

9 Biological Accounts of Religion

Historically, many thinkers have assumed that religion has a natural origin, but today researchers in the biosciences typically assume that its natural origin falls within the scope of evolutionary theory. For all scientific theories of religion, the general aim has always been to identify empirically the causal processes that operate in all human behaviors that are manifested in the phenomenon of religion. In our day, sociobiologists, evolutionary psychologists, and neuroscientists have advanced theories about the evolutionary causes of religious cognition and behavior. Although the life and behavioral sciences are becoming increasingly unified under the overarching paradigm of evolutionary theory, a consensus on the evolutionary explanation of religion – its development and function – may not quite yet be on the horizon.

In the present chapter, we initially review historical efforts to provide purely natural accounts of religion and then turn to contemporary evolutionary accounts. The discussion these days includes three broad types of evolutionary explanation of religion, which we label straightforwardly: adaptive, nonadaptive, maladaptive. As we develop these theories, we consider various religious responses. At the end, we offer a philosophical appraisal of the current state of the discussion.

The Scientific Study of Religion

Daniel Dennett has claimed that scientists and researchers “are now beginning, for the first time, to study the natural phenomenon of religion through the eyes of contemporary science.”¹ Although we are not witnessing literally

¹ D. Dennett, *Breaking the Spell: Religion as a Natural Phenomenon* (New York: Viking Penguin, 2006), 31.

the “first time” that religion has been studied as a natural phenomenon, we are seeing empirical scientists working out of credible theoretical frameworks to develop more rigorous, testable theories in an effort to explain religion causally. The eighteenth-century skeptic David Hume expressed interest in natural causes in his *Natural History of Religion*, which seeks to address two key questions “concerning its foundation in reason, and . . . origin in human nature.”² However, earnest inquiry into the bases of faith – both rational argumentation for religious belief and the innate dispositions for faith – hardly originated with Hume. Such inquiry enjoys a centuries-long tradition within the believing community itself, from Augustine through Anselm and Aquinas to the present day.

In any case, contemporary science pursues the natural causes of religion, Hume’s second concern, producing a number of interesting theories that, if true, may have implications for the rationality and truth of religious belief, Hume’s first concern. In *Dialogues Concerning Natural Religion*, Hume himself provided what he thought were effective rebuttals of basic theistic arguments for the reasonableness of belief in God and concluded that theistic religion has no credible rational foundation. Together with his natural history of religion, which attributes the emergence of religion to our animal instincts such as self-preservation, Hume provides an explanation for why religion persists even when it lacks what he would consider rational justification for its beliefs. In many ways, the current intellectual climate reflects Hume’s assessment. Although scientists operating by methodological naturalism are supposed to be metaphysically neutral, scientists who also believe that religious beliefs lack adequate rational justification are liable to think that natural explanations are the only kind of viable explanation. Thus, there can be a strong tendency to construe the empirical study of religion in terms of metaphysical naturalism, which tacitly combines causal explanations with a philosophical worldview.

Atheist philosopher Kai Nielsen makes the point in his *Naturalism and Religion*:

[T]here are no sound reasons for religious belief: there is no reasonable possibility of establishing religious beliefs to be true; there is no such thing as religious knowledge or sound religious belief. But, when there are no good

² D. Hume, introduction to *The Natural History of Religion* (1757, 1777).

reasons for religious belief and [this is] tolerably plain to informed and impartial persons not crippled by ideology or neurosis, and yet religious belief . . . persists in our cultural life, then it is time to look for the *causes* of religious beliefs: causes which are not also reasons justifying religious belief . . . Here questions about the origin and functions of religion become central.³

A large portion of the intellectual community agrees that causal explanations are sufficient to explain religion and religious beliefs. Both classical and contemporary efforts to provide rational grounds for religious beliefs are, therefore, irrelevant to the way “explaining” religion has come to be understood.

Biologist Jerry Coyne rejects supernatural explanation for the dual reasons that he is a committed naturalist and that proposals about the supernatural in science are unfruitful:

We don't reject the supernatural merely because we have an overweening philosophical commitment to materialism; we reject it because entertaining the supernatural has never helped us understand the natural world.⁴

Biologist Richard Lewontin echoes the sentiment, claiming that scientists “have a prior commitment, a commitment to materialism,” such that we must construct “an apparatus of investigation and a set of concepts that produce material explanations.”⁵ We remember Alvin Plantinga's worries from Chapter 3 that intellectual fairness suffers if scientists are allowed naturalistic background philosophical assumptions but not supernaturalistic assumptions.

Christian biologist Jeffrey Schloss comments that, even setting aside the issues regarding demarcation between science and nonscience, and regarding the worldview assumptions that influence a scientist's interpretation of scientific findings, we might try to arrive at a broadly shared methodological approach to the scientific study of religion:

That approach simply involves not invoking the supernatural; it can be characterized as not using the existence of the objects of religious beliefs in explanations of those beliefs.⁶

³ K. Nielsen, *Naturalism and Religion* (Amherst, NY: Prometheus Books, 2001), 35.

⁴ J. A. Coyne, “Don't Know Much Biology,” *Edge*, June 5, 2007, www.edge.org/conversation/jerry_coyne-dont-know-much-biology.

⁵ R. Lewontin, “Billions and Billions of Demons,” *New York Review of Books*, 44 no. 1 (2001), 31.

⁶ J. P. Schloss, “Science Unfettered or Naturalism Run Wild?,” in J. Schloss and M. J. Murray (eds.), *The Believing Primate* (New York: Oxford University Press, 2010), 9.

We still need at least a general characterization of religion such that it can be the object of scientific investigation, although an agreed-upon definition of religion has been lacking in scientific accounts.

In Chapter 1, we offered this broad definition: “[R]eligion is constituted by a set of beliefs, actions, and experiences, both personal and collective, organized around a concept of an ultimate reality that inspires or requires devotion, worship, or a focused life orientation.” This ultimate reality may be understood as a unity or a plurality, personal or nonpersonal, divine or not, differing from religion to religion. Dennett’s proposed definition is that religions are “social systems whose participants avow belief in a supernatural agent or agents whose approval is to be sought.”⁷ Although religion is more complex than Dennett allows, with many different expressions across social and ecological contexts, we develop our discussion along the lines he suggests. Our approach allows the scientific study of various religious data – beliefs (propositional truth-claims), experiences (prayers, visions), and practices (rituals, approved social behaviors such as fellowship and good deeds). Further, our approach also considers reasons for the metaphysical validity of religion as well as reasons for the truth of specific religious beliefs on their own merits.

Historical Approaches

Most of the historical theories of religion – Freudian, Durkheimian, and even Marxist – share with contemporary theories the underlying naturalist assumption that religion is purely a natural phenomenon and completely explicable in scientific terms. Philosopher and psychologist William James, who invented the field of psychology of religion when he published *The Varieties of Religious Experience: A Study of Human Nature* in 1902, took an evidence-based approach to the academic study of religion. James focused his research on the pragmatic value of religion and particularly on “immediate personal experiences” rather than religious institutions:

Religion, therefore, as I now ask you arbitrarily to take it, shall mean for us *the feelings, acts, and experiences of individual men in their solitude, so far as they apprehend themselves to stand in relation to whatever they may consider divine.*⁸

⁷ Dennett, *Breaking the Spell*, 9.

⁸ W. James, *The Varieties of Religious Experience: A Study in Human Nature* (New York: Longmans, Green, and Co., 1902), 31; emphasis original.

James classified religion into two broad types according to the characteristic experiences of their adherents – “religions of healthy mindedness” and “religions of the sick soul.” In Saint Francis and his followers, for example, James saw a general optimism and ability to cope with life’s circumstances.⁹ In other religious personality types, such as that of Martin Luther, he detected unhealthy morbid tendencies to brood over the evil and negative aspects of human life, including one’s own.¹⁰

James was well aware of Sigmund Freud, his contemporary, who was a dedicated atheist. Freud’s psychoanalytic method was having documented clinical successes, which the pragmatist James admired. In his 1913 *Totem and Taboo*, Freud presented his psychoanalytic theory that religion originated to meet human needs and thus can be explained in terms of psychological motivations, including wish fulfillment, sexual repression, absolution of guilt, and the need to feel protected against the forces of nature by a powerful father figure. Extending his harsh view of religion in *The Future of an Illusion*, Freud argued that organized religion arose because human persons can live together in mutually beneficial societies only if civilization erects institutions that limit the satisfaction of destructive libidinal drives, such as incest, cannibalism, and murder. As he observed, the religious injunction to “love one’s neighbor as oneself” protects civilization from disintegration because such external limits on antisocial instincts become more internalized and religious satisfactions become substitutes for those repressed instincts.

In Freud’s *New Introductory Lectures on Psycho-Analysis*, we find the following comment on religion as one phase in the evolutionary trajectory of humanity:

[R]eligion is an attempt to get control over the sensory world, in which we are placed, by means of the wish-world, which we have developed inside us as a result of biological and psychological necessities If one attempts to assign to religion its place in man’s evolution, it seems not so much to be a lasting acquisition, as a parallel to the neurosis which the civilized individual must pass through on his way from childhood to maturity.¹¹

⁹ James, *Varieties of Religious Experience*, 80.

¹⁰ James, *Varieties of Religious Experience*, 128, 246.

¹¹ S. Freud, *New Introductory Lectures on Psycho-Analysis*, trans. W. J. H. Sprott (New York: W. W. Norton and Co., 1933), 229–230.

Interestingly, Christopher Hitchens, a public intellectual and New Atheist, energetically promoted a view like Freud's – that religion is an “infantile” remnant of the primitive in us, which modern persons should replace with reason and science.¹²

Sociologist Émile Durkheim, a contemporary of Freud, rejected Freud's largely individualistic psychological account of religion, partly because humans should have realized by now that we are “victims of error.”¹³ According to Durkheim's sociological view, religions are found only at the heart of established societies, for the gods connect with (e.g., threaten, bless) the society (tribe, clan, family) rather than the individual. Religion has its origin in social sentiments that tie the individual to society taken as a whole – creating social sentiments and obligations that undergird morality: “Society dictates to the believer the dogmas he must uphold and the rites he must observe; [this indicates] that the rites and dogmas are society's own handiwork.”¹⁴ Religion reinforces for the individual his or her role in the larger group by projecting an understanding of the meaning of life from the tribe's perspective. Thus, “religions wholly, or for the most part, [are] a sociological phenomenon” making metaphysical considerations regarding the divine irrelevant.¹⁵ With Durkheim, as with James, we detect the hint of an adaptation hypothesis regarding religion that gained currency later in the twentieth century.

One common theme between nineteenth-century scientific accounts of religion and twentieth-century biological accounts is the belief that a causal account is sufficient. Another commonality is the mixed opinion about whether religion has any positive role to play in modern society. In the early twentieth century, Julian Huxley, biologist and grandson of Thomas Henry Huxley, advocated the putatively scientific view that religion is “a way of life ... which follows necessarily from a man's holding certain things in reverence, from his feeling and believing them to be sacred.”¹⁶ Huxley adopted a general evolutionary story that was typical amongst scientific thinkers: religion began in connection to the sacred but has changed over

¹² C. Hitchens, *God Is Not Great: How Religion Poisons Everything* (New York: Twelve, 2009), 107–108.

¹³ E. Durkheim, “Concerning the Definition of Religious Phenomena,” *Durkheim on Religion* (London: Routledge and Kegan Paul, 1975), 94.

¹⁴ Durkheim, “Religious Phenomena,” 93. ¹⁵ Durkheim, “Religious Phenomena,” 21.

¹⁶ J. Huxley, *Religion without Revelation* (New York: Mentor, 1957), 20.

time, leaving behind emotions of fear to focus more on the rational. Magic, an early stage of religion in which verbal symbols and rituals were used to control unseen forces, gave rise to personification of the forces of nature, attributing human characteristics to supernatural beings who could control these forces for our benefit. Moral standards were later supported by connecting them to the deities. Gradually these deities are unified into fewer gods, resulting eventually in monotheism. For Huxley, religion does have an ongoing role to play in society, as new systems of religious beliefs, made more rational by purging unscientific ideas, can supply helpful guidance and encouragement to assist human flourishing in the further evolution of society and culture.

Philosopher of religion Peter Byrne challenges such revisionary stories and identifies their generally ontological and epistemological antirealist orientation – that religion is not about any transcendent reality or a way of knowing truths about the transcendent.¹⁷ Nonrealist accounts of religion take the view that religious beliefs as well as religion itself are not about what religious believers take them to be about; instead, they arise from subjective psychological experiences or public social experiences. In this regard, evolutionary nonrealist accounts of religion resemble evolutionary nonrealist accounts of morality, giving rise to similar questions about whether such accounts create an epistemic undercutting defeater for religious belief or anchor ontological religious error theory.

Religion as Evolutionary Adaptation

Although scientific accounts of religion may be broadly categorized in evolutionary terms such as adaptationist, nonadaptationist, or maladaptationist, these positions can be connected to different theoretical frameworks that are not necessarily mutually exclusive. The traditional Darwinian framework understands religion as causally driven by biology, that is, selected for its adaptive value. Cognitive accounts of religion see it as produced by cognitive dispositions that have evolved as a result of our basic cognitive capacities, which have adaptive value. Coevolutionary approaches generally accept fundamental Darwinian processes as well as the cognitive mechanisms at work in religion but see culture as the primary evolutionary factor

¹⁷ P. Byrne, *God and Realism* (Burlington: Ashgate, 2003), 11–12.

throughout the history of religion. In this section, we discuss some prominent Darwinian accounts of religion, leaving discussion of the other two approaches for the following sections.

Although Darwinian approaches treat religion as a characteristic of our biology, resulting from natural selection, this does not entail that religion is automatically adaptive, since it would still be thoroughly Darwinian to hold that religion was once adaptive but has since lost its adaptive advantage or even that it always was a nonadaptive by-product of the evolutionary process. What makes a theory of religion Darwinian is that it is premised on natural selection. The major Darwinian accounts these days are adaptationist, asserting that religion is a biologically endowed characteristic or set of characteristics that evolved due to reproductive benefit. Adaptationist theories incorporate a range of proposed advantages religion provides, including reducing the stress induced by the existential fear of death and assistance in attracting mates in sexual selection.¹⁸

However, the most prominent proposal comes from the eminent evolutionary biologist E. O. Wilson – “the father of sociobiology” – who argues that religion is selection-produced in humans because, much as Durkheim thought, it enhances cohesive group identity:

The highest forms of religious practice, when examined more closely, can be seen to confer biological advantage. Above all, they congeal identity. In the midst of the chaotic and potentially disorienting experiences each person undergoes daily, religion classifies him, provides him with unquestioned membership in a group claiming great powers, and by this means gives him a driving purpose in life compatible with his self interest.¹⁹

Regarding cultural evolution, Wilson believes that religious practices that promote reproductive fitness help perpetuate the underlying controlling genes and that religious practices that do not promote fitness (say, practices adopted by the Shakers) lead to the decline of the underlying genes.²⁰ Yet he holds that biology is still the main cause of religion.

¹⁸ Schloss, “Science Unfettered or Naturalism Run Wild?,” 20. Examples of the adaptationist approach include R. D. Alexander, *Darwinism and Human Affairs* (Seattle, WA: University of Washington Press, 1979); D. S. Wilson, *Darwin’s Cathedral* (Chicago: University of Chicago Press, 2002).

¹⁹ E. O. Wilson, *On Human Nature* (Cambridge, MA: Harvard University Press, 1978), 188.

²⁰ Wilson, *On Human Nature*, 178.

Given the Darwinian view that religion is produced by natural selection, there is no consensus on whether selection works essentially for the benefit of the group or of the individual. Wilson tends strongly to favor group adaptation, whereas other thinkers in this area favor individual benefit. The idea that religion is a cooperative adaptation at the group level is more established and has generated numerous theoretical and empirical studies, a few of which are enlightening to treat briefly. Two key themes factor into many of the studies: that religion serves to control defections from a cooperative group and that religion functions to coordinate cooperative goals and strategies.²¹ Clearly, all cooperative systems depend on capacities for addressing “cheater” control and effecting interactive coordination, whether the cooperative systems are at the level of genomes, multicellular organisms, or social groups.

Costly signaling, examined in Chapter 7, is an excellent example of a behavior that can be a group-level or individual-level adaptation. On the group level, sacrifice by an individual religious believer for the sake of the group is likely to be compensated for by benefits accruing to its group relative to competing groups. As evolutionary psychologist Ara Norenzayan describes it, religion essentially involves “passionate, ritualized communal displays of costly commitments to counterintuitive worlds governed by supernatural agents.”²² Belief in the supernatural thereby has evolutionary adaptive payoff. Evolutionary biologist and anthropologist David Sloan Wilson argues that we must not underestimate the “motivational physiology” of rule enforcement (obey parents, obey priests, obey magistrates) that religion employs to reinforce strong group cohesion.²³ On the individual level, a member of the religious group who engages in costly signaling is more likely to accrue reproductive benefit, which we discuss shortly.

In his groundbreaking work *Darwinism and Human Affairs*, Richard Alexander, a prominent evolutionary biologist, points out that humans have enormously intricate forms of sociality, of a size and complexity that are

²¹ For example, see D. Johnson and J. Bering, “Hand of God, Mind of Man: Punishment and Cognition in the Evolution of Cooperation,” *Evolutionary Psychology*, 4 (2006), 219–233; J. Bulbulia, “Religious Costs as Adaptations that Signal Altruistic Intention,” *Evolution and Cognition*, 10 (2004), 19–38.

²² A. Norenzayan, “Why We Believe: Religion as a Human Universal,” in H. Høgh-Olsen (ed.), *Human Morality and Sociality: Evolutionary and Comparative Perspectives* (London: Palgrave Macmillan, 2010), 60.

²³ Wilson, *Darwin’s Cathedral*, 105.

almost nonexistent in the animal world. Cooperation gives advantage in many ways – in gaining food or other important resources and defending against predators, including especially other human groups. Alexander maintains that religion, like morality, was key to creating and sustaining larger, more connected social groups: “[T]he group aspect of religion is a superb unity-producing and maintaining phenomenon.”²⁴ Norenzayan likewise explains that beliefs in supernatural agents allow people to live together in large, cooperative societies far beyond the bounds of small bands of genetically related individuals.²⁵ Alexander further notes that advanced societies have a morally idealized god that is the negation of the promotion of self-interest or even tribal interest and is the hope of the common person:

The notion of a god of all people, who was impartial, was the notion of a god who could not condone inequalities such as polygyny, slavery, and caste systems This kind of god would have been from the start the hope of ordinary people – the peasants and the downtrodden and the minorities.²⁶

Interestingly, Thomas Henry Huxley once commented that a universal idealized god is actually combating natural selection in a certain sense.

Some evolutionary thinkers actually see Jesus’s teachings about indiscriminate altruism and self-sacrificial behavior as “reversing evolution,” so to speak. Jesus preached love for enemies, sacrificial giving, a worldwide mission, and the moral and spiritual value of caring for the material needs of others. He taught the importance of women, children, the stranger, and the oppressed. Indeed, the universalized “love for neighbor” dissolves all social distinctions, as Saint Paul declared: “In Christ there is neither Jew nor Greek, male nor female, slave nor free.”²⁷ Such values are not rooted in the struggle for survival and natural selection.

Darwinian theories that religion provides something of value and worth to the individual are less well known than group-centered theories, but they deserve mention. Although group-focused and individual-focused approaches to religion need not be mutually exclusive, since selection could operate at both levels, some positions exhibit a degree of exclusiveness. For example, Wilson’s group perspective rejects psychological explanations, while physical anthropologist Vernon Reynolds and religion scholar Ralph

²⁴ A. Richard, *The Biology of Moral Systems* (London: Routledge, 2017), 203.

²⁵ Norenzayan, “Why We Believe,” 58–71. ²⁶ Richard, *The Biology of Moral Systems*, 202.

²⁷ Galatians 3:28.

Tanner argue that religion benefits only the individual. In evolutionary terms, Tanner and Reynolds focus on how membership in a religious group affects the individual's chance of survival and reproductive success. Employing the r-/r+ distinction in evolutionary biology regarding rates of reproductive activity, they classify organisms with high birth rates as following an r+ strategy and organisms with lower rates as following an r- strategy.²⁸ Pursuing an r+ strategy – having lots of offspring and providing relatively little parental care (such as in the case of rabbits) – tends to work best in unstable conditions. Organisms pursuing an r- strategy – having fewer offspring and providing more parental care (such as in the case of whales) – tends to work best in stable conditions. Humans, depending on conditions, can exhibit either strategy. As an example of applying this thinking to religion, Tanner and Reynolds find that it is one, but not the only, causally relevant variable accounting for higher birth rates in various predominantly Catholic countries that are less stable and for lower birth rates in many Protestant countries where living conditions are more stable.

An individual-centered approach is also promoted by Dominic Johnson, an evolutionary biologist, and Jesse Bering, an evolutionary psychologist, who argue that natural selection may have favored a widespread human belief in supernatural reward and punishment among our evolutionary ancestors.²⁹ The major theistic religions contain teachings regarding eternal reward for doing good and eternal punishment for doing evil. In the Muslim scriptures, for example, we find hope of reward: “For them who have done good is the best [reward] and extra. No darkness will cover their faces, nor humiliation. Those are companions of Paradise; they will abide therein eternally.”³⁰ We also find fear of punishment: “Indeed, those who devour the property of orphans unjustly are only consuming into their bellies fire. And they will be burned in a Blaze.”³¹

Other psychological approaches emphasize the temporal (not eternal) benefits of religion to the individual, such as a greater sense of well-being or comfort in times of difficulty. Neuroscientist Patrick McNamara argues in *The Neuroscience of Religious Experience* that deep religious propensities have been wired into our cognitive circuitry over evolutionary time, such that

²⁸ V. Reynolds and R. Tanner, *The Biology of Religion* (New York: Longman, 1985), 15ff.

²⁹ Johnson and Bering, “Hand of God, Mind of Man,” 219–233. ³⁰ Qur'an 10:26.

³¹ Qur'an 4:10.

religion has been a defining mark of what it means to be human.³² He even argues that the normal function of religion is to support cognitive processes that lead the “self” to aspire to become an “ideal self,” as defined by that religion.³³

Among biological accounts of religion as an evolutionary adaptation, religion receives a reasonably positive, or at least neutral, treatment because of its envisioned adaptive roles. Nevertheless, as a causal explanation of religion, a biological account can be construed as totalistic, completely explaining our religious tendencies and undercutting any rationale for holding religious beliefs. Of course, this posture toward religion is a philosophical interpretation of science rather than science per se, based on a move from the ostensibly neutral approach of methodological naturalism to metaphysical naturalism and strict empiricism.

Does explaining the *capacity* for forming religious beliefs without reference to the *content* of the beliefs provide an epistemic defeater for religious beliefs about the supernatural? Is the plausibility of explanation that cites known biological factors a reason to conclude that there are no other factors? Obviously, naturalists working on these issues think so. However, some Christian theists point out that Christian doctrine affirms the physical conditions of human life, which entails that higher capacities, such as rational thought, moral awareness, and a sense of the divine, will be mediated through biological realities. Psychologist Justin Barrett, a Christian theist, argues that cognitive science reveals “some particular features of human minds that make belief in superhuman agents natural” – that, from childhood, we humans have a general innate tendency to believe in god. This “cognitive architecture,” as he calls it, can readily be seen to be the result of brain evolution. Anthropologist and atheist Scott Atran makes the same point in his book *In Gods We Trust*.³⁴

Barrett first observes that the general innate tendency to believe that other persons have minds seems to have been built into our cognitive architecture. He asks rhetorically whether a complete scientific explanation for why humans nearly universally believe that other people have minds

³² P. McNamara, *The Neuroscience of Religious Experience* (Cambridge: Cambridge University Press, 2009), ix.

³³ McNamara, *Neuroscience of Religious Experience*, xi; see also 44.

³⁴ S. Atran, *In Gods We Trust: The Evolutionary Landscape of Religion* (New York: Oxford University Press, 2002), 57.

would suddenly count against that belief – that is, against whether humans *should* believe in other minds. Thus, says Barrett,

Belief in other minds and belief in gods are both highly intuitive consequences of cognitive architecture operating on ordinary inputs. Both are non-empirical, widespread beliefs. Neither is directly weakened by increasing scientific knowledge about how these beliefs come about any more than knowledge of the visual system makes us suspicious that the visual world is not really out there.³⁵

Barrett concludes that to point out the scientific fact that the structure of the evolved human mind encourages certain beliefs is hardly to raise a sovereign objection to the truth and rationality of those basic beliefs. Many Christian thinkers argue, for example, that Christianity predicts that God, who seeks relationship with us, would create a world in which a capacity for awareness of him would evolve. These thinkers then state that a world with creatures capable of seeking God is exactly what we have. In Romans, Saint Paul writes, “that which is known about God is evident within them; for God has made it evident to them.”³⁶ To the extent that we have scientific facts about the evolution of religious capacities, we have one more case where theists and nontheists offer conflicting interpretations of those facts.

The epistemological work of Christian philosopher Alvin Plantinga resonates with Barrett’s psychological work in holding that belief in God is an almost inevitable consequence of the kinds of minds we have. Plantinga explains that Christian theism entails that God willed rational creatures to exist and develop a panoply of belief-forming powers aimed at truth. In appropriate circumstances, these powers activate to form rationally warranted beliefs immediately and directly without discursive argument. Our beliefs in other minds, the external world, and the past just begin the list of immediate beliefs that are so fundamental that they cannot be argued. Among the various human belief-forming powers, such as perception and memory, is also an innate disposition to believe in God – which Plantinga designates using John Calvin’s term *sensus divinitatis*, a sense of the divine. Calvin writes, “There is within the human mind, and indeed by natural instinct, an awareness of divinity . . . [T]his conviction, namely that there is

³⁵ J. Barrett, “Cognitive Science, Religion, and Theology,” in Schloss and Murray (eds.), *Believing Primate*, 96.

³⁶ Romans 1:19.

some God, is naturally inborn in all, and is fixed deep within, as it were in the very marrow.”³⁷ Plantinga concludes, then, that the epistemological warrant for beliefs, which occur naturally out of the human constitution, is best supported by supernaturalist metaphysics.³⁸

Religion as Cognitive Incidental

In the cognitive science of religion (CSR), religion is viewed as a by-product of the evolutionary process – a “spandrel” – in which case it is nonadaptive.³⁹ CSR – which combines cognitive, developmental, and evolutionary psychology with anthropology and history of religion – got traction in the 1990s when Pascal Boyer published *Tradition as Truth and Communication* and *The Naturalness of Religious Ideas*. His fundamental idea was that religion involves native cognitive dispositions that have evolved along with our cognitive capacities. In his 2001 *Religion Explained*, Boyer writes, “The building of religious concepts requires mental systems and capacities that are there anyway, religious concepts or not.”⁴⁰ Our cognitive capacities have adaptive value, whereas religion as an associated disposition does not have adaptive value, although it may have been adaptive in the ancestral environment.

Several specific proposals have been offered on how religion is an evolutionary incidental – from religious ritual as harm avoidance behavior to religious emotion as expression of longing for attachment.⁴¹ However, the salient theory asserts that humans have the innate tendency to attribute intentions and agency to a wide variety of things in their environment. Anthropologist Stewart Guthrie argues in *Faces in the Clouds* that humans have an almost universal propensity for intentional attribution. Guthrie asserts that this bias underlies animistic religion and is expressed in more developed religions, perhaps even explaining why people are susceptible to the argument from design. Yet, as Guthrie put it, “the clothes have no

³⁷ John Calvin, *Institutes of the Christian Religion*, 1.3.1–3.

³⁸ A. Plantinga, *Warrant and Proper Function* (New York: Oxford University Press, 1993), 237.

³⁹ The term was brought into biology by S. J. Gould and R. Lewontin, “The Spandrels of San Marco and the Panglossian Paradigm,” *Proceedings of the Royal Society, Series B*, 205, no. 1161 (1979), 581–598.

⁴⁰ P. Boyer, *Religion Explained: The Evolutionary Origins of Religious Thought* (New York: Basic Books, 2001), 331.

⁴¹ R. N. McCauley and E. T. Lawson, *Bringing Ritual to Mind* (New York: Cambridge University Press, 2002); K. J. Eames, *Cognitive Psychology of Religion* (Long Grove, IL: Waveland Press, 2016), 117–133; S. Guthrie, *Faces in the Clouds* (Oxford University Press, 1993).

emperor.”⁴² Evolutionary psychologist Paul Bloom goes further in suggesting that we are all natural-born Creationists.⁴³ Since Creationism is particularly popular in the United States, a number of studies have been conducted to demonstrate the innate propensity in children to attribute creative agency to inanimate things (such as a neat pile of blocks) while the adults studied predictably differed according to their educational background and cultural environment.⁴⁴

Daniel Dennett, philosopher of cognitive science and New Atheist, makes the case that religion arose when people embraced an *intentional stance*, an animal response that attributes agency to a wide variety of things in the environment, animate or inanimate, that puzzle or frighten. Dennett asserts that the capacity for the intentional stance is rooted in innate mechanisms or capacities for agency detection that evolved in higher animals, but with a bias to make false positives in attributing agency to nonagents. Cognitive scientists call this capacity a “hypersensitive agency detection device” (HADD).⁴⁵ From an evolutionary perspective, Dennett calls this the “Good Trick” – an impressive feature of the human mind – which has the ability to preserve our lives by treating things as agents with beliefs and intentions.⁴⁶ Religion, according to Dennett, makes use of this capacity.

A significant amount of empirical work undergirds this theory for animals while also showing humanity’s nearly universal tendency for anthropomorphically projecting supernatural agents, like gods and demons, onto the natural world. Primitive people might say, for instance, that a severe thunderstorm results from angering the gods. Logically, these studies do not show that religion has no adaptive functions, but they do establish an important cognitive tendency that has deep evolutionary roots.⁴⁷

Dennett observes that religion as a human phenomenon is a hugely costly endeavor, requiring the expenditure of energy and resources, leading him to state that something must pay for it. He quotes the Latin, *cui bono?* – “Who

⁴² Guthrie, *Faces in the Clouds*, 5.

⁴³ P. Bloom, “Religious Belief as an Evolutionary Accident,” in Schloss and Murray (eds.), *Believing Primate*, 121.

⁴⁴ F. Heider and M. Simmel, “An Experimental Study of Apparent Behavior,” *American Journal of Psychology*, 57 (1944), 243–259; G. Csibra et al., “One-Year-Old Infants Use Teleological Representations of Actions Productively,” *Cognitive Science*, 27 (2003), 111–133; Guthrie, *Faces in the Clouds*.

⁴⁵ J. Barrett, “Exploring the Natural Foundations of Religion,” *Trends in Cognitive Science*, 4 (2000), 29–34.

⁴⁶ Dennett, *Breaking the Spell*, 67, 108–114. ⁴⁷ Guthrie, *Faces in the Clouds*.

benefits from this?" Evolutionary biology teaches that any persistent phenomenon in the living world that apparently exceeds its function requires explanation because evolution is so efficient in eliminating pointless accidents. Dennett answers the question by indicating that religion survived because it developed ideas that could be culturally inherited in connection with other genetically based cultural ideas: "Believe and obey your parents" protects children against danger. Selection favored the emergence of a trusted "information superhighway" between parents and children through which cultural ideas and religious stories could pass. Religion, then, uses the idea of a trusted supernatural parent – especially a "Father."

Dennett adopts Richard Dawkins's view that the survival of religion in human culture is bound up with "memes" – units of cultural transmission, rooted in the brain or cultural artifacts, much as genes are units of biological inheritance. Thus, memes (Greek: *mimesus*, imitation) or memplexes replicate and transmit these cultural ideas. Rituals such as prayer, singing, dancing, and reciting where people act in unison are particularly powerful ways to transmit memes. Eventually, gene stewards – shamans, priests, and ministers – appeared in the history of religion to shepherd the memes because they personally had something to gain from their preservation.

Dennett's evolutionary explanation of religion amalgamates ideas from biology, cognitive science, and coevolutionary theories of the role of culture interacting with biology. Like anthropologist James George Frazer and Freud, he recognizes that religion is socially significant and can foster positive traits, such as kindness toward others or the resolve to abstain from drugs, but he also speculates that perhaps there might be atheist groups that do the same positive things. Besides, as Dennett points out, religion can foster negative traits, such as bigotry and enforcement of ignorance, which would make it on balance a negative in human life.

Religion as Maladaptive Memetic Pathogen

No evolutionary account of religion is more famous than Richard Dawkins's theory that religion is maladaptive, a harmful human phenomenon that is the product of biology and culture. While there is considerable debate among evolutionary theorists and philosophers of biology over what it means to be adaptive, our discussion connects it to fitness. Thus, the basic question is whether religion generates behaviors that enhance human

fitness. However, we recognize prior questions that we cannot pursue at length, such as, What is human fitness? Should human fitness be linked to a broad conception of human flourishing? Jeffrey Schloss asks how we could ever measure fitness or flourishing. Should we count the total number of religious adherents, or determine religion's net influence on individual lives on some hedonic or eudaemonic index, or weigh the all-things-considered impact of religion on the trajectory of human history, or what?⁴⁸ Further, if adaptivity in religion is not strictly binary, then we must discriminate which religions and which religious practices are and are not adaptive, by whatever measure.

Dawkins laid out his coevolutionary account in 1976 in *The Selfish Gene*, which acknowledged that culture plays a key role in archiving and transmitting information that informs the behavior of individuals and groups. His neologism – “meme” – refers to the basic unit of cultural storage, replication, and transmission.⁴⁹ A meme conveys an idea or behavior or theme that spreads from person to person within a culture, often with the assistance of writing, speech, song, and rituals. “Examples of memes,” he suggests, “are tunes, ideas, catch-phrases, clothing fashions, designs for pots or building arches.”⁵⁰ Actually, as Dawkins further clarifies, these are meme cultural products, meme phenotypes – not the instructions but the results – just as phenotypical expressions of genes, like hair color or wing length, are biological gene products rather than the genetic instructions. Ostensibly residing in the brain, memes as units of information or instruction self-replicate, mutate, and respond to selective pressures.

Dawkins's selfish-meme theory parallels his selfish-gene theory. As we saw in previous chapters, Dawkins employs selfish-gene theory to explain a wide variety of phenomena, from genetic propagation to morality, as ultimately existing to preserve the selfish gene. Just as a gene is an automatic replicator, so is the meme:

Once the genes have provided their survival machines with brains that are capable of rapid imitation, the memes will automatically take over. We do not even have to posit a genetic advantage in imitation, though that would

⁴⁸ Schloss, “Science Unfettered or Naturalism Run Wild?” 16.

⁴⁹ R. Dawkins, *The Selfish Gene* (New York: Oxford University Press, 1976), 249.

⁵⁰ Dawkins, *The Selfish Gene*, 249.

certainly help. All that is necessary is that the brain should be capable of imitation: memes will then evolve that exploit the capability to the full.⁵¹

For Dawkins, religions are “the prime examples of memes,”⁵² exploiting throughout evolutionary history the meme’s striking capability to replicate.

Dawkins’s 1991 essay “[Viruses of the Mind](#)” describes religious beliefs as “mind-parasites” and believers as “faith sufferers” or “patients.” After all, physical sickness gets passed from one individual or population to another, why not mind viruses? Dawkins proceeds to critique two harmful traits of religion interpreted as viruses of the mind. First, Dawkins insists, memes, particularly religious memes, can bypass normal rational processes:

The patient typically finds himself impelled by some deep, inner conviction that something is true, or right, or virtuous: a conviction that doesn’t seem to owe anything to evidence or reason, but which, nevertheless, he feels as totally compelling and convincing. We doctors refer to such a belief as “faith.”⁵³

Although logic and evidence are virtues in normal life, Dawkins thinks that religion makes virtues of lack of logic and absence of evidence.

Second, Dawkins charges that religious faith is harmful and destructive, a source of bigotry and violence, “one of the world’s great evils, comparable to the smallpox virus but harder to eradicate.”⁵⁴ Neuroscientist Sam Harris, another New Atheist, echoed similar sentiments about religious violence in *The End of Faith: Religion, Terror, and the Future of Reason*, which he published shortly after the September 11, 2001, terrorist attacks on the United States. Harris declared that “religious faith perpetuates man’s inhumanity to man.”⁵⁵ Increasingly, the topics of religious intolerance and violence are the subjects of scientific conferences, books, and research.⁵⁶

⁵¹ Dawkins, *The Selfish Gene*, 259, 328.

⁵² R. Dawkins, *A Devil’s Chaplain: Reflections on Hope, Lies, Science, and Love* (Boston: Houghton Mifflin, 2003), 117.

⁵³ R. Dawkins, “Viruses of the Mind,” in B. Dahlbom (ed.), *Dennett and His Critics* (Oxford: Blackwell, 1993), 20.

⁵⁴ R. Dawkins in a speech delivered to the American Humanist Association, accepting the award for 1996 Humanist of the Year. Published as “Science Verses Religion,” in L. P. Pojman and M. Rea (eds.), *Philosophy of Religion: An Anthology*, 5th ed. (Belmont, CA: Thomson Wadsworth, 2008), 426.

⁵⁵ S. Harris, *The End of Faith: Religion, Terror, and the Future of Reason* (New York: W. W. Norton, 2005), 14.

⁵⁶ S. Clarke, R. Powell, and J. Savulescu (eds.), *Religion, Intolerance, and Conflict: A Scientific and Conceptual Investigation* (Oxford: Oxford University Press, 2013).

Both of Dawkins's criticisms discussed earlier deserve measured reflection. In addition to his first point that religion is perpetuated by memes rather than by rational thought, he is especially known for deconstructing William Paley's analogical design. In *The Blind Watchmaker*, he seeks to demonstrate the rational insufficiency of religion by showing that natural selection can produce organized, complex biological structures that seem designed without the work of supernatural intelligence.⁵⁷ Dawkins, Dennett, and others who share this opinion often make sweeping indictments of the theistic arguments but do so without a high degree of technical philosophical engagement. Most intellectually sophisticated theists recognize the weakness of Paley's argument and yet give credence to better forms of teleological argumentation – such as the fine-tuning and anthropic arguments, which are scientifically informed.⁵⁸ The Society of Christian Philosophers, founded in 1978, is often cited as a case study of the intellectual vibrancy of theistic and Christian belief, because the society engages believers and nonbelievers alike in rational dialogue regarding the rational credentials of Christian faith.⁵⁹ An example of philosophical engagement between both sides is found in *Science, Evolution, and Religion*, a debate by Christian theist Michael Peterson and Darwinian naturalist Michael Ruse, in which both stipulate the truth of evolutionary theory but differ in their worldview interpretations of it.⁶⁰

As a causal explanation of religious cognition and behavior, meme theory can motivate both ontological and epistemological antirealism about religion – that it is not about anything real and not a way of knowing truth. Many scientists think that the idea of memes as mechanisms of cultural transmission is inadequately defined, either operationally or empirically, and thus that it must await quantified experimental support.⁶¹ Additionally, some religious believers have asked why atheism is not itself a meme that replicates through culture; but to call a belief a meme is supposedly to undercut its rationality.

⁵⁷ R. Dawkins, *The Blind Watchmaker* (New York: W. W. Norton, 1986), 6.

⁵⁸ M. L. Peterson, et al., *Reason and Religious Belief: An Introduction to the Philosophy of Religion*, 5th edn. (New York: Oxford University Press, 2013), 93–101.

⁵⁹ See the multi-decade contributions in *Faith and Philosophy: Journal of the Society of Christian Philosophers*, which is open access at www.faithandphilosophy.com. See also www.societyofchristianphilosophers.com.

⁶⁰ M. L. Peterson and M. Ruse, *Science, Evolution, and Religion: A Debate about Atheism and Theism* (New York: Oxford University Press, 2016).

⁶¹ For example, see J. Coyne, "The Self-centered Meme," *Nature*, 398 (1999), 767–768.

For instance, scientist and Christian theologian Alister McGrath puts it this way: “If all ideas are memes, or the effects of memes, Dawkins is left in the decidedly uncomfortable position of having to accept that his own ideas must also be recognized as the effects of memes.”⁶² Since it is close to incoherent to think that theism and atheism are equally memes, and thus equally valid or invalid, it appears that more direct intellectual engagement between religion and its critics is required.

In pursuing Dawkins’s second point – that religion is harmful – one might ask whether all religions are toxic or whether some religions are beneficial. Religions vary widely throughout history – from primitive animist religions to religions with well-developed moral practices and theological systems. Should they all be painted with the same brush? For example, there are a great many religious charitable organizations with humanitarian outreach – feeding the needy, offering agricultural and medical assistance in underdeveloped countries, founding and supporting major colleges and universities, and the like. Some would argue that, in many religions, negative behaviors among their adherents are simply the failure to live up to the religion’s high ideals rather than a genuine expression of them. Interestingly, Susan Blackmore, an expert in memetics, who once agreed with Dawkins that religion is a harmful cultural virus, later came to believe that religion could be beneficial as well as harmful.⁶³

Even as a naturalist reductionist offering a coevolutionary interpretation of religion, Dawkins has acknowledged that humans are in some sense unique.⁶⁴ As Dennett remarks, “We have creeds, and the ability to transcend our genetic imperatives. This in fact makes us different.”⁶⁵ The theist might well argue that a naturalist foundation makes it difficult to support any credible claim about possible human uniqueness but that a religious and theological foundation can support such a claim. For instance, the orthodox Christian claim, asserted with scientific awareness, is that God willed an evolutionary world that would eventually bring forth

⁶² A. E. McGrath, *Dawkins’ God: From the Selfish Gene to the God Delusion*, 2nd edn. (Oxford: Wiley Blackwell, 2015), 126.

⁶³ S. Blackmore, “Why I No Longer Believe Religion Is a Virus of the Mind,” *The Guardian*, September 16, 2010, www.theguardian.com/commentisfree/belief/2010/sep/16/why-no-longer-believe-religion-virus-mind.

⁶⁴ Dawkins, *The Selfish Gene*, 245. ⁶⁵ Dennett, *Breaking the Spell*, 4.

rational–moral–social creatures capable of transcending their biology and developing an awareness of him.⁶⁶

Religious Accounts of Biology

How should we think about the various evolutionary explanations of religion? Although they fall under the rubric of science, they vary widely in their degree of empirical grounding, some citing experiments performed and others reflecting tacit worldview assumptions. Currently, in the scientific study of religion, disagreements among theories are obvious, such that they cannot all be true. Further, available scientific explanations currently emanate from at least three theoretical frameworks, one holding that biology is fundamental, another that it is a by-product, and still another that it has been superseded by culture. It is not just theories of religion that are diverse; religions themselves are complex and multifaceted, involving beliefs, rituals, experiences, emotions, life practices, and social interactions that are hard to bring under a single comprehensive theory. Should science focus largely on seemingly universal religious beliefs – or should it engage the particularities of individual religions? Greater clarity is yet to come as CSR seeks to settle these and other questions.

What is clear is that the search for causal explanations of religion has found new conceptual resources within several theoretical evolutionary frameworks. While officially claiming scientific neutrality about religious beliefs, many thinkers produce explanations of religion that exclude any explanation for the truth and plausibility of religious beliefs. Philosophers Alex Rosenberg and Tamler Somers straightforwardly state that “if our best theory of why people believe P does not require that P is true, then there are no grounds to believe P is true” – a principle that, if correct, justifies using evolutionary explanation to dismiss any rationale for religious belief.⁶⁷ Take theistic belief, for example. Many in the biological study of religion claim that theism is unlikely to be true, given some preferred biological account.

⁶⁶ Peterson takes this position in Peterson and Ruse, *Science, Evolution, and Religion*, 142. See also M. Murray, “Scientific Explanations of Religion and the Justification of Religious Belief,” in Murray and Schloss (eds.), *Believing Primate*, 168–178.

⁶⁷ T. Sommers and A. Rosenberg, “Darwin’s Nihilistic Idea: Evolution and the Meaninglessness of Life,” *Biology & Philosophy*, 18 (2003), 667.

Or, where T is the proposition that theism is true, and B is a particular biological account, the judgment is that $P(T/B)$ is low.

Since many who offer biological accounts of religion hold naturalist worldview commitments, theists raise the possibility that those accounts are influenced by their naturalism. Hence, theists can raise the possibility that the negative assessment of theism is based on N – that is, naturalism – conjoined with B , which is the preferred biological account. If this is the case, then a more accurate symbolic portrayal of the assessment would be as follows:

$$P(T/B \ \& \ N) \text{ is extremely low.}$$

For many theists, the implicit appeal to naturalist background assumptions makes the low probability assessment for theism in the name of science problematic.

Let us briefly switch our emphasis from biological accounts of religion to religious accounts of biology. More specifically, we might ask which worldview – theism or naturalism – makes better sense of existence and the findings of biology itself. In what kind of universe is the science of biology more likely to arise? The theist can point out that theism entails that the cosmos exists by the will of a supremely powerful creator and has order because of his supreme wisdom. The theist can press further, indicating that naturalism implies that the universe exists purely by chance and has the lawlike order it has purely by chance. Since the necessary conditions for science, including biological science, include a rationally ordered world and rational inquirers, the theist can claim that science, including biological science, is much more likely to arise in a theistic universe than in a naturalistic universe. Or, where P is antecedent probability, S is science, T is theism, and N is naturalism, we may formalize the claim as follows:

$$P(S/T) > P(S/N)$$

Likewise, the theist can claim that, given theism, the science of biology is for these same reasons more likely to arise.

Now, disagreements among theoretical frameworks, concrete proposals, and even background philosophical assumptions are not necessarily a bad thing in a relatively new field such as CSR. No doubt, more creative and insightful theoretical and empirical work will be forthcoming. On the philosophical level, all involved must be aware of how worldview perspectives can

influence claims made for the scientific study of religion. To illustrate this point: consider that Wilson states that “theology is not likely to survive” the rational power of scientific materialism, while Plantinga maintains that theological truths provide the only adequate description of the kind of reality in which life, rational thought, and science make sense.⁶⁸ Opposing world-views will always be at odds over religion, which means that the new territory to be charted by scientific advances in the study of religion will in turn be subject to philosophical debate.

⁶⁸ Wilson, *On Human Nature*, 192. Plantinga, *Warrant and Proper Function*, 237.