

COGNITIVE REGENERATION AND THE NOETIC EFFECTS OF SIN: WHY THEOLOGY AND COGNITIVE SCIENCE MAY NOT BE COMPATIBLE

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Abstract. Justin Barrett and Kelly James Clark have suggested that cognitive science of religion supports the existence of a god-faculty akin to *sensus divinitatis*. They propose that God may have given rise to the god-faculty via guided evolution. This suggestion raises two theological worries. First, our natural cognition seems to favor false god-beliefs over true ones. Second, it also makes us prone to tribalism. If God hates idolatry and moral evil, why would he give rise to mind with such biases? A Plantingian response would point to the noetic effects of sin. Such a response, however, would have to assume that God is restoring the minds of believers. This paper considers empirical reasons to doubt that such a process is taking place.

Why do so many people believe in God or gods?¹ Christian theologians have traditionally understood true faith as God's supernatural gift. According to cognitive science of religion (CSR), however, the roots of all kinds of supernatural belief lie in the evolved cognitive biases and mechanisms of the human mind. These include our sensitivity to minimally counterintuitive ideas,² to cues of agency,³ the tendency to see design and purpose in the natural world⁴ as well as in our life events.⁵ At first blush, such naturalistic theories seem to explain away supernatural accounts that take God to be the origin of god-belief. However, theologians have traditionally argued that God endowed humans with natural faculties sensitive to perceiving God. Therefore, scientific and theological accounts of god-belief may both be true. The question is, are they compatible?

Psychologist Justin Barrett and philosopher Kelly James Clark have famously argued that god-belief can be rational even if it is generated by automatic cognitive biases and mechanisms.⁶ Also, they view the results of CSR as largely compatible with a theological understanding of the origins of god-belief. Cognitive science may support the existence of something akin to *sensus divinitatis* or a "god-faculty" that gives humans a direct, basic awareness of the existence of God or gods. Calvin's concept of *sensus divinitatis* has been re-introduced into contemporary debates over religious epistemology by Alvin Plantinga.⁷ A central claim in Plantinga's Reformed epistemology is that belief in God is typically not born out of reflective consideration of arguments and evidence for God. Rather, *sensus divinitatis* simply gives rise to belief when activated by a

1 In all that follows, "God" with a capital G stands for the God of Christian theism while "god" stands for any supernatural agent people today or in the past have believed in.

2 Pascal Boyer, *Religion Explained: The Evolutionary Origins of Religious Thought* (Basic Books, 2001).

3 Justin L. Barrett, *Born Believers: The Science of Children's Religious Belief* (Free Press, 2012).

4 Deborah Kelemen and Evelyn Rossett, "The Human Function Compunction: Teleological Explanation in Adults", *Cognition* 111, no. 1 (2009).

5 Konika Banerjee and Paul Bloom, "Why Did This Happen to Me? Religious Believers' and Non-believers' Teleological Reasoning about Life Events", *Cognition* 133, no. 1 (2014).

6 Kelly J. Clark and Justin L. Barrett, "Reformed Epistemology and the Cognitive Science of Religion", *Faith and Philosophy* 27, no. 2 (2010); Kelly J. Clark and Justin L. Barrett, "Reidian Religious Epistemology and the Cognitive Science of Religion", *Journal of the American Academy of Religion* 79, no. 3 (2011); Justin L. Barrett, "Cognitive Science, Religion, and Theology", in *The Believing Primate: Scientific, Philosophical, and Theological Reflections on the Origin of Religion*, ed. Jeffrey Schloss and Michael Murray (2009); Barrett, *Born Believers*; Kelly J. Clark, *God and the Brain: The Rationality of Belief* (William B. Eerdmans Publishing Company, 2019).

7 Alvin Plantinga, *Warranted Christian Belief* (Oxford Univ. Press, 2000).

beautiful landscape, a survival of a life-threatening accident, or by other existentially moving situations. As Clark and Barrett point out, this coheres well with how cognitive scientists understand the formation of god-beliefs. Similarly to Plantinga, they argue that this kind of direct belief-forming process can be fully rational. Thus, they find cognitive science to be compatible with a Plantingian view of rationality in general and CSR compatible with the rationality of god-belief in particular. They also see “remarkable points of convergence” as well as “a few points of divergence” between CSR and Reformed epistemology.⁸

Clark and Barrett also make an intriguing theological suggestion: God may have guided the evolutionary process in order to give rise to the god-faculty.⁹ In other words, perhaps the cognitive biases and mechanisms unearthed by CSR are part of God’s providential plan for humanity. This theological reading of CSR is the focus of this article. I will begin by presenting two problems previously mentioned in the literature. First, it seems that CSR biases and mechanisms make humans more likely to believe in false deities than in the God of Abrahamic monotheism. Second, people display an in-group/out-group bias, which seems to be the root cause of moral evil and yet just as “natural” as our susceptibility to god-belief. I will call these idolatry bias and tribalism bias, respectively. Since God is said to hate idolatry and moral evil, one wonders why God would give rise to human minds with such biases. Next, I will consider a “Plantingian” response that refers to the noetic effects of sin and discuss the possibility of making such a response compatible with evolutionary science. However, I will argue that the sin response makes theological sense only if it is joined with the claim that God restores the minds and hearts of believers. According to Plantinga, regeneration has both cognitive (one’s view of God becomes increasingly clear and correct) and affective (one grows in love toward God and other people) aspects. Thus, we would expect believers to be gradually healing from their idolatrous and tribalistic biases. I will then consider reasons to question whether regeneration is actually taking place. CSR suggests that Christians entertain theologically incorrect views of God. Also, evidence from social psychology indicates that religiosity is often positively linked with prejudice. Finally, I will consider a few possible solutions to this problem.

I. THE NATURALNESS OF IDOLATRY AND TRIBALISM

Several CSR scholars have argued that belief in supernatural agents is “cognitively natural”.¹⁰ In other words, god-beliefs are widespread because they are reinforced by normally developing, pan-human cognitive biases and mechanisms. This idea resonates with traditional theological claims regarding general revelation. According to the *Catechism of the Catholic Church*, for example, man is by nature a “religious being” whose “faculties make him capable of coming to a knowledge of the existence of a personal God”.¹¹ From a theological point of view, the god-faculty may be seen as a capacity designed by God for receiving the input from God’s general revelation. As Clark and Barrett suggest, perhaps God has guided the cognitive evolution in close detail in order to bring about these highly specialized features of human cognition.

CSR scholars typically do not think, however, that belief in one God as such is cognitively natural. As Helen De Cruz and Johan De Smedt point out, the earliest historical evidence of religion — cave paintings and sculptures dating back about 30,000 years — suggests that “the earliest religious concepts in human prehistory were not at all like the Abrahamic monotheistic God, but rather, consisted of a rich supernatural world that included animals, humans and intermediate forms”.¹² “Big Gods” seem to appear

8 Clark and Barrett, “Reformed Epistemology and the Cognitive Science of Religion”, 174. For a critical treatment of this suggestion, see Halvor Kvandal, “The God-Faculty Dilemma: Challenges for Reformed Epistemology in the Light of Cognitive Science”, *International Journal of Philosophy and Theology* 81, no. 4 (2020).

9 Barrett, *Cognitive Science, Religion, and Theology*, 97; Clark and Barrett, “Reidian Religious Epistemology and the Cognitive Science of Religion”, 645; Clark, *God and the Brain*, 93–111.

10 Justin L. Barrett and Aku Visala, “In What Sense Might Religion Be Natural?”, in *The Naturalness of Belief: New Essays on Theism’s Rationality*, ed. Paul Copan and Charles Taliaferro (Lexington Books, 2018).

11 *Catechism of the Catholic Church: Revised in Accordance with the Official Latin Text Promulgated by Pope John Paul II* (Libreria Editrice Vaticana; United States Catholic Conference, 1997), 14–16.

12 Helen de Cruz and Johan de Smedt, “Reformed and Evolutionary Epistemology and the Noetic Effects of Sin”, *International Journal for Philosophy of Religion* 74, no. 1 (2013): 59.

rather late in the history of religions.¹³ Since the CSR mechanisms are usually taken to be at least as old as the earliest forms of religion, it seems that they have predominantly disposed humans to beliefs about several, finite supernatural agents.

Now, what Clark and Barrett mean by a “god-faculty” is simply that “the ordinary arrangement and function of cognitive architecture in human minds often produces nonreflective, unreasoned belief in gods.”¹⁴ While it may not produce belief in “Yahweh and Yahweh alone”, the faculty could make “humans aware of the broad divine/moral dimension of reality.”¹⁵ Unlike Plantinga, then, they do not argue for a mechanism that produces only or mainly monotheistic belief in the one true God. But if “God chose this sort of mind for us”, Barrett asks,

why do the documented conceptual biases only encourage belief in superhuman agents generally and not one true, accurate God concept? Further, if God created humanity to enjoy a loving relationship with Him, why not hard-wire into our brains a fully formed belief in God?¹⁶

More importantly, as Clark notes, the god-faculty also produces beliefs in “elves, dwarves, goblins, tree spirits, and witches.”¹⁷ From a Christian viewpoint this means that we are more prone to idolatry than to belief in the one true God. The Bible and the Christian tradition clearly proscribe all types of idolatry and command undivided devotion to the God of Israel (Ex. 20:2; Matt. 22:37–38; Acts 17:29–30; 1. Cor. 10:19–22). If the purpose of the god-faculty would be to produce awareness of *this* God, why has it mostly produced idolatrous beliefs?

Now consider the second theological worry. John Teehan has presented what he calls a cognitive problem of evil.¹⁸ Human minds sculpted by natural selection are not only prone to god-belief but also prone to moral evil. Our natural, intuitive moral psychology is the root cause of much moral evil in the world, of xenophobia, ethnocentrism, racism and such. Teehan concentrates on one proximate mechanism influencing moral behavior: empathy. Empathy is “the capacity to recognize and respond to, on both a cognitive and emotional level, the emotional state of another individual.”¹⁹ The evidence for the crucial role of empathy comes, for example, from studies of psychopaths whose empathy-generating brain areas are damaged. Teehan, however, is interested in healthy brains, not damaged ones. He refers to experiments that point to a decreased sensitivity to feeling empathy toward people who do not belong to our in-group. People carefully differentiate between those in their in-group (family, tribe, class, nation, fan club) and those belonging to some out-group. In one study, the brains of Chinese and Caucasian participants were monitored while they watched videos of Chinese and Caucasian people in pain.²⁰ The empathy levels differed significantly depending on whether the person on the video was of their own ethnicity or not. Significant differences in empathic response can also be elicited by religious and political partisanship, even by football.²¹ Moreover, members of extreme out-groups –such as drug addicts or homeless people— are often dehumanized. Pictures of such persons elicit a disgust response, the kind that usually arises as a reaction to disgusting objects.²² While we may question the extent to which moral evil can be explained by reference to such a tribalism bias, Teehan argues that “it is the psychological

13 Ara Norenzayan, *Big Gods: How Religion Transformed Cooperation and Conflict* (Princeton Univ. Press, 2013).

14 Clark and Barrett, “Reidian Religious Epistemology and the Cognitive Science of Religion”, 640.

15 Ibid., 642. However, Barrett has elsewhere written that “children’s minds are naturally tuned up to believe in gods generally, and perhaps God in particular”. Barrett, *Born Believers*, 4.

16 Barrett, *Cognitive Science, Religion, and Theology*, 97.

17 Clark, *God and the Brain*, 76.

18 John Teehan, “Cognitive Science, Evil, and God”, in *Advances in Religion, Cognitive Science, and Experimental Philosophy*, ed. Helen de Cruz and Ryan Nichols (Bloomsbury Academic, 2016).

19 Teehan, “Cognitive Science, Evil, and God”, 45.

20 Xiaojing Xu et al., “Do You Feel My Pain? Racial Group Membership Modulates Empathic Neural Responses”, *Journal of Neuroscience* 29, no. 26 (2009).

21 Jay J. van Bavel, Dominic J. Packer, and William A. Cunningham, “The Neural Substrates of In-Group Bias: A Functional Magnetic Resonance Imaging Investigation”, *Psychological Science* 19, no. 11 (2008).

22 Lasana T. Harris and Susan T. Fiske, “Dehumanizing the Lowest of the Low: Neuroimaging Responses to Extreme Out-Groups”, *Psychological Science* 17, no. 10 (2006).

basis of prejudice, discrimination, and dehumanization—and all the injustice, harm, and violence that follow²³.

How is this related to CSR and to the claim about the divine guidance of cognitive evolution? According to cognitive science, our minds process information on two levels called intuition and reflection (or analytical thinking), also known as System 1 and System 2.²⁴ System 1 refers to the quick and automatic processes that mostly operate outside of our conscious control and that evolution has designed for an efficient response. System 2 is needed for conscious, reflective, and effortful thinking. The cognitive naturalness of god-beliefs basically means that they are reinforced by System 1. As Teehan notes, the cognitive mechanisms for empathy also function as a part of System 1. Just as natural selection has made our minds sensitive to ideas of supernatural agency, it also fosters animosity toward out-groups. While education (where System 2 is constantly employed) and other forms of culture can help suppress intuitive thinking, Teehan argues that the dispositions toward religious belief and tribalism both follow from the brain working as it was designed to work by evolution. The cognitive biases and mechanisms that make up System 1 are parts of a basic, universal blueprint of the human mind. If God carefully guided the cognitive evolution in order to give rise to the highly specialized tools of the god-faculty, it would seem that God is also causally responsible for our deviated moral intuitions. But surely, Teehan argues, a morally perfect God would not want to create people with a strong tendency toward moral evil. In his view, whether or not a theological account of the evolution of god-belief can be made compatible with CSR, it cannot be made consistent with the findings of moral psychology.

II. A RESPONSE: THE NOETIC EFFECTS OF SIN

Let us consider a response to these worries. The traditional Christian view of history can be divided into three main stages:

- (1) God's original, good, well-designed creation.
- (2) Sin corrupting the original creation.
- (3) God overcoming sin and restoring the original creation.

The questions we dealt with in the previous section seem to concern stage (1). A proper theological response, however, must take stage (2) also into account. According to traditional Christian understanding, sin is a disease that affects our head and our heart, our cognition and our affections. The idea of the noetic effects of sin is integral to Reformed theology as well as Plantinga's Reformed epistemology. In what follows, I will consider the problems outlined above in light of Plantinga's claims regarding sin and regeneration. In discussing the noetic effects of sin, Plantinga differentiates between sin's cognitive and affective consequences. Because of the cognitive consequences, *sensus divinitatis* has become diseased and dysfunctional.

The most serious noetic effects of sin have to do with our knowledge of God. Were it not for sin and its effects, God's presence and glory would be as obvious and uncontroversial to us all as the presence of other minds, physical objects, and the past. (...) Our original knowledge of God and his glory is muffled and impaired; it has been replaced (by virtue of sin) by stupidity, dullness, blindness, inability to perceive God or to perceive him in his handiwork. Our knowledge of his character and his love toward us can be smothered: it can even be transformed into a resentful thought that God is to be feared and mistrusted; we may see him as indifferent or even malignant.²⁵

Cognitive consequences of sin, then, include unbelief and false ideas about the nature of God. Even some theologians tend to think of God as "an impersonal abstract object ('the ground of being') rather than as a living person who judges me" or as "an indulgent grandparent who smiles at the childish peccadilloes

23 Teehan, "Cognitive Science, Evil, and God", 48.

24 Daniel Kahneman, *Thinking, Fast and Slow* (Penguin, 2011).

25 Plantinga, *Warranted Christian Belief*, 178.

of her grandchildren” rather than “as a holy God who hates sin”.²⁶ Whereas Plantinga focuses on views prevalent in the academy, he would surely agree with Calvin that polytheism and animism likewise result from the corruption of *sensus divinitatis*.²⁷ Sin also has affective consequences. “Instead of loving God above all and my neighbor as myself”, Plantinga writes, “I am inclined to love myself above all and, indeed, to hate God and my neighbor”.²⁸ One affective consequence is prejudice towards people outside of one’s in-group.

Because of hatred or distaste for some group of human beings, I may think them inferior, of less worth than I myself and my more accomplished friends. Because of hostility and resentment, I may misestimate or entirely misunderstand someone else’s attitude toward me, suspecting them of trying to do me in, when in fact there is nothing to the suggestion.²⁹

The concept of the noetic effects of sin, then, could provide a viable theological response to the worries raised by the naturalness of idolatry and tribalism. Both biases are the result of sin (stage 2), not part of God’s original design (stage 1). Such a response, however, is itself at odds with evolutionary science, for it seems to assume a historical Fall into sin. According to Helen De Cruz and Johan De Smedt, science casts doubt particularly on two claims in the traditional Augustinian account of the Fall: (a) that the first humans were created epistemically and morally perfect, and that (b) by committing the first sin they introduced death and corruption (including epistemic and moral corruption) into the world.³⁰ While Plantinga avoids taking a stand on the historicity of Adam and Eve, he does say that humans have fallen from “a pristine state”.³¹ Such a pristine state seems improbable in terms of idolatry and tribalism. As De Cruz and De Smedt argue, the further down the history of our species we gaze, the more gods and the more violence we find. The earliest forms of religion makes it very unlikely that once upon a time people had a correct view of God until they fell into shamanism and polytheism. Also, for all we know, the hominids that preceded us were far more violent than modern humans; our primate cousins such as chimpanzees certainly are.³² As Teehan writes, we have “no evidence of any period in human history in which we find an inclusive love for the stranger that (a) breaks with a previous state of in-group bias common to other mammals and (b) then gives way again to rampant in-group bias, ostensibly resulting from original sin”.³³ An evolutionary view of history, therefore, is not easily reconciled with the idea of the noetic effects of sin. Even if we dismissed most features of the story in Genesis as unhistorical, it seems some kinds of “before” and “after” are needed for the sin response to make sense. As a solution to this problem, De Cruz and De Smedt offer an “Irenaean” account of the Fall.

According to Irenaeus, humanity did not begin in a state of perfection, but rather, in a not fully developed condition. The first humans were not morally perfect, but in a state of moral innocence (like nonhuman animals). Although Irenaeus also thought about the Fall in terms of a factual historical event, its historicity was not central to his notion of sin, nor did he regard it as an act that tainted subsequent humankind. Rather, he saw the Fall as a representation of the loss of this state of moral innocence (Jacobsen 2005). Under this view, it is possible to perceive sin not as the outcome of a single historical event, but as tendencies to be morally or cognitively off-track.³⁴

An Irenaean account, the authors suggest, allows us to reject a historical fall from perfection to corruption and to view the noetic effects of sin as the outcome of a gradual process. Cognitive evolution is viewed as analogous to the intellectual and moral development of a child where new capacities and abili-

26 Ibid., 179.

27 See Paul Helm, “John Calvin, the “Sensus Divinitatis”, and the Noetic Effects of Sin”, *International Journal for Philosophy of Religion* 43, no. 2 (1998): 95.

28 Plantinga, *Warranted Christian Belief*, 173.

29 Ibid., 177.

30 Cruz and Smedt, “Reformed and Evolutionary Epistemology and the Noetic Effects of Sin”, 60.

31 Plantinga, *Warranted Christian Belief*, 172, 177.

32 Grant S. McCall and Nancy Shields, “Examining the Evidence from Small-scale Societies and Early Prehistory and Implications for Modern Theories of Aggression and Violence”, *Aggression and Violent Behavior* 13, no. 1 (2008).

33 Teehan, “Cognitive Science, Evil, and God”, 51.

34 Cruz and Smedt, “Reformed and Evolutionary Epistemology and the Noetic Effects of Sin”, 61.

ties bring about new possibilities for right and wrong thinking and behavior. In this picture, then, stages (1) and (2) become more intertwined.

De Cruz and De Smedt also argue that *sensus divinitatis* is not corrupted. Like Clark and Barrett, they suggest it is and always has been *underspecified*. Left to itself, the faculty might produce some sort of thin theistic belief in “one or more supernatural agents, who have intentions, desires and beliefs [...] is omniscient [...] and causally responsible for the design features of our universe [...] and takes an interest in our morally relevant actions”.³⁵ Perhaps, then, we should view the *sensus divinitatis* as not like a GPS but more like a medieval map that leads one roughly in the right direction. Nevertheless, the problem remains: why have so many humans worshipped deities such as forest spirits and fertility gods instead of opting for thin theism? De Cruz and De Smedt blame the cultural environment. They compare *sensus divinitatis* to the human language faculty. The ability to learn a language is cognitively natural, but the cultural environment determines which language children learn. Similarly, the environment determines which god-concept(s) children eventually adopt. Perhaps, as Calvin himself believed, Scripture and Holy Spirit are needed for people to arrive at the correct concept of God. But, De Cruz and De Smedt argue, such “supplementary sources” are not meant to fix the *sensus divinitatis*. After all, it is not broken.

I do not find this response very promising. First, although Irenaeus might have softened the Fall, his account does not differ that much from Augustine’s.³⁶ Irenaeus does seem to assume a descent from a paradisiacal state that resulted in man losing the image of God. Of course, one may simply draw inspiration from his account and develop it further, but one would lose the support of tradition one hopes to gain from Irenaeus. Second, explaining the historical prevalence of idolatry by reference to the cultural environment that feeds *sensus divinitatis* false ideas suggests that the cultural environment is itself corrupted. This raises the question of what corrupted it. We are still left without an explanation of what causes all this idolatry if it’s not anything God did or we did. Now, perhaps an Irenaean account could view the propensity to idolatry and tribalism as part of humanity’s childhood and point to God’s long-term plan to *eventually* give rise to monotheism via cultural evolution. But such an account would have to view the propensity for idolatry and tribalism flowing out of God’s original design, which again is theologically problematic.³⁷

III. COGNITIVE REGENERATION AND THEOLOGICAL INCORRECTNESS

Whether or not an Irenaean account can escape these criticisms, a response in reference to noetic effects of sin faces an additional theological worry related to stage (3). According to the Christian narrative, God is in the business of redeeming at least some human beings from their sinful state. Let us formulate the three stages in light of our topic and the Plantingian framework we have adopted.

35 Ibid., 62–63.

36 Daniel Pedersen, ““Irenaean” or “Schleiermacherian”? An Evolutionarily Plausible Account of the Origins of Sin”, *Theology and Science* 14, no. 2 (2016).

37 Every account of the Fall must grapple with the difficult question of how the *propensity* to sin could enter God’s good creation. Reference to free will does not offer an easy solution. See Kevin Timpe, *Free will in Philosophical Theology* (Bloomsbury Academic, 2014), 33–47. Since the problem is certainly not bigger for an Irenaean account than for an Augustinian one, an Irenaean response may alleviate scientific worries without inviting additional theological ones. The theological worry is intensified, however, by a recent suggestion by Rik Peels and colleagues that perhaps humans have chosen to sin from the beginning time and time again, and that is why cognitive mechanisms have de facto always produced false god-beliefs. Had humans chosen not to sin, the mechanism would have functioned reliably. A propensity to sin continually seems more difficult to reconcile with the original goodness of creation than an individual instance of sin by the original human couple. See Rik Peels, Hans van Eyghen, and Gijsbert van den Brink, “Cognitive Science of Religion and the Cognitive Consequences of Sin”, in *New Developments in the Cognitive Science of Religion: The Rationality of Religious Belief*, ed. Hans van Eyghen, Rik Peels and Gijsbert van den Brink (Springer International Publishing, 2018), 199–214.

- (1*) God has originally created humans (via guided evolution) with cognitive faculties that make them prone to believe in the one true God and affective faculties that make them prone to love God and their neighbors.³⁸
- (2*) Sin has caused cognitive damage making people prone to idolatry (specifically, false ideas of divinity) and affective damage making people prone to moral evil (specifically, animosity and disregard for people outside of their in-group).
- (3*) The Holy Spirit brings about a cognitive and affective regeneration in believers through which they are gradually restored into rightly believing and loving creatures.

In what follows, I will assume that the sin response would make little theological sense if it wasn't joined with the idea of regeneration. Even those Christian thinkers who disagree with this Plantingian formulation of stage (1*) — as Clark and Barrett might — would have to respond to whether regeneration and sanctification ought to affect how believers think of God and treat other people. Plantinga describes stage (3*) as follows.

The believer enters a process whereby she is regenerated, transformed, made into a new and better person. We might say she acquires a new and better nature. This new and better nature is also a renewal, a restoration of the nature with which humankind was originally created. Sin damaged our nature; regeneration, the work of the Holy Spirit, is (among other things) a matter of setting right and repairing that damage.³⁹

Regeneration touches our cognition and our affections. Following Calvin, Plantinga states that faith is something both “revealed to our minds” and “sealed upon our hearts” through the Holy Spirit so that we might see “God and his love, glory, beauty, and the like with much higher resolution”.⁴⁰ What is more, “when the sources of affection function properly” we will “love God above all and our neighbor as ourselves”.⁴¹ Let us call these two aspects cognitive and affective regeneration, respectively. As a result of this process the believer has “the right beliefs, but also the right affections”.⁴² Since regeneration in something that is supposed to transform human nature, it makes sense to assume such a process would affect also System 1 type of natural cognition. But are believers *actually* undergoing a process described by (3*)? If they were, we should be able to find empirical evidence for it. Specifically, there should be evidence that, in comparison with non-Christians, Christians have a more theologically accurate view of God and they are more loving toward others, including outsiders.

As I will argue, it is easier to find evidence against these claims than for them. One line of argument against cognitive regeneration could run as follows. From a Christian theological perspective, Christian believers obviously have more accurate view of God than, say, Hindus or Animists. Nevertheless, just as other religious people, Christians seem to entertain false intuitions of God. CSR scholars call this tendency *theological incorrectness*.⁴³ Theologians have traditionally emphasized God as totally other: God is unlike anything else we know of, wholly different from anything created. But theology is by nature analytical and reflective, the stuff of System 2. In everyday religion, we rely mostly on System 1. Therefore, believers unconsciously entertain highly anthropomorphic ideas of God at the same time as they confess to believe in the God of the theologians.

Prehistorical people typically viewed gods as less than omniscient and as restricted by time and space. People of many other religions still do. Christians also display some tendency to think of God this way. For instance, in one experiment, adult Christian participants, when made to respond quickly,

38 Here I follow Plantinga in taking an “Augustinian” perspective to the original state of things. However, accepting this formulation of stage (1*) is not necessary for what follows.

39 Plantinga, *Warranted Christian Belief*, 230.

40 *Ibid.*, 231, 239.

41 *Ibid.*, 253.

42 *Ibid.*, 239.

43 Justin L. Barrett, “Theological Correctness: Cognitive Constraint and the Study of Religion”, *Method & Theory in the Study of Religion* 11, no. 4 (1999); D. J. Slone, *Theological Incorrectness: Why Religious People Believe What They Shouldn't* (Oxford Univ. Press, 2004).

made many more theological mistakes in evaluating statements about God that were false theologically but true on intuition (e.g., “God has beliefs that are false”) compared with statements that were true or false both theologically and intuitively.⁴⁴ The study suggests that the cognitive tendency to view God as less than omniscient is very persistent, even though upon inquiry believers confess that God knows everything. Christians also say they believe God is omnipresent. In practice, however, they tend to think of God as restricted by time and space.⁴⁵ In some evangelical churches, for example, the Holy Spirit is invited to come and dwell in the midst of the congregation as if the Spirit wasn’t there already.⁴⁶ The argument could continue by pointing out that such natural proneness to anthropomorphism does not only lead us to view God as human-like, but also to view natural objects and places (trees, rocks, lakes) as having person-like agency.⁴⁷ Theologically speaking, anthropomorphism is not only the root of animism but also idolatry. If Christians were really undergoing a cognitive regeneration, would we not expect the Holy Spirit to weed out proneness toward anthropomorphism more extensively?

Such an argument, however, may not get very far. While cognitive regeneration does imply increasing awareness regarding certain divine attributes (Plantinga emphasizes insight into God’s *moral* attributes), this need not mean that the Holy Spirit would obliterate all false intuitions of divinity immediately. More importantly, there is necessarily nothing wrong about thinking of God in human-like terms. In fact, Plantinga’s own view of God is rather anthropomorphic! Plantinga is often seen as a representative of *theistic personalism* which views God as a person not totally unlike us. However, the empirical argument against cognitive regeneration might work if we took *classical theism* as the correct view of God. Given the truth of classical theism, what CSR would show is not that we are “born believers” but rather “born idolaters”.⁴⁸ The supernatural agents favored by our cognitive systems are human-like beings located in the natural world. They cause events and can be sometimes detected. The God of classical theism, however, is not located in time and place. God is pure act and the ultimate cause behind absolutely every event. God is not even a person. The classical God becomes even more counterintuitive if we consider attributes such as simplicity, immutability, and impassibility. For instance, divine immutability means nothing outside of God can have any effect on him, while almost every Christian thinks prayer can move God to do something he might not have done otherwise. Although classical theism has been the dominant view in the history of theology, few believers think of God in these terms. From this point of view, then, one could perhaps formulate a decent argument against cognitive regeneration — which could make the noetic effects of sin a less feasible explanation for the cognitive naturalness of idolatry.

IV. AFFECTIVE REGENERATION AND PREJUDICE

As we saw, Plantinga understands *faith* is something “revealed to our minds” and “sealed upon our hearts”. “This sealing”, he explains, “consists in the having of the right sorts of affections; in essence, it consists in loving God above all and *one’s neighbor as oneself*”.⁴⁹ Let us call the underlying process affective regeneration. Again, if such a process were really taking place, we would expect believers’ attitudes and behavior toward outsiders to be more inclusive and loving compared to those of non-Christians.

44 Michael Barlev, Spencer Mermelstein, and Tamsin C. German, “Core Intuitions About Persons Coexist and Interfere With Acquired Christian Beliefs About God”, *Cognitive Science* 41, no. S3 (2017).

45 Justin L. Barrett and Frank C. Keil, “Conceptualizing a Nonnatural Entity: Anthropomorphism in God Concepts”, *Cognitive Psychology* 31, no. 3 (1996). Barrett’s and Keil’s methodology has been criticized for a good reason. Nevertheless, I think their main point — omnipresence is counterintuitive — is valid.

46 I am not arguing that theologically incorrect intuitions — or what cognitive scientists also call *implicit beliefs* — always imply theologically false *explicit beliefs*. However, since explicit beliefs are informed and constrained by implicit beliefs, one expects cognitive regeneration to affect those as well.

47 Stewart Guthrie, *Faces in the Clouds: A New Theory of Religion* (Oxford Univ. Press, 1993).

48 Jonathan Jong, Christopher Kavanagh, and Aku Visala, “Born idolaters: The limits of the philosophical implications of the cognitive science of religion”, *Neue Zeitschrift für Systematische Theologie und Religionsphilosophie* 57, no. 2 (2015).

49 Plantinga, *Warranted Christian Belief*, 264. Italics mine.

Teehan's account of the tribalism bias comes close to what social psychologists call prejudice. Prejudice may be defined as "the holding of derogatory social attitudes or cognitive beliefs, the expression of negative affect, or the display of hostile or discriminatory behavior towards members of a group on account of their membership of that group".⁵⁰ Studies on the relationship between religion and prejudice seem to provide relevant evidence regarding affective regeneration. The evidence, however, is mixed. On the one hand, social psychologist C. Daniel Batson has argued for decades that the existing research clearly shows that "the more religious an individual is, the more intolerant he or she is likely to be".⁵¹ In the United States, where the majority of the studies on religion and prejudice has been conducted, white middle-class Christians have often been found to be prejudiced toward other ethnic groups (Jews and blacks), sexual minorities (gay men and lesbian women), and certain political groups (Communists).⁵² On the other hand, after a comprehensive overview of the relevant studies, other leading scholars conclude, that "religion is, in general, negatively associated with prejudice".⁵³

In trying to reconcile these statements, we need to differentiate between various religious orientations. For instance, if you take your religion seriously and consider it as an end in itself, you are likely to have an intrinsic orientation towards religion.⁵⁴ You agree with claims such as "I try hard to carry my religion over into all my other dealings in life". However, if you see religion as a means to other ends, such as achieving social status or security, you likely have an extrinsic orientation. A person scoring high on the intrinsic scale is likely to score low on the extrinsic scale (and vice versa). A third type of orientation is called quest religion. If this is your orientation, you are likely to be open to doubts and to changing your religious views, you accept the complexity of existential questions and resist clear-cut answers.⁵⁵ If you score low on the quest scale, chances are you will score high on the religious fundamentalism scale. Many versions of this scale include claims such as these:

- God has given humanity a complete, unending guide to happiness and salvation, which must be totally followed.
- The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God.
- It is more important to be a good person than to believe in God and the right religion.
- When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God, and the rest, who will not.
- Whenever science and sacred scripture conflict, *science* is probably right.⁵⁶

Now, not all types of religious people are necessarily true believers, that is, ones we would expect to be undergoing regeneration. While most intrinsics and fundamentalists should probably be counted as real believers, extrinsics are perhaps the most likely to be discarded as "nominal" Christians. How about questers? The answer probably depends on one's theological assumptions.

Studies typically bring out only correlations between religion and prejudice. That is, they don't show whether or not religion causes prejudice. This doesn't mean they are unimportant, however. If there was

50 Rupert Brown, *Prejudice: Its Social Psychology* (Blackwell, 1995), 8.

51 C. D. Batson, "Individual Religion, Tolerance, and Universal Compassion", in *Religion, Intolerance, and Conflict: A Scientific and Conceptual Investigation*, ed. Steven Clarke, Russell Powell and Julian Savulescu (Oxford Univ. Press, 2013), 89.

52 C. D. Batson, Patricia Schoenrade, and W. L. Ventis, *Religion and the Individual: A Social-Psychological Perspective* (Oxford Univ. Press, 1993), 297–302.

53 Ralph W. Hood, Peter C. Hill, and Bernard Spilka, *The Psychology of Religion, Fourth Edition: An Empirical Approach* (The Guilford Press, 2009), 434.

54 Gordon W. Allport, "The Religious Context of Prejudice", *Journal for the Scientific Study of Religion* 5, no. 3 (1966): 447–57.

55 C. D. Batson, "Religion as Prosocial: Agent or Double Agent?", *Journal for the Scientific Study of Religion* 15, no. 1 (1976): 29–45.

56 Bob Altemeyer, *The Authoritarians* (2006), 106. Religious fundamentalists typically strongly disagree with the third and fifth claim and strongly agree with the three others.

a strong relationship between prejudice and those religious orientations we view as characteristic of true believers, this would run counter Plantinga's case for affective regeneration. Extrinsic religion is positively correlated with several types of prejudice, while several studies suggest that quest orientation is *negatively* linked to prejudice.⁵⁷ That is, questers seem to be more tolerant of different kinds of people than most. However, even questers seem to be intolerant of religious fundamentalists.⁵⁸ The relationship between prejudice and intrinsic religion is more complex. In his meta-analysis, Whitley points out that two independent literature reviews that show that 70 percent of the studies on the relationship of intrinsic religiosity and prejudice found positive correlations, whereas only 22 percent found negative correlations (in the remaining eight percent, the results were not statistically significant).⁵⁹ Intrinsic are not prone to all kinds of prejudice, however. For example, Whitley notes that five out of seven religiosity measures (including the intrinsic orientation) had some relationship with positive attitudes toward other ethnicities.⁶⁰ Batson, however, rejects results indicating positive attitudes. He argues that since most churches condemn racism and the survey questions are rather transparent (almost as if asking "are you a racist bigot?"), there is a self-representational bias in play.⁶¹ That is, intrinsic are not as inclusive of other ethnicities as they claim to be.

The relationship between intrinsic religion and prejudice toward homosexuals is also not clear-cut. In Whitley's meta-analysis, five out of seven measures of religiosity (including the intrinsic orientation) were related to more negative attitudes toward lesbians and gay men. However, it has been objected that these studies make no difference between attitudes toward "the sin" and "the sinner", that is, homosexual behavior and homosexual persons. Batson and his team tested whether this distinction holds water.⁶² In their study, participating students were given a few pieces of information about a fellow student named Jerry or Jenny who was in need of financial help. Those scoring high on the intrinsic scale were less willing to help Jerry/Jenny if s/he was said to be gay. It did not make much difference whether Jerry/Jenny needed the money to attend a gay parade or to visit his/her grandparents. According to Batson, "there seemed to be rejection of the gay person, not just of helping in a way that would promote a gay lifestyle".⁶³ Nevertheless, a study by another team found evidence showing that "intrinsic appear to be relatively accepting of homosexual people, but not of homosexual behavior".⁶⁴

Religious fundamentalism, however, is clearly and consistently linked with many types of prejudice. In a survey of sixteen papers (with 25 samples) from 1990 to 2003, fundamentalism was found to be linked with negative attitudes toward gay/lesbian persons, women, communists, and religious outgroups, as well as with a personality trait called right-wing authoritarianism.⁶⁵ Results were similar in every study (39/39 findings in total). Only the relationship with racial/ethnic prejudice was less clear. Importantly, among self-professing Christians, religious fundamentalism is not a marginal phenomenon as an orientation defined by social psychology. Belief in the Bible as the inerrant word of God and in a cosmic battle between the forces of good and evil are common ingredients of the conservative Christian worldview. The majority of evangelicals, for instance, score very highly on the religious fundamentalism scale.⁶⁶ While most evan-

57 Batson, Schoenrade, and Ventis, *Religion and the Individual*, 304,329; Hood, Hill, and Spilka, *The Psychology of Religion, Fourth Edition: An Empirical Approach*, 412.

58 Jerry Goldfried and Maureen Miner, "Quest Religion and the Problem of Limited Compassion", *Journal for the Scientific Study of Religion* 41, no. 4 (2002).

59 Bernard E. Whitley, "Religiosity and Attitudes Toward Lesbians and Gay Men: A Meta-Analysis", *The International Journal for the Psychology of Religion* 19, no. 1 (2009).

60 The other four measures of religiosity were frequency of attendance at religious services, endorsement of Christian orthodoxy, self-ratings of religiosity, and quest orientation.

61 Batson, *Individual Religion, Tolerance, and Universal Compassion*, 93–94.

62 C. D. Batson et al., "And Who Is My Neighbor?" Intrinsic Religion as a Source of Universal Compassion", *Journal for the Scientific Study of Religion* 38, no. 4 (1999).

63 Batson, *Individual Religion, Tolerance, and Universal Compassion*, 101.

64 Aubyn S. Fulton, Richard L. Gorsuch, and Elizabeth A. Maynard, "Religious Orientation, Antihomosexual Sentiment, and Fundamentalism among Christians", *Journal for the Scientific Study of Religion* 38 (1999).

65 Bruce Hunsberger and Lynne M. Jackson, "Religion, Meaning, and Prejudice", *Journal of Social Issues* 61, no. 4 (2005).

66 Altemeyer, *The Authoritarians*, 110–11.

gelicals may not count as religious fundamentalists, many lean to that direction. This suggests that many Christians with traditional religious views are at least somewhat prejudiced toward several out-groups.

Atheists present yet another out-group for all religious groups. Prejudice against atheists seems to be global phenomenon.⁶⁷ Ara Norenzayan argues that it follows naturally from the way religion functions.⁶⁸ Historically, a shared belief in a “Big God” who monitors people’s moral behavior has enforced trust and cooperation among people in large groups. Large-scale cooperation is threatened by free-riders, that is, individuals who reap the benefits of cooperation but do not contribute themselves (if they can get away with it). Religion arose to solve this problem. Once everyone believed that they are being watched by a heavenly police who will punish cheating, and that others believe this as well, people were able to curb their selfish impulses and to trust each other. Atheists, who do not believe they are accountable to God for their actions, came to be viewed as potential free-riders. For this reason, religious people feel atheists cannot be trusted.

Norenzayan and colleagues tested this hypothesis by telling participants a story of a man who cheats and steals when he thinks he can get away with it (an archetypal free-rider).⁶⁹ They were then asked whether they thought it more probable that the man in question was a teacher or a teacher *and* something else (either a Christian, a Muslim, a rapist, or an atheist). Such conjunction fallacy tests are designed to reveal people’s tendency to view some type of behavior as representative of certain types of persons. Only a few participants thought that cheating and stealing was the kind of behavior one could expect from Christians or Muslims. However, many saw it as probable that the cheating or stealing man was *both* a teacher and an atheist. In fact, fewer thought that the man was both a teacher and a rapist. The teacher-and-atheist option was especially prevalent among participants who expressed a strong belief in God (most of whom were Christians).

The results in this section may seem somewhat inconclusive. It is hard to say with certainty whether Christians *in general* are more or less prejudiced toward members of out-groups. It should be also noted that a weak positive link between religion and helping behavior exists, which might indicate something about how Christians treat others.⁷⁰ However, we have seen good evidence that many traditional Christians display prejudice toward at least homosexuals and atheists. This may be enough to cause worries regarding the reality of affective regeneration according to which Christians should be more loving than others. According to Plantinga, the affective consequences of sin include hatred and distaste “for some group of human beings”. It is hard to deny there are lots of believers who display such hatred and distaste for some groups more than the most nonbelievers.

V. A FEW OBJECTIONS

Finally, let us consider just a few possible objections to the claim that studies on religion and prejudice challenge the truth of affective generation. First, while prejudice certainly might not be very virtuous, is it a sin? Is it something we should expect Holy Spirit to weed out from the hearts of believers? It does seem that prejudice runs counter to many teachings of the New Testament. Jesus stressed loving those who are difficult to love, even our enemies (Matt. 5:44). The parable of the Good Samaritan indicates that neighborly love is supremely displayed in helping and serving an out-group member (Luke 10:25–37). Paul likewise calls Christians to bless their enemies (1. Cor. 4:12) and to do good to them (Rom. 12:20–21). When we think of the many ugly forms of prejudice Christians have historically displayed towards outsiders, it does seem that religious prejudice is often deeply sinful.

67 Will M. Gervais et al., “Global Evidence of Extreme Intuitive Moral Prejudice Against Atheists”, *Nature Human Behaviour* 1, no. 8 (2017).

68 Norenzayan, *Big Gods: How Religion Transformed Cooperation and Conflict*.

69 Will M. Gervais, Azim F. Shariff, and Ara Norenzayan, “Do you Believe in Atheists? Distrust is Central to Anti-Atheist Prejudice”, *Journal of Personality and Social Psychology* 101, no. 6 (2011).

70 Hood, Hill, and Spilka, *The Psychology of Religion, Fourth Edition: An Empirical Approach*, 433–34.

Second, although Plantinga writes as if cognitive and affective regeneration is something happening here and now, most churches teach that no Christian will be perfect in this life. Nevertheless, they also teach that becoming a believer involves a transformation in one's character and behavior. The New Testament indicates that while believers do struggle with sin (1. John 1:8, 2:1), the Holy Spirit enables them to overcome habitual sin (Rom. 8:1–17; 1. John 3:6; 1. Pet. 4:4.). C. S. Lewis was certainly right in pointing out that we cannot expect every single believer to be more virtuous than every non-believer, since some converts may begin their moral growth from the bottom.⁷¹ However, if affective regeneration were really taking place, should we not expect believers to be little better at loving their neighbors?

Third, a variety of objections could be formulated on the basis of the cultural context of the United States where most of the studies reviewed above have been conducted. Might American Christians be less prejudiced toward outsiders if it wasn't for the culture wars, the two-party system, the theologically dubious televangelists, and so on? Perhaps so. However, it would seem strange if the outcomes of regeneration were so dependent on the cultural context. Besides, similar relationships between religion and prejudice have been found in Europe. For instance, religious fundamentalism seems to have a similar relationship to prejudice in Western Europe as it has in America.⁷²

VI. CONCLUSION

Clark and Barrett have suggested that God may have guided evolution so as to give rise to a god-faculty akin to (but not as specified as) *sensus divinitatis*. From a theological viewpoint, it makes sense to think God has done this in order to draw people to himself. The prevalence of idolatry and moral evil in the history of humanity challenge this claim. While a Plantingian response referring to the cognitive and affective consequences of sin offer a theological explanation of the existence of such biases, it is itself hard to reconcile with evolutionary science. Importantly, such a response makes sense only in light of cognitive and affective regeneration. Studies on theological incorrectness and prejudice present reasons to doubt whether Christian believers are actually undergoing such a process. Even if these studies do not serve as conclusive evidence against regeneration, they contribute to making the sin response more implausible.

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BIBLIOGRAPHY

Allport, Gordon W. 1966. "The Religious Context of Prejudice", *Journal for the Scientific Study of Religion* 5, no. 3: 447–57. doi:10.2307/1384172.

Altemeyer, Bob. 2006. *The Authoritarians*. Unpublished e-book. www.theauthoritarians.org .

Banerjee, Konika, and Paul Bloom. 2014. "Why Did This Happen to Me? Religious Believers' and Non-Believers' Teleological Reasoning about Life Events", *Cognition* 133, no. 1: 277–303. doi:10.1016/j.cognition.2014.06.017.

Barlev, Michael, Spencer Mermelstein, and Tamsin C. German. 2017. "Core Intuitions About Persons Coexist and Interfere With Acquired Christian Beliefs About God", *Cognitive Science* 41, no. S3: 425–54. doi:10.1111/cogs.12435.

⁷¹ C. S. Lewis, *Mere Christianity* (HarperCollins, 2016), 210.

⁷² Ruud Koopmans, "Religious Fundamentalism and Hostility against Out-groups: A Comparison of Muslims and Christians in Western Europe", *Journal of Ethnic and Migration Studies* 41, no. 1 (2015).

- Barrett, Justin L. 1999. "Theological Correctness: Cognitive Constraint and the Study of Religion", *Method & Theory in the Study of Religion* 11, no. 4: 325–39. doi:10.1163/157006899X00078.
- . 2009. "Cognitive Science, Religion, and Theology". In *The Believing Primate: Scientific, Philosophical, and Theological Reflections on the Origin of Religion*, edited by Jeffrey Schloss and Michael Murray, 76–99. New York: Oxford Univ. Press.
- . 2012. *Born Believers: The Science of Children's Religious Belief*. New York: Free Press.
- Barrett, Justin L., and Frank C. Keil. 1996. "Conceptualizing a Nonnatural Entity: Anthropomorphism in God Concepts", *Cognitive Psychology* 31, no. 3: 219–47. doi:10.1006/cogp.1996.0017.
- Barrett, Justin L., and Aku Visala. 2018. "In What Sense Might Religion Be Natural?". In *The Naturalness of Belief: New Essays on Theism's Rationality*, edited by Paul Copan and Charles Taliaferro, 67–84. Lanham: Lexington Books.
- Batson, C. Daniel. 1976. "Religion as Prosocial: Agent or Double Agent?", *Journal for the Scientific Study of Religion* 15, no. 1: 29–45. doi:10.2307/1384312.
- . 2013. "Individual Religion, Tolerance, and Universal Compassion". In *Religion, Intolerance, and Conflict: A Scientific and Conceptual Investigation*, edited by Steven Clarke, Russell Powell, and Julian Savulescu, 88–116. New York: Oxford Univ. Press.
- Batson, C. Daniel, Randy B. Floyd, Julie M. Meyer, and Alana L. Winner. 1999. "And Who Is My Neighbor? Intrinsic Religion as a Source of Universal Compassion", *Journal for the Scientific Study of Religion* 38, no. 4: 445–57. doi:10.2307/1387605.
- Batson, C. Daniel, Patricia Schoenrade, and W. Larry Ventis. 1993. *Religion and the Individual: A Social-Psychological Perspective*. New York: Oxford Univ. Press.
- Boyer, Pascal. 2001. *Religion Explained: The Evolutionary Origins of Religious Thought*. New York: Basic Books.
- Brown, Rupert. 1995. *Prejudice: Its Social Psychology*. Cambridge: Blackwell.
- Catholic Church, ed. 1997. *Catechism of the Catholic Church: Revised in Accordance with the Official Latin Text Promulgated by Pope John Paul II*. 2nd ed. Vatican City : Washington, DC: Libreria Editrice Vaticana ; United States Catholic Conference.
- Clark, Kelly James. 2019. *God and the Brain: The Rationality of Belief*. Grand Rapids: Eerdmans.
- Clark, Kelly James, and Justin L. Barrett. 2010. "Reformed Epistemology and the Cognitive Science of Religion", *Faith and Philosophy* 27, no. 2: 174–89. doi:10.5840/faithphil201027216.
- . 2011. "Reidian Religious Epistemology and the Cognitive Science of Religion", *Journal of the American Academy of Religion* 79, no. 3: 639–75. doi:10.1093/jaarel/lfr008.
- De Cruz, Helen, and Johan De Smedt. 2013. "Reformed and Evolutionary Epistemology and the Noetic Effects of Sin", *International Journal for Philosophy of Religion* 74, no. 1: 49–66. doi:10.1007/s11153-012-9368-z.
- Edgell, Penny, Joseph Gerteis, and Douglas Hartmann. 2006. "Atheists As 'Other': Moral Boundaries and Cultural Membership in American Society", *American Sociological Review* 71, no. 2: 211–34. doi:10.1177/000312240607100203.
- Fulton, Aubyn S., Richard L. Gorsuch, and Elizabeth A. Maynard. 1999. "Religious Orientation, Antihomosexual Sentiment, and Fundamentalism among Christians", *Journal for the Scientific Study of Religion* 38: 14–22. doi:10.2307/1387580.
- Gervais, Will M., Azim F. Shariff, and Ara Norenzayan. 2011. "Do You Believe in Atheists? Distrust Is Central to Anti-Atheist Prejudice", *Journal of Personality and Social Psychology* 101, no. 6: 1189–1206. doi:10.1037/a0025882.
- Gervais, Will M., Dimitris Xygalatas, Ryan T. McKay, Michiel van Elk, Emma E. Buchtel, Mark Aveyard, Sarah R. Schiavone, et al. 2017. "Global Evidence of Extreme Intuitive Moral Prejudice against Atheists." *Nature Human Behaviour* 1, no. 8: 1–6. doi:10.1038/s41562-017-0151.
- Goldfried, Jerry, and Maureen Miner. 2002. "Quest Religion and the Problem of Limited Compassion." *Journal for the Scientific Study of Religion* 41, no. 4: 685–95. doi:10.1111/1468-5906.00154.
- Guthrie, Stewart. 1993. *Faces in the Clouds: A New Theory of Religion*. New York: Oxford Univ. Press.

- Harris, Lasana T., and Susan T. Fiske. 2006. "Dehumanizing the Lowest of the Low: Neuroimaging Responses to Extreme Out-Groups", *Psychological Science* 17, no. 10: 847–53. doi:10.1111/j.1467-9280.2006.01793.x.
- Helm, Paul. 1998. "John Calvin, the 'Sensus Divinitatis', and the Noetic Effects of Sin", *International Journal for Philosophy of Religion* 43, no. 2: 87–107.
- Hood, Ralph W., Peter C. Hill, and Bernard Spilka. 2009. *The Psychology of Religion, Fourth Edition: An Empirical Approach*. Fourth edition. New York: The Guilford Press.
- Hunsberger, Bruce, and Lynne M. Jackson. 2005. "Religion, Meaning, and Prejudice", *Journal of Social Issues* 61, no. 4: 807–26. doi:10.1111/j.1540-4560.2005.00433.x.
- Jong, Jonathan, Christopher Kavanagh, and Aku Visala. 2015. "Born idolaters: The Limits of the Philosophical Implications of the Cognitive Science of Religion", *Neue Zeitschrift für Systematische Theologie und Religionsphilosophie* 57, no. 2: 244–66. doi:10.1515/nzsth-2015-0012.
- Kahneman, Daniel. 2011. *Thinking, Fast and Slow*. New York: Penguin.
- Kelemen, Deborah, and Evelyn Rossett. 2009. "The Human Function Compunction: Teleological Explanation in Adults." *Cognition* 111, no. 1: 138–43. doi:10.1016/j.cognition.2009.01.001.
- Koopmans, Ruud. 2015. "Religious Fundamentalism and Hostility against Out-Groups: A Comparison of Muslims and Christians in Western Europe", *Journal of Ethnic and Migration Studies* 41, no. 1: 33–57. doi:10.1080/1369183X.2014.935307.
- Kvandal, Halvor. 2020. "The God-Faculty Dilemma: Challenges for Reformed Epistemology in the Light of Cognitive Science", *International Journal of Philosophy and Theology* 81, no. 4: 404–22. doi:10.1080/21692327.2020.1753095.
- McCall, Grant S., and Nancy Shields. 2008. "Examining the Evidence from Small-Scale Societies and Early Prehistory and Implications for Modern Theories of Aggression and Violence", *Aggression and Violent Behavior* 13, no. 1: 1–9. doi:10.1016/j.avb.2007.04.001.
- Norenzayan, Ara. 2013. *Big Gods: How Religion Transformed Cooperation and Conflict*. Princeton: Princeton Univ. Press. doi:10.2307/j.ctt32bbp0.
- Pedersen, Daniel. 2016. "'Irenaean' or 'Schleiermacherian'?: An Evolutionarily Plausible Account of the Origins of Sin", *Theology and Science* 14, no. 2: 190–201. doi:10.1080/14746700.2016.1156330.
- Peels, Rik, Hans van Eyghen, and Gijsbert van den Brink. 2018. "Cognitive Science of Religion and the Cognitive Consequences of Sin", In *New Developments in the Cognitive Science of Religion: The Rationality of Religious Belief*, edited by Hans van Eyghen, Rik Peels, and Gijsbert van den Brink, 199–214. Cham: Springer. doi:10.1007/978-3-319-90239-5_11.
- Plantinga, Alvin. 2000. *Warranted Christian Belief*. New York: Oxford Univ. Press.
- Slone, D. Jason. 2004. *Theological Incorrectness: Why Religious People Believe What They Shouldn't*. New York: Oxford Univ. Press.
- Teehan, John. 2016. "Cognitive Science, Evil, and God", In *Advances in Religion, Cognitive Science, and Experimental Philosophy*, edited by Helen De Cruz and Ryan Nichols, 39–60. London: Bloomsbury Academic.
- Timpe, Kevin. 2014. *Free Will in Philosophical Theology*. New York: Bloomsbury Academic.
- Van Bavel, Jay J., Dominic J. Packer, and William A. Cunningham. 2008. "The Neural Substrates of In-Group Bias: A Functional Magnetic Resonance Imaging Investigation", *Psychological Science* 19, no. 11: 1131–39. doi:10.1111/j.1467-9280.2008.02214.x.
- Whitley, Bernard E. 2009. "Religiosity and Attitudes Toward Lesbians and Gay Men: A Meta-Analysis", *The International Journal for the Psychology of Religion* 19, no. 1: 21–38. doi:10.1080/10508610802471104.
- Xu, Xiaojing, Xiangyu Zuo, Xiaoying Wang, and Shihui Han. 2009. "Do You Feel My Pain? Racial Group Membership Modulates Empathic Neural Responses", *Journal of Neuroscience* 29, no. 26: 8525–29. doi:10.1523/JNEUROSCI.2418-09.2009.