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DOES RELIGION ORIGINATE IN THE BRAIN?

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SYNOPSIS

Much “cognitive science of religion” (CSR) research asserts that religious belief can be “biologized” as well as psychoanalyzed. Like secularists in previous centuries, contemporary CSR researchers claim that humans have biological hard-wiring and certain psychological tendencies that encourage the creation of religion, or the “God idea.” If such “scientific” authors are correct that belief in God is nothing more than genetic hard-wiring reenforced by social pressure and traditions, and that humans are merely physical beings, the implications are immense. Besides the existence of God, the existence of the soul is also at stake, and the suggestion that our choices, moral behavior, and ability to reason and seek truth are physically determined is hard to escape. Christians can respond to these ideas in many ways. They can acknowledge, for example, that certain soulful capacities can be affected by physical conditions, but that such a correlation does not warrant the soul’s reduction to a physical entity. They also can affirm that the origins of belief in God should not undermine the rationality of belief in God, since His existence is independent of those origins. They, finally, can assert that it makes sense that humans would be hard-wired with God-ward inclinations, since God has placed eternity in our hearts (Eccl. 3:11); such processes merely may indicate that our minds and brains are functioning as God intended.

Evolutionary biologist Richard Dawkins suggests that our “extraordinary predisposition” to “insist on believing in God” is that we, like computers, tend to do what we’re told. Young minds are susceptible to “infection” and mental “viruses” especially when they latch on to the bad or worthless religious ideas of charismatic preachers and other adults.¹ Anthropologist Pascal Boyer believes that the latest “scientific” developments reveal that our “central metaphysical urge”—an “irredeemable human propensity toward superstition, myth and faith, or a special emotion that only religion provides”² stands at the root of all religion. Author Matthew Alper considers humans to be religious animals whose brains are hard-wired for “God,” though no God exists, and maintains that the “spiritual” is really the “scientific.”³

Sound vaguely familiar? It’s Feuerbach, Marx, and Freud revisited. They psychologized religion as abnormal and irrational. Philosopher Ludwig Feuerbach believed that *theology* (the study of God) is really *anthropology* (the study of humankind), and that *humans* make God in *their* image, not vice versa. Impressed by Feuerbach, Karl Marx called religion “the opium [or opiate] of the people,” the “sigh of the oppressed creature.” Sigmund Freud believed that religious ideas arise in the face of daunting natural forces; that God is an illusory hope—a pathetic, infantile notion.

“LOCATING GOD” IN THE BRAIN

Within the past fifteen years or so, such arguments have gotten a second wind⁴ from evolutionary psychologists who claim that the “God idea” originates in the human brain, and believe that humans are somehow evolutionarily “hard-wired” to believe in God. Much “cognitive science of religion” (CSR)

research asserts that religious belief not only can be psychoanalyzed, but “biologized.” Religion professor Todd Tremblin, for example, insists on a natural connection between gods and minds, since supernatural beings are mental conceptions that human brains acquire, represent, and transmit. To understand the mind’s operations is to understand the religious mind’s operations. As the natural products of human evolutionary psychology, “gods” can be explained scientifically as successful ideas.⁵

What is the scientific evidence for the human brain’s hard-wiring for God? How does this square with the traditional Christian understanding of the human soul and personal identity? How should the Christian respond to the “findings” of CSR? I will explore these questions below.

The Development of Religious Belief

According to CSR, there are three basic aspects to the development of religious belief. These include genetic wiring, evolutionary psychology, and memetics or ideological transmission.

Genetic Wiring. In a hospital laboratory, CSR researchers Andrew Newberg and Eugene D’Aquili received signals from Robert, a Tibetan Buddhist, when his “meditative state” approached a “transcendent peak.” They monitored the distinctive brain activity of eight other Buddhist meditators and several praying Franciscan nuns, concluding that “mystical experience is biologically, observably, and scientifically real.”⁶ With science writer Vince Rause, they noted that widespread religious experiences of all kinds throughout the ages can be “attributed to the brain’s activity,” and that “neurotheology” suggests a “biological origin for specific religious beliefs.”⁷

Religious belief can help alleviate stress and depression, give a sense of meaning and purpose, and create a hope for life after death—all of which are good and healthy. Humans don’t deliberately *invent* God, but they “discover” God by means of how their brains are wired, which these authors call “mystical encounters.”⁸

Newberg and colleague Mark Robert Waldman restate our “biological need” for meaning, spirituality, and truth in a book based on close observation of religious adherents (from Pentecostals to Buddhists).⁹ They note that the more one focuses on a certain belief, the more real it ultimately may feel. They then assert that this sense of “realness” is “based on the stimulation of specific neural circuits in the brain,” adding that perhaps someday researchers will be able to connect the everyday reality “created by the brain” and the “fundamental reality.”¹⁰

What about an actual God *outside* the mind? The brain may be wired for self-transcendence, but Newberg and D’Aquili still leave room for a vague “higher God”—however we choose to define the “concept.” Religions are “siblings,” they believe, but no one of them is exclusively true (“all faiths become true”).¹¹ Researcher Rhawn Joseph likewise claims that humans are naturally “wired for god” and possess a “sixth sense” or the capacity to receive a revelation from “god.” Joseph sees the hyperactivated limbic system as key to spiritual experience—a “transmitter to god” that opens up paths to “alternate realities” that typically are hidden from view.¹² By combining these factors with one’s own personal experience, the hyperactivated brain can enhance and deepen one’s religious experience. Joseph, while appearing close to reducing God to brain function, genetics, and environmental factors, doesn’t close the door on a spiritual realm itself; however, he strongly opposes a biblical God who creates out of nothing, demeaning Big Bang cosmology as “mythology.” He refers vaguely to a “Guiding Spirit” or to “gods, spirits, and demons.” He believes that the brain is capable, under certain conditions, to perceive “other” or “alternate realities” and to generate “myriad spiritual states.”¹³

Other CSR researchers express indifference to, or even disapproval of, the idea of God.¹⁴ Boyer, who thinks there is no “special neural network that handles God-related thoughts,” believes that the still-sketchy results of neuropsychological research may yet connect religious experience to cortical areas that are related to intuitive psychology (thinking about other people’s thoughts) and “that create emotional responses to people’s presence.”¹⁵ That, in his view, is the essence of “religion.”

Evolutionary Psychology: Creating Supernatural Agents? Given the biological hard-wiring of our human brains, we have certain psychological tendencies that encourage the creation of the “God idea.” Philosopher Daniel Dennett claims that just as he can “reverse engineer” (i.e., track the naturalistic, step-

by-step development) unfolding life forms or morality, so, too, can he with religious belief. We have a psychological tendency to create religion—from sensing agency in many natural elements like trees and rivers (simple animism) to worshiping one supernatural agent (more sophisticated monotheism).¹⁶

Boyer likewise thinks that humans tend to anthropomorphize their experiences—that is, to project “humanlike and personlike features onto nonhuman and nonpersonlike aspects of the environment”; thus, he believes, they often concoct nonexistent agents—demons, ghosts, God, angels. According to evolutionary understanding (think “predator and prey”), humans have the capacity to detect agents around them, even if those agents aren’t there. Humans project agency if they hear a strange noise in the forest, for example, even though it may be due only to tree branches scraping against each other in the wind.¹⁷ Similarly, humans easily jump to religious conclusions—including beliefs in souls, spirits, and supernatural agents.¹⁸ Of course, such claims are unfalsifiable: there are no conditions that would show that these projected agents don’t exist. The tendency, then, Boyer believes, is for people to store these religious conclusions in their memory and then pass them on to the next generation so that they become embedded in human minds: “Information about gods and spirits mainly comes from other people.”¹⁹

Memetics: Passing on Religion? Not only are humans hard-wired and thus psychologically prepared to believe in God, they pass on such religious ideas to others in the form of religions and rituals. Dennett writes that although there is no “God gene”²⁰ that is responsible for human inclination toward spirituality, the idea of God, like the idea of chocolate, triggers a certain reaction in the human brain. The idea that religion is good for people is a very Darwinistic concept. Like language-learning or good manners, these religious ideas can be spread *nongenetically* to the next generation. They are the result of overactive dispositions and sensitivities within many human beings. These ideas or convictions are known as “memes” (“cultural symbionts”).²¹ So there is an interplay between *genetic* and *memetic* evolution. Dennett claims that he himself is moved by various religious rituals, music, and art, but is “utterly unpersuaded by the doctrines.”²² Religious ideas also can have a toxic effect, as with David Koresh’s community.

Boyer notes the parallel between the process of religious adoption and that of language-learning. People believe what they “shouldn’t” because they have active minds that readily construct novel ideas—including religious ones. These eventually become transmitted from one generation to the next—a process that includes holy writings, places of worship, and religious educational institutions.²³ People do not start from scratch with religion; they adopt what they find in their environment and then transmit it like they do language.²⁴

Furthermore, Boyer states that, statistically, human minds will more likely pass on what is more counterintuitive and apparently supernatural (like a dog on the other side of a cement block fence that passes *through* it) than what is commonsensical and uninteresting (like a dog on the other side of the fence that simply barks—and stays there). Likewise, God, according to Boyer, is just the kind of counterintuitive entity that will be believed in and promoted from one generation to another, and children (who often have imaginary friends) are the most likely to latch on to an invisible, all-powerful, all-knowing God “idea.”

Reinforcing transmitted religious ideas involves a *social* component—the desirable cultural feature of social stability. Social stability is created through mutually beneficial coalitions and networks. Social control or dominance is maintained through certain social hierarchies involving shamans, priests, and pastors—a system that punishes cheaters and excommunicates the uncooperative.²⁵

The backdrop to the transmission of religious ideas, then, according to thinkers such as Boyer, is noncultural (i.e., the brain’s configuration). Despite the biological coupled with the cultural—the genetic with the epigenetic—there is still no guarantee of a universal commonality of certain religious ideas, such as interest in an eternal Creator or in the world’s origin.²⁶ (Many suggest that *moral code* is the common element among all religions.)²⁷ Boyer seems quite disdainful of religious believers, stating that they don’t think critically, don’t check out evidence, and believe what can’t be falsified.²⁸ He adds that Christians seem particularly gullible, and can’t think correctly. (Boyer has the “irrational” doctrine of the Trinity in mind, which Boyer himself isn’t thinking correctly about: he presents a doctrine that no orthodox Christian believes—“that three persons are one person”²⁹—as opposed to three necessarily inseparable persons who share one nature and substance.)

What, then, of the differences between the awe-inspiring experiences of traditional religionists and those of secularists? According to zoologist Robert Hinde, there aren't any. What differs is the *interpretation* placed upon these experiences.³⁰ The Christian may be inspired by majestic mountains or the starry heavens, interpreting these as a reflection of God's glory. The secularist likewise may be awed by nature, but he does not view these as the creation of a supernatural Being.³¹

VIEWING THE SOUL AS EMBODIED, NONEXISTENT, OR DISTINCT

Linguist George Lakoff and philosopher Mark Johnson boldly proclaim that a major discovery of cognitive science is that the mechanism for spirituality is neurally driven (bodily) and that mind (or soul) is "inherently embodied," being incapable of independent existence.³² Philosopher Owen Flanagan claims that the "desouling" of personhood is "the primary operation of the scientific image [or enterprise]."³³

Naturalism assumes that humans are physical beings in a closed physical system. One such perspective (*eliminative* or *reductive* materialism) eliminates the mind (or soul) altogether. Another soul-denying view (*property* dualism) claims that the human body is a substance with two key characteristics—the *physical* and the *mental*. Self-consciousness and other mental capacities *emerged from* ("supervened upon") a sufficiently complex brain and nervous system in the evolutionary process. The mental, though not reducible to the purely physical, can exist *only* because of the physical; once the body dies, the mind ("soul") is extinguished as well. (Incidentally, more and more Christian philosophers and theologians—with theological modifications—are adopting this materialistic understanding of human personhood.)³⁴

Orthodox Christianity traditionally has held to another view (*substance* dualism). In this view, humans are comprised of *both* physical body and nonphysical soul, and the soul gives humans their continued identity even though the body may perish (e.g., during the intermediate state). Body and soul are distinct but deeply interactive, organically integrated substances—physical and nonphysical. My soul (my *self* or *I*)—not my body—gives me my personal identity. I *am not* my body; rather, I *have* a body. I *am* my soul, which organically belongs to a body suited to it.³⁵ Scripture strongly supports such a view: Jesus tells the dying criminal, whose body would soon perish, "*Today you will be with me in paradise*" (Luke 23:43); to be "absent from the body" is to be "present with the Lord"—despite a temporary less-than-ideal state of "nakedness" away from the body (2 Cor. 5:8); people can kill the body, not the soul—though God can destroy both (Matt. 10:28; Luke 12:4–5); Paul's third-heaven experience may have been "in the body" or "apart from" it (2 Cor. 12:2–3; cp. Rev. 6:9–10). N. T. Wright's survey of the relevant literature supports substance dualism and the intermediate state as a thoroughly biblical perspective of "life after life after death"³⁶ (i.e., the believer's *death* on earth is followed by disembodied *life* or soul in the intermediate state, which later becomes an embodied *life*—with a physical resurrection body—in the new heavens and earth). For Jew and Greek alike, death meant the soul's separation from the body.³⁷ Note that "the immortality of the soul" comes from Greek philosophy, not biblical theology. Even though humans can't kill the soul (Mt. 10:28), the soul is not *inherently* immortal; its existence is graciously sustained by God until it receives a resurrection body suited to it. As 1 Corinthians 15 indicates, "immortality" refers to a renewed *physical* body, resurrected by the Spirit ("spiritual")—not an everlasting soul.

The Implications of Eliminating the Soul

If we tie human personhood to the physical (which CSR typically does), and concede that belief in God is nothing more than genetic hard-wiring reinforced by social pressure and traditions, the implications are immense. Besides the existence of God, the existence of the soul is also at stake, and the suggestion that our choices, behavior, reasoning, and beliefs are physically determined is hard to escape. The not-insignificant result is undermining of robust freedom of the will, moral responsibility, and human ability to reason and seek truth. The physicalist's case against the soul turns out to be fraught with a number of problems.³⁸ I will address a few of these concerns here.

Consciousness. More than a few naturalists admit that it is hard to see how consciousness—human or animal—could emerge from nonconscious matter. Physics textbooks describe "matter" as having spatial

extension, shape, size, density, and so forth—but not as “being conscious.” Mind and matter—though integrated—have utterly distinct properties. *Thoughts* about weight, color, shape, and size are *without* weight, color, shape, and size.

Naturalist Colin McGinn confesses that we cannot “explain how ever-expanding lumps of matter might have developed an inner conscious life.”³⁹ Philosopher of mind Ned Block admits that researchers are “stumped” about this and haven’t a clue where to begin explaining it.⁴⁰ Philosopher Jerry Fodor acknowledges not having “the slightest idea how anything material could be conscious.”⁴¹ Theists, however, who believe in a supremely self-aware Being who makes finite (self-) conscious creatures, have a context for consciousness.⁴² If consciousness exists, it points us in the direction of the soul’s existence as well.

Truth and Reason. Beliefs—not matter—can be true or false. Matter just *is*.⁴³ To say one piece of matter is true of another, C. S. Lewis observed, is just “nonsense.”⁴⁴ Matter cannot create rationality; yet Lakoff and Johnson state that reason is evolutionary, not unique to humans, and that humans are merely on an evolutionary continuum with animals, not distinct from them.⁴⁵ Darwin, however, doubted whether we could trust our beliefs any more than we could trust those of a monkey.⁴⁶ Why should we *trust* our beliefs as reliable if survival is what drives us? We may hold lots of survival-enhancing beliefs (e.g., “humans have value and moral duties”), but these may be completely *false*.

Truth is incidental to survival. Why should we trust that brain matter bumping into more brain matter should produce reliable beliefs? Geneticist Francis Crick argued that our beliefs and sense of identity are “the behavior of a vast assembly of nerve cells and their associated molecules,”⁴⁷ but what about *his* beliefs? Material processes, over which Crick had no control, produced his beliefs as well. If Crick’s beliefs were right, they would have been right just by accident. Unless a reasoning soul exists that isn’t tied to matter, why should we trust our reasoning abilities? Our confidence in our belief-forming faculties and in our pursuit of truth, however, better reflects that we are souls, made in a rational God’s image, than that we are mere matter, incapable of reasoning reliably.

Free Will and Moral Responsibility. We have the intuition that we are self-movers with genuine freedom, that the buck stops with the agent, and that our choices make a real difference. Free will sets humans apart from animals. Law courts don’t accept my-genes-made-me-do-it arguments, whereas nonfree animals can’t rise above genetics and environment. Robust libertarian freedom would support substance dualism and undermine materialism (in which matter determines my beliefs and actions). Little wonder naturalists tend to reject free will, given their commitment to a materialistic worldview.⁴⁸

On the other hand, most theists would argue that our choices may be *influenced* by our environment, our bodily states, and even our character, but these don’t *determine* our choices. Such conditions *incline*; they don’t *necessitate*.

Miscellaneous Considerations. First, although naturalists claim that two unlike things (such as immaterial souls and matter) can’t interact, many of them acknowledge that it’s difficult to account for the mental in a purely physical world. Consider philosopher Jaegwon Kim: the mystery of consciousness “consists in our seeming inability to understand the phenomenon of consciousness as part of a world that is essentially physical, and, what is worse, not knowing just what it is that we need to know if we are to achieve such an understanding.”⁴⁹ Second, theists have a ready example of such an interaction: God—a substantial *soul*—created and sustains a *physical* universe. Third, since the entire body’s cells are completely renewed every seven years or so, personal identity must be preserved by something immaterial—namely, the soul’s existence. Fourth, some naturalists claim that persons need *physical bodies* to be just, kind, loving, or forgiving. People can fool others, however, by outwardly (bodily) acting *as though* they are showing love or forgiveness, yet they may harbor bitterness within—an act that strongly suggests that a soul lurks beneath the mask. Fifth, most people across the ages and civilizations have assumed substance dualism, implying that it’s not counterintuitive. Sixth, we know disembodiment is *logically* possible; we constantly imagine ourselves in another’s shoes (body) without changing identity. Such easy thought experiments should caution us against ruling out body-soul dualism.

EVALUATING CSR

I will try to bring together some of these thoughts and offer an overall assessment of CSR from a Christian perspective.

Essential Observations

Studying human thinking about religious belief is a fascinating and worthy undertaking. Christians should never fear Socrates' advice to follow the truth wherever it leads. It is possible to research the spectrum of religious commitments to detect patterns and similarities without being reductionistic or antisupernaturalistic (e.g., eliminating the existence of the soul or God or morality or human freedom). I will focus on the main overall observations of a Christian response to CSR in the following discussion.

Passionate, "Religious" Commitments among Secularists. Many CSR researchers view "religious" believers as misguided, biased, overzealous, or even harmful, and we can agree to some extent (when considering, e.g., Jim Jones or Bhagwan Shree Rajneesh). The sword, however, cuts both ways. Passionate, "religious" leanings and commitments to rather nonscientific presuppositions can be found in the heart of the secular scientific community as well as the religious one. All humans—secularist or "religious"—hold to a worldview or "form of life" of deeply held metaphysical commitments, ethical beliefs, and convictions about human nature and well-being. These commitments are centrally important, comprehensive, and extremely embedded.⁵⁰ Secularists can invent their own God-substitutes—Friedrich Nietzsche's *Übermensch* ("superman"), Carl Sagan's Cosmos, or biologist Richard Lewontin's "Science"—and hold nonscientific philosophical commitments to those substitutes. For example, Lewontin claims "Science" is "the only begetter of truth," yet he's honest about his *commitment* to "absolute" materialism—only matter is real, "no matter how counter-intuitive, no matter how mystifying to the uninitiated." His concern? "We cannot allow a Divine Foot in the door."⁵¹ Such metaphysical assumptions aren't the result of scientific research, and they often drive scientists to exclude God, freedom, and the soul.

Correlation of Soul and Body vs. Reduction of Soul to Body. If one could surgically remove or alter the brain's spiritual part, Matthew Alper suggests that one might lose the ability to have spiritual experiences, to feel forgiven, or to sense a transcendent "presence,"⁵² and that psychopharmaceuticals could "change" desires and behaviors by biochemically manipulating human emotions in an attempt to create a sense of "well-being." Consider also the victims of stroke or Alzheimer's losing key "soulful" functions. Doesn't the correlation between medications and altered inner states suggest that we're purely physical?

Given the deep connection of body and soul, we can affirm that certain soulful capacities can be blocked or affected through physical conditions, whether medical or bodily. Such a *correlation*, however, does not entail the soul's *reduction* to a physical body. Also, consider the reverse correlation from soul to body: what goes on in my *soul* (e.g., worry) can just as easily affect my *body* (e.g., stomach ulcers).

Distinction of the Biology of Belief from the Rationality of Belief. To say God doesn't exist because people believe for inferior reasons or motivations is to commit the *genetic fallacy*—to say that a view is true/false based on its origin. God's existence, however, is logically independent of how people come to believe in Him.

Consider the strong reasons for God's existence *distinct* from human hard-wiring and psychology. The existence of valuable, morally responsible, self-aware, reasoning, living human beings who inhabit a finely tuned universe that came to exist a finite time ago is not plausibly explained *naturalistically*—namely, as the result of disparate valueless, mindless, lifeless physical processes in a universe that came into existence uncaused out of nothing. The better unifying explanation is a supremely valuable, supremely aware, reasoning, truthful, powerful, intelligent, beautiful Being. Such a context robustly explains—and unifies—a wide range of factors where naturalism fails. If God exists and leaves clues of his existence, then CSR's reductionistic claims about theistic belief lose their force.

Suitability of Being Created to Know God to Being Wired to Believe in Him. God has placed eternity in our hearts (Eccl. 3:11); so it makes perfect sense that we would be hard-wired with God-ward

inclinations. That natural processes contribute to religious belief doesn't disprove God's existence—that is a big *non sequitur* in CSR. As for Dawkins's claim that religion comes from a virus-like idea that plagues the mind, we can turn it on its head: if God has designed us in such a way that these sorts of processes enable us to come know God personally, we're actually at our cognitive best when our faculties direct us toward true belief in God. Despite religious superstition and extremism, natural processes partly contributing to the formation of religious belief are not at odds with God's existence; indeed, such processes may indicate that our minds are properly functioning—according to the way they've been designed.⁵³

God as a Better Explanation for Religious Impulse than Naturalistic Alternatives. Sociologist Christian Smith pointedly asks: “Why in a spiritless and godless world would people ever conceive of spirits and gods in the first place?” Why *voluntarily* sacrifice our lives for some intangible “super-empirical” realm? The reason humans persist in looking beyond the finite realm in search of the source of coherence, order, morality, meaning, and guidance for life is because this realm doesn't contain it. Humans, though embodied, are moral, spiritual beings with the capacity for self-transcendence and reflection on our world and our condition; this in turn enables us to search for a world-transcending God.⁵⁴ Naturalistic explanations that suggest that theology is a useful fiction—or, worse, a harmful delusion—fall short of telling us why the religious impulse is so deeply imbedded. If God exists, however, we have an excellent reason for why religion should exist.

NOTES

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3. Matthew Alper, *The “God” Part of the Brain: A Scientific Interpretation of Human Spirituality and God* (Naperville, IL: Sourcebooks, 2006), 92-3, 207-24.
4. Justin L. Barrett, “Cognitive Science of Religion: What Is It and Why Is It?” *Religion Compass* 1 (September 2007), available through Blackwell Publishing, <http://www.blackwell-compass.com/subject/religion/>.
5. Todd Tremlin, *Minds and Gods* (Oxford: Oxford University Press, 2006), 7, 9.
6. Andrew Newberg, Eugene d'Aquili, and Vince Rause, *Why God Won't Go Away* (New York: Ballantine Books, 2001), 7. See also Eugene d'Aquili and Andrew Newberg, *The Mystical Mind: Probing the Biology of Religious Experience* (Minneapolis: Augsburg Fortress, 1999).
7. Newberg, d'Aquili, and Rause, *Why God*, 8-10.
8. *Ibid.*, 128-41.
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10. *Ibid.*, 278-9.
11. Newberg, d'Aquili, and Rause, *Why God*, 145-6, 172, 162.
12. Rhawn Joseph, *The Transmitter to God: The Limbic System, the Soul, and Spirituality*, 2nd ed. (San Jose, CA: University Press California, 2001), 187-8.
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15. Boyer, *Religion Explained*, 309.
16. Daniel C. Dennett, *Breaking the Spell: Religion as a Natural Phenomenon* (New York: Viking, 2006).
17. Pascal Boyer, “Gods and the Mental Instincts That Create Them,” in *Science, Religion, and the Human Experience*, ed. James D. Proctor (Oxford: Oxford University Press, 2005), 241, 243.
18. Scott Atran, *In Gods We Trust: The Evolutionary Landscape of Religion*. Evolution and Cognition Series (Oxford: Oxford University Press, 2002), ch. 3.
19. Boyer, “Gods,” 244.
20. See Dean Hamer, *The God Gene: How Faith is Hardwired into Our Genes* (New York: Doubleday, 2004), which claims that the VMAT2 gene (a “hypnotizability-enabler”) is responsible for this. Dennett thinks “something like his [Hamer's] hypothesis (but probably much more complicated) is a good bet for confirmation in the near future” (*Breaking*, 139).
21. Dennett, *Breaking*, 83-86.
22. *Ibid.*, 318.
23. Scott Atran, *In Gods We Trust*, ch. 9.
24. Pascal Boyer, *The Naturalness of Religious Ideas: A Cognitive Theory of Religion* (Berkeley: University of California Press, 1994), ix.
25. *Ibid.*, 245.
26. *Ibid.*, 6.
27. See e.g., Donald M. Broom, *The Evolution of Morality and Religion* (Cambridge: Cambridge University Press, 2003), xi, 168.

28. Boyer, *Naturalness*, 6; see also Faber, *Psychological Roots*, 25.
29. Boyer, *Religion Explained*, 300.
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31. Alper, *The "God" Part*, 254.
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33. Owen Flanagan, *The Problem of the Soul: Two Visions of Mind and How to Reconcile Them* (New York: Basic, 2002), 3.
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41. Jerry A. Fodor, "The Big Idea: Can There Be a Science of the Mind?" *Times Literary Supplement* (July 3, 1992), 5.
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43. Philip E. Devine, *Natural Law Ethics* (Westport, CT: Greenwood Press, 2000), 36.
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45. Lakoff and Johnson, *Philosophy in the Flesh*, 4.
46. "Letter to William Graham Down, 3 July 1881," in *The Life and Letters of Charles Darwin*, ed. Francis Darwin (London: John Murray, 1887), 1:315-16.
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