beloved by reading skywriting that contains a proposal of marriage. I can learn of people from newspaper reports, a biography, or through gossip. In those cases a person is mediated—through writing or speech—by *another* person. Even given these various ways of getting into "contact" with persons, the bottom line remains: ToM works when it produces true beliefs about persons that are caused, ultimately, by a person.

We can now say what went wrong with Carsten's belief. Carsten's elephant belief was rendered untenable for two reasons. First, Carsten's perceptual belief was not formed by perceptual faculties at all. Only perceptual faculties produce genuinely perceptual beliefs—drug-induced neurochemical processes are not adequate to the perceptual objects of perceptual beliefs. Second, Carsten's belief did not involve causal contact with the object of perception at all—it did not involve an elephant. And so, thus informed, Carsten's elephant belief is undermined.

Now we are in a position to ask—Are god beliefs like Carsten's elephant belief? Are God beliefs rationally undermined if one becomes aware of the natural evolutionary processes that produce those beliefs?

God and Elephants

Philosopher Kim Sterelny, in his review of Dennett's *Breaking the Spell*, contends that "Religious commitment cannot *both* be the result of natural selection *and* be a response to something that is actually divine" because people would believe in God even if there were no divine reality to which they were responding (*American Scientist,* September–October, 2006). Sterelny is claiming, to put it in terms of this discussion, that God beliefs are like Carsten's elephant belief because they do not put the believer being in the right sort of contact with the object of belief. How, then, to respond to Sterelny's claim?

Sterelny's claim generalized would likewise preclude knowledge of other persons; changing equals for equals, Sterelny's view would be that perception of others as persons cannot both be the result of natural selection and be a response to actual persons. But, of course, person-beliefs can be both. Likewise, God beliefs can be both the result of natural selection and a response to an actual divine person.[20] God

[20]We are grateful to Charles Mathewes for raising this point.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

beliefs may be justified only if God is the cause of those beliefs. If God is an agent and a person—if God can act and has a will, intentions, desires, or goals—then HADD and ToM *can* put us into the right sort of relation to the object of religious beliefs. HADD detects agency and ToM detects mind (purpose or intention), so if God is a minded agent, then the god-faculty can produce true beliefs about God. It is hard to say, though, how God might properly *cause* our god beliefs. But recall that it is also hard to say how persons cause person-beliefs. We can come into contact with a person through letter, email, television, radio, Internet, smoke signals, and countless other ways; and we never come into direct contact with minds—the peculiar aspect of persons that makes them persons. But an actual person must be the *ultimate* cause of my beliefs about persons. Is God the ultimate cause of God beliefs?

The model of the god-faculty that we developed suggested that very ordinary and some extraordinary (but not supernatural) experiences or circumstances may have incited early humans to form religious beliefs —circumstances in which ordinary agency explanations (human or animal) fail to explain some very puzzling phenomena (hearing a thing go bump in the night or a rustling in the grass); or circumstances where we seek patterns in the weather or search for a mate. From these thin descriptions of very ordinary circumstances, it *seems* that God was not involved at all. God is not the *immediate* cause of many of these beliefs; indeed, it is not an agent at all that *immediately* caused these beliefs—it is the *absence* of an ordinary agent—the absence of a lion, tiger, or bear —that invites or induces belief in extraordinary agents (agents that are not present in the immediate circumstances). The god-faculty seems, then, to pull god beliefs out of thin air. And if God did not factor as a cause in those beliefs, then, like the elephant beliefs, belief in God is undermined.

Does the immediate absence of God in these sorts of circumstances undermine rational belief in God? Not necessarily. While God himself may not have been the *immediate* cause of God beliefs, God may nonetheless be the *ultimate* cause of those beliefs. If God is the first and originating cause of the universe (including all natural laws) and if God were to guide or direct the natural evolutionary processes so that they produced a god-faculty so that people could and would come to form true beliefs about God, then God would be the ultimate cause of our god beliefs. And so, our god beliefs would be caused by their proper object—God. God may not be directly or immediately involved in the production of God beliefs, to be sure. But, we have seen that the proper cause of beliefs need not be direct or immediate. As long as God is the ultimate cause of true beliefs about God, God beliefs may be perfectly

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

fine—even if they are produced by natural processes and God is not in the immediate neighborhood. And so, learning that the immediate cause of God beliefs involves natural faculties would not show that our God beliefs were untenable after all. In order to show that, the CSR objector would have to show that God was not the ultimate cause of our God beliefs. And that they simply have not done.

If there is no God, then God could not have been the ultimate cause of the god beliefs. And if God is not the ultimate cause of that belief, then God beliefs are no more than a house of cards. The upshot is that we cannot know whether the evolutionary psychology of religion undermines belief in God unless we already know that there is no God. Of course, if one does not believe in God, one will *believe* the evolutionary psychology of religion shows religious beliefs to be untenable—if God is not the ultimate cause of such beliefs, then they are untenable. But if there is a God, then beliefs about God could be properly connected to the object of belief. For Dawkins and Dennett to insist that the evolutionary psychology of religion undermines rational religions belief, then, tells us more about their personal beliefs than the logic of the situation.

Simplicity?

One might argue that the principle of simplicity requires us to reject any supernatural involvement in god beliefs. Simplicity is valued in scientific theorizing to prevent needless complications and explanations. Mathematically simple and elegant theories are preferable to more complex theories. But more to the point for this discussion—once a particular set of data is adequately explained by various theoretical entities, one should not (because one need not) postulate any additional entities whatsoever. For example, if quantum phenomena can be fully and adequately explained by atoms, then do not go around looking for anything extra to explain quantum phenomena; there is no need to populate the world with extraneous or superfluous unseen particles—unless, of course, there are additional data that require us to dig deeper into reality for other sorts of entities in order to explain the new data. So physicists were forced by new data to postulate, in addition to atoms, their constituents—protons, neutrons, and electrons (and, later, even more subatomic particles such as quarks). But scientists should not postulate or accept any additional entities unless they are required to by the data. So, to cite Occam's razor, do not multiply explanations beyond necessity.

With respect to the god-faculty, then, one might argue that if there is a fully natural explanation of religious belief, then it is explained. While one *can* put a theological overlay on the natural processes that produce belief, one should not bring in the supernatural unless it is

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

rationally required; one *should not* because one *need not* bring in the supernatural.

We concede that there is no reason to appeal to a god to explain the data of cognitive and evolutionary psychology of religion. The scientific practice of cognitive and evolutionary psychology of religion, following Occam's razor, should not countenance the existence of God in their scientific theories concerning the god-faculty. Agreed. Science should proceed by the principle of simplicity, and so *scientific* appeals to the supernatural are not necessary.

But the Reidian does not offer God as a hypothesis that provides a better or more complete scientific explanation of religious beliefs. In fact, the Reidian does not offer God as a hypothesis at all. And if God is not a scientific hypothesis or theory, the principle of simplicity is simply irrelevant.

Suppose, to illustrate the point, we were committed to the principle of simplicity with absolute devotion in all areas of human inquiry. If so, I should no longer believe that any other persons exist. I can fully explain the data of other persons by believing that they are simply creations of my mind (without believing in their existence independent of my mind). The simplest hypothesis is that only I exist and that you and other "people" are simply figments of my imagination. If I can explain my person-beliefs with the belief in just one person (me), then simplicity requires that I not postulate the existence of other entities (like you). Moreover, there is no need to explain my beliefs about the world by postulating an enduring physical world outside of my mind. I could fully account for the external world in terms of my mental phenomena. So, if I were to take other persons and the external world as hypotheses offered to explain the data of my sensations of persons and the world, the principle of simplicity would preclude their rational acceptance. If I can account for the relevant experiences without appeal to anything but myself, and I should not multiply entities beyond necessity, I should believe that only I exist.

But we do not take other persons or the external world as *hypotheses* that explain some data. And we do not accept other persons or external world beliefs on the basis of hypothetical reasoning with appeals to simplicity. In fact, we do not reason to them at all. We just believe them with full conviction. Even the scientist assumes other persons and the external world—even though they are not the simplest hypotheses that adequately explain the data. Like other persons and the external world, God is not a hypothesis that might or might not be called upon to explain God beliefs. And so, simplicity is as irrelevant in judgments about God as is it in judgments about other persons or the external world.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

The By-product Argument

Recall that in order for a belief to be tenable, the cognitive faculties involved must be adequate to their object—that is, they must produce true beliefs about their object and put us into contact with the object. But the problem with the god-faculty is that HADD and ToM developed (were "designed," so to speak) to detect agency in the natural world and to anticipate the plans of enemies and predators. Only when they are extended beyond their natural domain—into the domain of disembodied personal agents—do they produce beliefs they were never "intended" to produce. HADD and ToM are adequate to their natural objects—predators, prey, enemies, and mates—but not adequate to the objects of the by-products beliefs produced by HADD and ToM—spirits and gods. HADD and ToM developed in circumstances conducive to fighting and fleeing in response to the threat of, say, lions, tigers, bears, and (Oh my!) early hominid enemies. Or they developed to help us to catch a movable feast (animals), and finding mates and friends. However, the whistling wind through the grass or footprints in the sand produce not only lion, tiger, and bear beliefs but also many "unintended" beliefs such as beliefs in spirits and gods. So, HADD and ToM are adequate to lions–tigers–bears–enemies–friends–mates and so should (rationally) be restricted to lion–tiger–bear–enemy–friend–mate beliefs; they are inappropriately extended to god beliefs. As Bloom representatively proclaims, religion is "an incidental by-product of cognitive functioning gone awry" (Bloom 2005). Since belief in god is a by-product of cognitive faculties designed for other purposes, belief in God is untenable.

For this argument to be successful, it must assume that our cognitive faculties are adequate to the domain for which they were "designed" but are inadequate when applied outside of that domain; that is, beliefs that are by-products of our cognitive faculties are irrational. By-product beliefs, so one might think, are untenable.

The problem with this sort of argument is that it cuts too wide a swath—it would show too many of our beliefs to be untenable. Beliefs that are by-products of our cognitive faculties may be true and are often widely and rationally accepted as such. Let me offer two domains that were not the intended objects of the cognitive faculties that operate in those domains—science and morality. Nonetheless, we typically accept as true and rational both science and morality.[21]

[21]These are, of course, empirical claims but most people seem to be moral realists and, interestingly, most people seem incapable of rationally justifying their moral beliefs (see Haidt 2001).

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Assuming the evolutionary origins of our cognitive faculties, the whole of modern science consists of by-product beliefs. Modern science is a by-product of cognitive faculties that were developed long before, say, 1600 CE. The cognitive processes that developed to help us fight, flee, feed, and reproduce proved enormously useful for millennia. Yet they were not developed to help *Homo sapiens* grasp relativity theory or the advanced mathematics that relativity theory includes. Noam Chomsky puts the problem thus: "The experiences that shaped the course of evolution offer no hint of the problems to be faced in the sciences, and the ability to solve these problems could hardly have been a factor in evolution" (Chomsky 1987: 158). Molecular biologist Gunther Stent has argued that the innate structures of the evolved brain are well suited to handling immediate experience but are poorly suited to those areas of most interest to scientific inquiry (Stent 1975). Similarly, E. O. Wilson succinctly states: "The human mind evolved to believe in gods. It did not evolve to believe in biology" (Wilson 1998).

All this is to say that claims of this sort—that religious beliefs are not adaptations, have no evolutionary functions, and were not produced directly via natural selection—could be just as easily applied to modern scientific beliefs (and, no doubt, many other domains of human inquiry). If one rejects belief in God because it is an evolutionary by-product, one should also reject belief in atoms, black holes, natural selection, and other products of modern science. We could even apply the by-product argument to evolutionary speculations about the origins of religious belief, which are themselves, like all scientific beliefs, by-product beliefs: therefore, evolutionary psychology is irrational. If by-product arguments count against all by-product beliefs, then belief in evolutionary psychology is untenable.

Some hold that morality, too, is an evolutionary by-product. One might think, following Dawkins' selfish gene theory, that an individual person's motivations are selfish (or, worse, not really one's own motivations at all; they are instead the "motivations" of one's genes) and that every action is calculated to improve one's chances of spreading one's genes into succeeding generations. If we are selfish gene-spreaders, then morality (which enshrines unselfishness or altruism) is a constraint on our nature and an obstacle to improving our chances of breeding success. However, suppose it is better for one's survival (and hence better for one's chances of reproducing) if one lives within a group that is bound together against thieves and murderers by a strong system of morality and of punishments that discourages immorality. Selfish people would thereby acquire moral

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

beliefs and even act unselfish, just to gain the benefits of living in a group; but make no mistake: people live in groups simply to maximize their own reproductive success, not out of deep concern for the needs of others. According to this view, morality is, like religion, a trick of the brain—a by-product that nonetheless might prove useful. As Richard Joyce puts it: "I take seriously the hypothesis that human morality is a trait that was not selected for. It may be akin to one of Gould's spandrels: a fortuitous by-product of natural selection, with no evolutionary function" (Joyce 2006: 134).

If one is willing, by virtue of by-product arguments, to proclaim the irrationality of religious belief, one must thereby also concede the irrationality of science and morality. Moreover, one must also concede the irrationality of the CSR objection itself; the faculties adduced to develop the CSR objection surely did not have explaining god away in mind as they evolved.

We could construct countless similar by-product arguments that would "prove irrational" countless beliefs that are rational. We suggest it is better simply to reject by-product arguments. Cognitive faculties can and do legitimately extend beyond the domains for which they were "designed." Most of our cognitive faculties do double duty: their original, primitive survival-enhancing duty and their much later reflective, expansive, life-enhancing manifestations. The by-product argument against religious belief should be rejected.

The Unreliability Argument

The CSR objector might respond that the god-faculty is different from the faculties that are used to develop modern science. Unlike, say, perception, reason, and arithmetic (some of the faculties modern science relies on), the god-faculty is unreliable. And if the god-faculty is unreliable, then it cannot produce justified religious beliefs. Unreliable faculties, such as the faculty that produces in each person the belief that they are better than average, do not produce rational beliefs.

At first glance, the god-faculty is unreliable. HADD working with the ToM system produces beliefs in a multiplicity of gods, angels, fairies, demons, and so on. And even if there is a God, most religious beliefs (in this case, beliefs in gods) simply cannot be true (because they are often contradictory). Since the god-faculty is unreliable, so this CSR objection goes, it produces irrational beliefs.

But, after this decidedly sobering first glance, is the god-faculty really unreliable? The god-faculty, as we have conceived it, principally

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

consists of "HADD plus ToM."[22] And HADD and ToM are not unreliable. HADD and ToM are instantly effective in a wide variety of circumstances. You walk through the mall and person-beliefs pop up instantly and regularly. You lecture to a group of students and find yourself believing that you are lecturing to minded persons (and then attributing intentions to them in various circumstances). When you check out at the grocery store, you attribute both agency and intention to the clerk. When you see an ambulance hurtling down the street at a very rapid rate with its siren screaming, you instantly believe that there is an ambulance driver inside who hopes to arrive in time to help someone. Human experience testifies: HADD and ToM *are* reliable.

But perhaps we should think that HADD and ToM are reliable with embodied persons, but they are unreliable when it comes to spiritual beings (this takes us back to the by-product belief issue, but let us press on). After all, HADD is H for a reason. Because of the god-faculty, we see faces in clouds, posit elves and fairies, and liberate gods from dead bodies. Recall Dennett's claim that outside of its domain, the god-faculty is a "fiction-generating contraption" (Dennett 2006: 120).

But perhaps HADD and ToM are not spiritually unreliable; they are simply spiritually imprecise or coarse-grained. Perhaps the function of the god-faculty is simply to make humans aware of the broad divine/moral dimension of reality. The function would be then to secure, by and large, belief in a supreme transcendent, moral, and morally provident being. So, while the god-faculty may be unreliable in securing rational belief in, say, Yahweh and Yahweh alone, the god-faculty is reliable in producing true beliefs about a divinity, that is, some kind of supernatural agency. Beliefs in a supernatural agency will coalesce in successful cooperative communities around a providential and moral transcendent being.

Given the earliest stages of human spiritual development, such coarse-grained, primitive beliefs as produced by the god-faculty may have been sufficient for human moral and spiritual improvement. John Calvin, reflecting on much later stages of human development, claimed little specific knowledge of divinity through the god-faculty (the *sensus divinitatis)*; this slight taste of divinity, he thought, is unclear and

[22]We have stressed this formulation for simplicity and because these two cognitive systems occupy a central place in many cognitive and evolutionary treatments of religion (see Guthrie 1993; Atran 2002; Barrett 2004), but also because they are prominent in attempts to explain religion away (see Dawkins 2006; Dennett 2006). Of course, cognitive and evolutionary scientists of religion often see the naturalness as much more complicated than merely HADD plus ToM working in the world.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

impure. A cloudy and imperfect sense of divinity could find a variety of cultural manifestations as, say, fairies and elves. Yet such imprecise spiritual/moral awareness may be sufficiently true to begin the process of human moral and spiritual development within the context of cooperative communities (it enables the unselfing—toward other-regard—necessary to move into more substantial communities). It may, however, take further reflection, genuine religious experience, and even revelation to refine these unformed inklings of the divine.

We find a similar sort of problem and solution in the moral domain. When one looks at the plethora of moral beliefs held throughout human history, one might think the moral faculties unreliable. Cannibalism, infanticide, and slavery are but a few of the practices held to be morally permissible by long and venerable moral traditions. I suspect the diversity of moral practices would parallel the diversity of religious practices. And if moral beliefs are produced by an unreliable cognitive process, moral beliefs cannot be justified. How, then, should we think of our moral beliefs?

Rather than think of the plethora of resultant, culturally specific, moral beliefs, one should think that our original moral cognitive processes produced primitive, coarse-grained moral beliefs that are imprecise yet basically true. Chandra Sripada writes: "There are certain *high-level themes* that one sees in the contents of moral norms in virtually all human groups—themes such as harms, incest, helping and sharing, social justice, and group defense. However, the *specific rules* that fall under these themes exhibit enormous variability" (Sripada 2008: 330). While one might find a plethora of cultural rules, they orbit around deeply profound, higher-level moral themes.

Michael Murray uses the example of contagion-avoidance to make the point that our moral faculties are coarse-grained but true (Murray 2009). We have a natural aversion to human waste, dead bodies, and rotting food. If you were to ask people in various cultures why touching a dead body or eating rotting food is bad, you would get a wide variety of answers. Contemporary people may answer in terms of germs while more primitive cultures may answer in terms of evil spirits. There is a wide variety of beliefs in the domain of contagion-avoidance with little apparent commonality. But there is this fundamental agreement: avoidance behavior is good. The relevantly specified cognitive mechanisms that produce reproductively successful behavior will likely be rather precise in basic behavior but imprecise in surrounding beliefs. Moral intuitions may be similar in this regard.

So the religious sense may parallel the moral sense. Humanity's incipient and primitive moral and spiritual impulses, behaviors, and

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

corresponding judgments may be truth-aimed but coarse-grained. They will subsequently find culturally specific and widely varying manifestations. In general, we might expect to find rather coarse-grained cognitive faculties with a great deal left to culture to specify. Culturally varying and divergent beliefs are likely to trace back to more fundamental behaviors/beliefs that are both adaptive and widely shared. Rational reflection (and revelation) may lead one to more precise, deeper, and more accurate moral and religious beliefs. But, given the coarse-grained nature of our moral and spiritual faculties, widely divergent beliefs are to be expected very early on even from relatively truth-aimed but imprecise faculties.

The initial function of the god-faculty, if there is a God, may be to make humans aware, in the most ordinary of circumstances, of the sacred dimension of reality, rather than, for example, clearly defined Judeo-Christian conceptions of God; on this view, God might be willing to concede culturally specific differences in order to produce the, by and large, true but very basic and inchoate belief in a divine being.

So, while the god-faculty alone (in ordinary circumstances, unprompted by God) may be unreliable in securing belief in, say, Yahweh and Yahweh alone, it may be reliable in producing belief in a divine aspect of reality. What Calvin called the "slight taste of divinity" is impure and unclear; such surface impurities and unclarities might include elves and fairies. But such culturally informed but divergent beliefs may contain a set of common core beliefs in a superknower that exercises moral providence.[23] This core knowledge of divinity may provide adequate moral and spiritual truth to bind humans into cooperative communities sufficient to begin the human spiritual journey. So the god-faculty (without any special supernatural prompting) could produce reliable core beliefs in a morally provident superknower despite apparent surface and culturally specific dissimilarities. If there is a God, then the god-faculty may be roughly reliable.

Subsequent increases in human knowledge, especially as one becomes aware of natural explanations of phenomena previously accounted for by, say, elves or nature "gods," may defeat the justification of some of these quasi-divine beliefs. The theist should not be concerned that these false religious beliefs are winnowed away by increases in knowledge. Indeed, the proper role of reason in these cases is to assist in the rejection of false, finite, or defective religious beliefs.

[23]See Boyer (2001) and Barrett (forthcoming) for scientific arguments in support of such a possibility.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Concessions

Religious believers who come to believe that their religious beliefs are the accidental by-product of natural processes (which required no immediate connection to God) should find their confidence in their beliefs diminished. The Indian Elephant Pill showed that the elephant belief was disconnected from reality and so rendered it untenable. Accidental by-product stories of religious belief, of the "fiction-generating contraption" story told by Dawkins and Dennett, claim that all religious beliefs—like beliefs in fairies and goblins—are disconnected from reality. If a religious believer were to come to believe that her religious beliefs were produced by a fiction-generating contraption, her confidence in her religious beliefs should be shaken.

Suppose we concede that the CSR objection makes religious belief less likely, everything else being equal. That is, if your *only* evidence for judging the rationality of your religious belief were the CSR objection, your belief would be less tenable (perhaps even no longer tenable). But perhaps not everything else is equal.

Consider an example. Suppose I walk into an art gallery featuring Nancy Reaganios's paintings at a "Just Say 'No'!" exhibition; my initial belief, given the theme, is that Nancy is not a drug user. Suppose, further, that upon entering, I see Nancy and, at the same time, smell marijuana. I take as evidence that she is an artist (the sort of craft stereotypically associated with chemically-assisted creativity) and the smell of marijuana; I find myself believing that she had been smoking marijuana. If that were my *only* evidence, then my revised belief—that Nancy is a marijuana smoker—may be fairly well founded. However, suppose I now meet Nancy's husband who is a judge well known for being harsh on drug crimes. If I take my initial set of data—*I see Nancy, Nancy is an artist* and *artists are not unlikely marijuana smokers,* and *I smell marijuana*—and add my new belief to it—*Nancy is married to a judge who is harsh on drug crimes*—then my initial belief —*Nancy is not a drug user*—is likely to survive the initially troubling evidence. My seeing the judge and learning about his antipathy to drug users restores my initial confidence that Nancy is not a drug user. Again, if my only evidence is that Nancy is an artist and that I smell marijuana, then (perhaps) my initial belief, all things being equal, would be diminished. But all things are not equal, and so, upon considering other relevant evidence, my initial belief in Nancy's nondrug use is restored.

Even if we were to concede that the CSR objection renders God's existence less likely (and so belief in God less tenable), that would

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

follow only with the qualification *everything else being equal*; that is, only if there is no other relevant evidence that might restore confidence in one's belief in God. Two things might restore confidence in one's belief in God: if one had independent evidence for the existence of God or if one had a genuine experience of God (or if someone I trusted had a genuine experience of God). For the sake of brevity, we will omit discussion of the oft-discussed issue of evidence for the existence of God. Let us, instead, focus on religious experience.

One might have independent reason to accept one's religious beliefs even though such reasons cannot be put into propositions or fleshed out into an argument. Even if a person were unaware of or unconvinced by theistic arguments, she could still have experiential evidence that God exists. Experience may convince where arguments falter. Again, we will simply and briefly discuss the logic of the situation. We cannot develop a complete case in detail. Consider the following example.

Suppose you read that wild turkeys were long ago driven out of cities in Michigan and even out of the entire state. Every book that you check gives good reason for believing that the wild turkey has disappeared from the state of Michigan. On the propositional evidence that you have acquired by reading books by relevant authorities, it is reasonable to believe that wild turkeys no longer exist in the state of Michigan. But suppose you wake up early, walk out into your Michigan backyard and come face to face with a flock of wild turkeys. At that moment, you have good independent reason to believe that wild turkeys live not only in Michigan but also in Michigan's cities. Your reason is not propositional; it is experiential (you see a turkey). You need not, indeed could not, put your reason to believe into an argument (unless "What I see, I see" is an argument). You simply see a wild turkey and find yourself believing that there is a wild turkey before you. Your belief is reasonably and independently grounded in your visual experience, not in a propositional argument. That is, wild turkeys activate your cognitive faculties in such a way as to immediately and noninferentially produce belief in the existence of wild turkeys. And, while the expert writers of the books and articles on wild turkeys would disagree with you, you say "So what?" They did not have the experience that you had. They disagree, but both of you are rational.

Suppose when you read Dawkins and Dennett, you became critical of your natural belief in God; perhaps they also persuaded you that theistic arguments are all bad. So you come to believe that belief in God is a by-product belief with no independent evidence to support it. Slowly, you find yourself losing your belief in God. Or suppose you do not believe in God in the first place and that Dawkins and Dennett simply confirm your unbelief.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Now suppose you are on a mountaintop watching the sunset and are so taken with the majestic splendor that you find yourself with the belief that God created all of this. You do not rehearse an argument from design and suddenly decide the argument is flawless. You simply have a certain experience that immediately grounds your belief in God, an experience that involved your god-faculty but not your reasoning faculty. Or suppose you have done something horribly or not so horribly wrong. Your guilt grows from a few spots into a blot that you cannot erase. You come to feel that you have offended not only those you have hurt but that you have also offended the Cosmos (God). You are aware of attempts to base morality upon human convention or reason but you find yourself believing that you have offended the ultimate Lawgiver and stand in need of God's forgiveness. So you ask God for forgiveness and find relief and release. You do not rehearse moral arguments for the existence of God. You feel guilty toward God and feel relief upon accepting what you take to be God's forgiveness.

Suppose that in these sorts of religious experiences you, indeed, come face to face with God.[24] In such circumstances, one finds oneself immediately believing in God. Just as seeing a wild turkey can experientially grounds one's wild turkey beliefs, so, too, one's religious experience can experientially ground one's belief in God. And, again, if God is a person, then the god-faculty (HADD plus ToM) is precisely the cognitive equipment we would expect to find employed in coming into belief in God. So one may have independent, experiential, and personal reasons to believe in God even if one lacks adequate propositional evidence for that belief. And so, even if the CSR objection were to render belief in God less tenable, experientially grounded beliefs about God can restore one's initial confidence in God's existence (or even move one from atheism to theism).[25]

CONCLUSION

It would be a mistake to think of this article as an apology for theism. While we defend theistic belief against the CSR objection, it is not the sort of defense that is likely to convince the nontheist (or at least the determined nontheist); and it was not intended to argue that anyone *should* (epistemically) believe in God. We have not argued that

[24]This is just a suggestive assessment of how this epistemic situation might work. For a full defense of religious belief grounded in religious experience, see Alston (1991).

[25]It is arguable that one might believe on the basis of testimony of one who has also had a genuine experience of god (see Clark and Rabinowitz forthcoming).

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

there is a God, or that God is the best explanation of the god-faculty, or that God's existence is the best explanation of widespread religious belief. We have argued only that belief in God need not be irrational even if the cognitive and evolutionary scientists of religion do provide good naturalistic explanations for religious beliefs. While some have claimed that such explanations undermine the rationality of religious belief, we have shown that this claim is unwarranted. Or, one might argue, if finding the natural, evolutionary, non-truth-aimed source of religious belief were to undermine rational religious belief, it would also undermine beliefs that undergird these same sciences, and thereby prove self-defeating.

Our sustained Plantinga–Reid reflection on natural belief in God and epistemic defeaters was intended to show that belief in God naturally produced could be prima facie justified unless or until the belief is rationally defeated. Without assuming God's nonexistence, which would beg the relevant epistemic question at the outset, we critically considered whether or not various explicit forms of the CSR objection constitute such defeaters. We argued that they do not. One cannot make any assessments of belief justification or rationality without first venturing precise definitions of "justification" and "rationality." We defended the possible justification/rationality of religious belief within a broadly Reidian context and we defended this broadly Reidian conception as one that fits our naturally constituted cognitive equipment and our epistemic situation; and cognitive science seems to be on the side of a Reidian conception of our cognitive equipment.

On other conceptions of justification/rationality religious belief may not come out so well—either initially or when faced with the CSR objection. Religious belief, for example, does not come off well given the assumptions of Enlightenment evidentialism.[26] Agreed. But the discussion has to start somewhere and one's starting points need to be clearly articulated and defended, and, cursory remarks from Dawkins and Dennett notwithstanding, there is little substantive discussion of the CSR objection and rational religious belief. Our article is an attempt to enter into the fray with some clarity and conviction to generate further discussion.

[26]One might also argue that a physicalist and evolutionary model of human minds as "finite, limited, dependent and, typically, fallible" does not lead to the conclusion that the beliefs supplied by our innate cognitive capacities are *correct* or should or must be *trusted* as accurate, merely that they have been effective in allowing organisms like us to achieve our survival and reproductive goals. But if our beliefs are illusions, then there is precious little reason to accept this sort of argument.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

REFERENCES

Alper, Matthew 2001 *The "God" Part of the Brain*. Boulder, CO: Rogue Press.

Alston, William 1991 *Perceiving God*. Ithaca, NY: Cornell University Press.

Atran, Scott 2002 *In Gods We Trust*. New York, NY: Oxford University Press.

Barrett, Justin L. 2000 "Exploring the Natural Foundations of Religion." *Trends in Cognitive Sciences* 4:29–34.

2004 *Why Would Anyone Believe in God?* Lanham, MD: AltaMira.

Forthcoming *Born Believers: The Science of Childhood Religion*. New York, NY: The Free Press.

Bergmann, Michael 2006 *Justification Without Awareness*. New York, NY: Oxford University Press.

Bering, Jesse 2002 "Intuitive Conceptions of Dead Agents' Minds: The Natural Foundations of Afterlife Beliefs as Phenomological Boundary." *Journal of Cognition and Culture* 2:263–308.

2006 "The Folk Psychology of Souls." *Behavioral and Brain Sciences* 29:453–462.

Bloom, Paul 2004 *Descartes' Baby: How Child Development Explains What Makes Us Human*. London, UK: William Heinemann.

2005 "Is God an Accident?" *The Atlantic* December: 1–8.:

2007 "Religion Is Natural." *Developmental Science* 10: 147–151.

Boyer, Pascal 2001 *Religion Explained: The Evolutionary Origins of Religious Thought*. New York, NY: Basic Books.

2004 "Why Is Religion Natural." *Skeptical Inquirer* 28/2, March.

Boyer, Pascal and Pierre Lienard 2006 "Why Ritualized Behavior? Precaution Systems and Action-parsing in Developmental, Pathological, and Cultural Rituals." *Brain & Behavioral Sciences* 29:595–613.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Chomsky, Noam 1987 — *Language and the Problem of Knowledge*. Cambridge, MA: The MIT Press.

Clark, Kelly James 1990 — *Return to Reason*. Grand Rapids, MI: Eerdmans Publishing Company.

Clark, Kelly James and Justin L. Barrett 2010 — "Reformed Epistemology and the Cognitive Science of Religion." *Faith and Philosophy* 27: 174–189.

Clark, Kelly James and Dani Rabinowitz Forthcoming — "Knowledge and the Cognitive Science of Religion," *European Journal of Philosophy of Religion*.

Clifford, W. K. 1886 — *Lectures and Essays*. London, UK: Macmillan and Co.

Cohen, E. 2007 — *The Mind Possessed: The Cognition of Spirit Possession in an Afro-Brazilian Religious Tradition*. New York, NY: Oxford University Press.

Dawkins, Richard 2006 — *The God Delusion*. Boston, MA: Houghton Mifflin.

Dennett, Daniel 2006 — *Breaking the Spell: Religion as a Natural Phenomenon*. New York, NY: Viking.

Guthrie, Stewart 1980 — "A Cognitive Theory of Religion." *Current Anthropology* 21:181–194.

1993 — *Faces in the Clouds: A New Theory of Religion*. New York, NY: Oxford University Press.

Haack, Susan 2009 — *Evidence and Inquiry: A Pragmatist Reconstruction of Epistemology*. Amherst, NY: Prometheus Books.

Haidt, Jonathan 2001 — "The Emotional Dog and Its Rational Tail." *Psychological Review* 108:814–834.

Hirschfeld, Lawrence and Susan Gelman, eds. 1994 — *Mapping the Mind: Domain Specificity in Cognition and Culture*. Cambridge, UK: Cambridge University Press.

Joyce, Richard 2006 — *The Evolution of Morality*. Cambridge, MA: MIT Press.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

Kelemen, Deborah 2004 "Are Children 'Intuitive Theists?' Reasoning about Purpose and Design in Nature." *Psychological Science* 15:295–301.

McCauley, Robert N. 2007 "Natural Cognition." *Distinguished Award Lecture on The Cognitive Foundations of Science and Religion at the Centre for Anthropology and Mind*. Oxford University, April 24.

Forthcoming *Why Religion Is Natural and Science Is Not*. New York, NY: Oxford University Press.

Murray, Michael J. and Andrew Goldberg 2009 "Evolutionary Accounts of Religion: Explaining and Explaining Away." In *The Believing Primate: Scientific, Philosophical, and Theological Reflections on the Origin of Religion*, ed. Jeffrey Schloss and Michael Murray, 179–199. New York, NY: Oxford University Press.

Plantinga, Alvin 1983 "Reason and Belief in God." In *Faith and Rationality*, ed. Alvin Plantinga and Nicholas Wolterstorff. Notre Dame, IN: University of Notre Dame Press.

1993a *Warrant: The Current Debate*. New York, NY: Oxford University Press.

1993b *Warrant and Proper Function*. New York, NY: Oxford University Press.

2000 *Warranted Christian Belief*. New York, NY: Oxford University Press.

Reid, Thomas 1764 "An Inquiry into the Human Mind on the Principles of Common Sense." In *Inquiry and Essays*, ed. Ronald Beanblossom and Keith Lehrer. Indianapolis, IN: Hackett, 1983.

Rorty, Richard 1998 *Truth and Progress*. Cambridge, UK: Cambridge University Press.

Simons, Daniel J. 2000 "Current Approaches to Change Blindness." *Visual Cognition* 7:1–15.

Simons, Daniel J. and Daniel T. Levin 1997 "Change Blindness." *Trends in Cognitive Sciences* 1:261–267.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

1998 "Failure to Detect Changes to People in a Real-world Interaction." *Psychonomic Bulletin and Review* 5:644–649.

Slingerland, Edward 2008 "Who's Afraid of Reductionism? The Study of Religion in the Age of Cognitive Science." *Journal of the American Academy of Religion* 76:375–411.

Spelke, Elizabeth S. and Katherine D. Kinzler 2007 "Core Knowledge." *Developmental Science* 11: 89–96.

Sperber, Dan, David Premack, and Ann James Premack, eds. 1995 *Casual Cognition: A Multidisciplinary Debate*. New York, NY: Oxford University Press.

Sripada, Chandra 2008 "Nativism and Moral Psychology." In *Moral Psychology, Volume 1: The Evolution of Morality: Adaptations and Innateness*, ed. Walter Sinnott-Armstrong, 319-344. Cambridge, MA: MIT Press.

Stent, Gunther 1975 "Limits to the Scientific Understanding of Man." *Science* 4181:1052–1057.

Williamson, Timothy 2002 *Knowledge and Its Limits*. Oxford, UK: Oxford University Press.

Wilson, E. O. 1998 "The Biological Basis of Morality." *The Atlantic Monthly*, April 281(4):53–70.

Wolterstorff, Nicholas 1983a "Can Belief in God Be Rational If It Has No Foundations?" In *Faith and Rationality*, ed. Alvin Plantinga and Nicholas Wolterstorff. Notre Dame, IN: University of Notre Dame Press.

1983b "Thomas Reid on Rationality." In *Rationality in the Calvinian Tradition*, ed. Hendrik Hark, Johan van der Hoven and Nicholas Wolterstorff, 43–69. Lanham, MD: University Press of America.

Downloaded from jaar.oxfordjournals.org by guest on April 21, 2011

View publication stats