Explanations of Religion

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Introduction
Every known human culture includes beliefs and behaviors deemed religious. Why are humans this way? This is an empirical question. Scientists are in the business of explaining the origin, persistence, ubiquity, and diversity of religion. While such issues were certainly entertained by early thinkers in the West, they did not receive extended and careful treatment until the late modern and contemporary era. A combination of factors including the knowledge of religious diversity resulting from world exploration and the articulation of explanatorily powerful scientific theories such as those from the evolutionary sciences gave later thinkers an edge on offering testable, naturalistic explanations for religious phenomena. Contemporary scientists continue to improve our understanding of religion with exceptional work coming out of genetics, neurology, cognitive psychology, anthropology, and social psychology/sociology.

But these empirically-grounded explanations of religion raise a great many philosophical questions. Some of these questions concern the nature and success of the explanations themselves. For example, how to explanations from different fields "fit together" and what would count as a good explanation of religion? Other questions concern the implications of such explanations for the truth or rationality of religious belief, the prudence of religious practice, or the metaphysical theories of human or divine nature. This entry surveys both the empirical work on religion and also the philosophical issues generated by this work. With the exception of the sections on textbooks and anthologies, all entries are book-length monographs or articles. Criteria for inclusion on the list include both the influence of the work and its accessibility to non-experts.

General Overviews
The classic text that surveys *historical* theories of religion in clear, contemporary language is Pals 2014. Hinde 1999 provides a clear overview of the main component of religion (belief, behavior, moral code) and scientific explanations for each. Barrett 2011 presents a non-technical overview of cognitive science in general and cognitive science of religion (CSR) in particular. Jones 2016 offers a brief overview of key findings in CSR and an extended argument that explanations from CSR are incomplete. De Cruz and De Smedt 2015 surveys the strength of various natural theological arguments for God, given the findings of CSR.

Barrett, Justin. *Cognitive Science, Religion, and Theology: From Human Minds to Divine Minds*. West Conshohoken, PA: Templeton Press, 2011.
 A clear exposition of the field of cognitive science, including its basic conceptual repertoire, methodology, and findings. Barrett offers a detailed presentation of the non-reflective beliefs that humans naturally form about the world, other humans, and gods. The book closes with several

opinionated discussions of the philosophical implications of the findings of CSR for religious belief, largely siding with epistemologists like Thomas Reid who argue that natural beliefs are epistemically innocent until proven guilty.

De Cruz, Helen, and Johan De Smedt. *A Natural History of Natural Theology*. Cambridge, Massachusetts: MIT Press, 2015.
> An application of the findings of cognitive science of religion (CSR) to classical arguments for the existence of God, with chapters on the teleological argument, the cosmological argument, the moral argument, the aesthetic argument, and the argument from miracles. The core of the book addresses the philosophical implications of CSR as it applies to the reliability of intuitions undergirding arguments in natural theology and an evaluation of various evolutionary debunking strategies.

Hinde, Robert. *Why Gods Persist: A Scientific Approach to Religion*. New York, NY: Routledge, 1999.
> Focused on the question of why religion persists in the contemporary world and offers an answer based in evolutionary biology and cognitive science. Hinde thinks of religions as primarily systems of beliefs, rituals, and moral codes, and the book has multiple chapters on each facet.

Jones, James W. *Can Science Explain Religion? The Cognitive Science Debate*. Oxford: Oxford University Press, 2016.
> A brief overview of contemporary, cognitive explanations of religion and an argument that the empirical data does not support a physicalist, reductionist account of religion. Jones concludes that no comprehensive explanation of religion is available, and so contemporary theories have no untoward philosophical implications for religion.

Pals, Daniel L. *Nine Theories of Religion*. 3d ed. Oxford: Oxford University Press, 2014.
> A clearly-written, second-person description of nine of the most influential, historical attempts to explain religion with chapters on Tylor & Frazer, Freud, Durkheim, James, Marx, Weber, Eliade, Evans-Pritchard, and Geertz. Each chapter presents the major themes of each thinker followed by a series of evaluative remarks.

Textbooks
Most available textbooks on religion are designed for a course in world religions. Such books attempt to characterize the beliefs, scriptures, and practices of various world religions, compare/contrast these religions against one another, and illustrate the connections between religions and wider social/historical factors. However, Fuller 2008 surveys *psychological* explanations of religion, Stausberg 2009 provides an admirable survey of contemporary scientific explanations of religion, and Clark 2014 explores the philosophical implications of scientific explanations of origins more generally, including the origin of religion.

Clark, Kelly James. *Religion and the Sciences of Origins*. New York, NY: Palgrave Macmillan, 2014.
> This text is designed for a science and religion course with a focus on the adequacy and implications of scientific accounts of the origin of the universe, life, species, ethics, and religion. Chapter 8 addresses scientific explanations of religion in detail.

Fuller, Andrew R. Psychology and Religion: Classical Theorists and Contemporary Developments, 4th edition, Lanham, MD: Rowman & Littlefield, 2008.
> Provides an overview of both classical and contemporary psychological explanations of religion. Chapters are arranged by theorist rather than type of explanation, with chapters on James, Freud, Jung, Allport, Maslow, Watts, Fromm, and Frankl.

Stausberg, Michael. *Contemporary Theories of Religion: A Critical Companion.* New York, NY: Routledge, 2009.
> A textbook designed to introduce non-specialists to the most important contemporary theories of religion and the authors of these theories. The approach is interdisciplinary and unique: each chapter is written by a contemporary critic who explains and then critiques a different theory of

religion. For example, chapter 10 is on Scott Atran's book *In Gods We Trust*, but is authored by Joseph Bulbulia.

Anthologies
While many of the contemporary scientific explanations of religion are being published *ad hoc* in journal form, a substantial amount of the interplay between empirical scholars and humanities scholars happens in interdisciplinary anthologies. The Schloss & Murray 2009 volume is the earliest and remains one of the best. Whitehouse & Laidlaw 2007, Xygalatas & McCorkle 2014, and Liddle & Shackelford 2016 are scientific anthologies offering clear overviews of broad theoretical approaches to religion. Hornbeck *et alia* 2017 reports new empirical findings. The Dawes & McLaurin 2012, Watts & Turner 2014, and De Cruz & Nichols 2016 volumes include both science and philosophy. Trigg & Barrett 2014 contains only philosophy/theology. Finally, the Van Eyghen *et alia* 2018 volume focuses on philosophical questions about the nature and success of CSR-type explanations and their implications for religion.

Dawes, Greg, and James McLaurin. *A New Science of Religion.* New York, NY: Routledge, 2012.
>   A collection of essays from both scientists and humanists. The essays are grouped into three sub-sections: The Study of Religion (Dawes & McLaurin, Tremlin, Bulbulia & Reddish, Jong), Explanatory Strategies (Whitehouse, Bulbulia *et alia*, Smith & Sankey), and Philosophical Implications (Wilkins & Griffiths, Pidgen, Nola, Wood).

De Cruz, Helen and Ryan Nichols. *Advances in Religion, Cognitive Science, and Experimental Philosophy.* London: Bloosmbury Academic, 2016.
>   This collection opens with a helpful introduction on CSR and includes papers advancing both empirical/explanatory themes and conceptual themes. Examples of the former include particular explanations of religious phenomena (Hodge, Legare *et alia*, Purzycki, White), while examples of the latter include discussions of the philosophical implications of such explanations (Clark, Marsh & Marsh, Teehan, Wilkins).

Hornbeck, Ryan, Justin Barrett, and Madeleine Kang. *Religious Cognition in China: "Homo Religiosus" and the Dragon.* New York, NY: Springer, 2017.
>   This volume consists solely of papers reporting the results of a series of empirical studies conducted in China specifically to test the degree to which religious thinking is natural as opposed to cultural. It was designed to fill an evidential gap since much of the work in CSR had been done in Western, democratic, historically Christian populations.

Liddle, James and Todd Shackelford. *The Oxford Handbook of Evolutionary Psychology and Religion.* Oxford: Oxford University Press, 2016.
>   This is an excellent collection of commissioned essays from top scholars in the field, where each scholar sets out and defends a particular evolutionary explanation for some feature of religion. It is aimed at the general reader and provides a useful survey of the many different evolutionary and cognitive accounts of religion currently on offer.

Schloss, Jeffrey, and Michael J. Murray. *The Believing Primate: Scientific, Philosophical, and Theological Reflections on the Origin of Religion.* Oxford: Oxford University Press, 2009.
>   The earliest collection to bring together scientists and humanists both interested in religion. Topics include surveys of various contemporary explanations of religion (Barrett, Bloom, Bulbulia, Johnson & Bering, Wilson), the success of these explanations (Haught, Murray & Goldberg, Plantinga, Richerson & Newson, Smith, Taliaferro), and the philosophical or theological implications of the explanations (Murray, van Inwagen).

Trigg, Roger, and Justin Barrett. *The Roots of Religion: Exploring the Cognitive Science of Religion.* Surrey, UK: Ashgate Publishing, 2014.
>   A collection of essays unified the application of philosophical insights to clarify both the nature and implications of contemporary explanations of religion provided by CSR. A helpful introduction on CSR is followed by essays that offer conceptual clarification (Audi, Horst, Visala, Wood) and discussions of philosophical implications (Clark & Rabinowitz, Marsh, Mawson, Teehan, Thurow).

Van Eyghen, Hans Rik Peels, Gijsbert van den Brink. *New Developments in the Cognitive Science of Religion: the Rationality of Religious Belief*. London: Springer 2018.
>A collection of ten essays focused either on the nature or success of CSR-type explanations of religion (Mantovani, Oviedo, Scozik, Visala, White) or the implications of such explanations for the epistemology of religion (Braddock, McBrayer, Nola, Wilkins) or theology (van den Brink, *et alia*).

Watts, Fraser, and Leon Turner. *Evolution, Religion, and Cognitive Science: Critical & Constructive Essays*. Oxford: Oxford University Press, 2014.
>A collection of essays from both scientists and humanists. The most important essays offer overviews or new contributions to scientific explanations of religion (Bainbridge, Newson & Richerson, Purzycki, Pyysiainen), meta-disciplinary claims about the methods and limits of CSR (Jenkins, Turner, Watts), and discussions of the philosophical implications of contemporary explanations of religion (Ruse, Visala).

Whitehouse, Harvey, and James Laidlaw. *Religion, Anthropology, and Cognitive Science.* Durham, North Carolina: Carolina Academic Press, 2007.
>This collection begins with a detailed introduction to the anthropology of religion, followed by clear chapters written by relevant experts who give non-technical introductions to prominent theories of religion.

Xygalatas, Dimitris, and William McCorkle, Jr. *Mental Culture: Classical Social Theory and the Cognitive Science of Religion*. New York, NY: Routledge, 2014.
>A collection of essays written by leading contemporary scientists and theoreticians with a common aim: to illustrate the connection between contemporary theories of religion and historical theories of religion. The result is a series of essays readable by non-specialists that trace current theories of religion to their historical roots.

Historical Explanations of Religion
Aside from snippets from Xenophanes and others, the history of western intellectual thought doesn't include systematic explanations of religion until the late modern period. Hume 1996, Darwin 2004 and Freud 1989 offer by-product accounts of religion whereas Durkheim 2001 and Marx & Engels 2008 offer functionalist accounts. Frazer 1994 situates religion in an evolutionary progression. James 2012 focuses almost entirely on religious experiences.

Darwin, Charles. *The Descent of Man, and Selection in Relation to Sex*. London: Penguin Books, 2004.
>Originally published in 1871, this work contains almost all of Darwin's proto-evolutionary psychology, including his views on religion. He argues that while we are designed to naturally form beliefs about agents in our environment (e.g. the famous story of his dog and the parasol), but we only arrive at concepts like that of God after years of cultural influence.

Durkheim, Emile. *The Elemental Forms of Religious Life.* Translated by Carol Cosman. Oxford: Oxford University Press, 2001.
>A contemporary translation of Durkheim's 1912 manifesto on religion. The book critiques both the animist and naturist views of religion in favor of the totemism view in which human attachment to specific, iconic living things transforms these things into sacred objects (i.e. totems) which bind social groups into a cohesive functional unit.

Frazer, James George. *The Golden Bough*. Abridged by Robert Fraser. Oxford: Oxford University Press, 1994.
>Frazer first published his so-called magic theory of religion in 1890, and he gradually expanded it to include 12 volumes by 1915. This contemporary abridgement presents the core argument that religion is an evolutionary step towards the control of nature. Primitive man first tries to control nature through magic, and when that failed, he turned to pleading with supernatural forces through religion. As religion fails, humans turn to the promise of science.

Freud, Sigmund. *The Future of an Illusion.* Edited by James Strachey. New York, NY: W.W. Norton & Co., 1989.
> Freud argues that religious beliefs are obviously false but held out of a sort of universal neurosis. Overwhelmed with the existential dangers of life on earth and hampered by the control of social groups, we project a father figure who is able to compensate for our suffering and reward our pro-social behavior. He closes the book with a speculation that humans can survive into the future without this illusion so long as secular morality is secure.

Hume, David. "The Natural History of Religion," in *David Hume: Writings on Religion.* Edited by Antony Flew 107-182. Peru, IL: Open Court Publishing 1996.
> Hume represents perhaps the first modern attempt to explain religion in terms of a cognitive predisposition to anthropomorphize. He argues that humans naturally think of other objects in the world as like ourselves, and this leads us to posit the existence of gods and spirits. These religious entities then go through a process of cultural evolution in which primitive, polytheistic religions slowly give way to various forms of monotheism.

James, William. *The Varieties of Religious Experience.* Oxford: Oxford University Press, 2012.
> This work represents James' 1901 Gifford lectures in which he presents conclusions drawn from his meticulous catalog of subjective reports of mystical experiences. He argues that mystical experiences are widespread, ineffable, and subjectively convincing as encounters of ultimate reality. Organized religions can be traced back to the mystical experiences of their progenitors.

Marx, Karl, and Friedrich Engels. *Karl Marx and Friedrich Engels on Religion.* Mineola, NY: Dover Publications, 2008.
> Marx offers a functionalist account of religion as an effect of an underlying economic cause: inequality of wealth. This inequality gives rise to class struggles in which the economic elite construct various ideologies to control the masses. Religion is one such ideology—the opium of the people. It's a complicated ruse designed to distract the economically suppressed from their desperate situation.

Contemporary Explanations of Religion

Contemporary explanations of religion are almost always discipline or level-specific and characterized as partial explanations of religion. The explanations can be roughly but usefully characterized as explanations at the genetic or neurological level, the cognitive level, the evolutionary level, or the social/cultural level. Obviously these categories are not distinct—an evolutionary explanation may posit a cognitive module as a proximate cause, and the cognitivist may posit a neurological feature as the underlying structure giving rise to the cognitive disposition. Still, this highly general categorization helps to frame most of the important contemporary work on various explanations of religion.

<u>Genetic or Neurological Explanations of Religion</u>

Some religious phenomena might be explained by the genetic or neurological structure of human beings. These fields focus almost exclusively on religious or mystical experiences instead of other religious phenomena like belief or practice. Hamer 2004 offers a genetic account of religious experiences. Newberg & Waldman 2006 offers a non-technical introduction to the neurological study of religion and religious experience. D'Aquili & Newberg 1999, Newberg *et alia* 2001, and Wildman 2011 offer particular neurological explanations for religious experience and present evidence for the theories in question. In particular, both Cristofori et alia 2016 and McNamara 2009 provide evidence connecting mystical experiences with the brain's executive control center. Harris et alia 2009 identifies the neural substrate of religious beliefs as opposed to ordinary beliefs, and Inzlicht et alia 2009 shows a correlation between religious belief and the neural bases of stress. Taves 2011 is critical of earlier explanations of religion and religious experience and offers a pluralistic approach to understanding the importance of religious experiences in the overall explanation of religion.

Cristofori, Irene, and Joseph Bulbulia, John H. Shaver, Marc Wilson, Frank Krueger, and Jordan Grafman. "Neural Correlates of Mystical Experience," *Neuropsychologia* 80:8, pp. 212-220.

Using data on Vietnam vets who suffered head trauma, this piece shows a correlation between damage to the executive control centers in the brain and mystical experiences.

D'Aquili, Eugene, and Andrew B. Newberg. *The Mystical Mind: Probing the Biology of Religious Experience.* Minneapolis, MN: Fortress Press, 1999.
One of the first books in what's come to be known as 'neurotheology'. The authors explain what happens in the brain during mystical experiences and offer a theory about how these experiences get translated into religious beliefs and practices. Chapter 8 offers a particular explanation of religion in terms of two cognitive dispositions: a predisposition to search for causes and a potential for mystical experiences.

Hamer, Dean. *The God Gene: How Faith is Hardwired into our Genes.* New York, NY: Anchor Books, 2004
A popular-culture work on the genetic basis for religious experiences. Hamer claims that the self-transcendent mental states associated with religious experiences co-vary with a single gene called VMAT-2. The presence of this gene can be explained in evolutionary terms by conferring a selective advantage in terms of optimistic and selfless thinking.

Harris, Sam, and Jonas T. Kaplan, Ashley Curiel, Susan Y. Bookheimer, Marco Iacoboni, and Mark S. Cohen. "The Neural Correlates of Religious and Nonreligious Belief," *PLoS ONE* 4:10, 2009.
A functional MRI study reveals a correlation between ordinary beliefs and the part of the brain associated with recall on the one hand, and a correlation between religious beliefs and the parts of the brain associated with emotion, self-representation, and conflict on the other.

Inzlicht, Michael, and Ian McGregor, Jacob B. Hirsh, and Kyle Nash. "Neural Markers of Religious Conviction," *Psychological Science* 203:3, pp. 385-392.
Reports an experiment that ran EEG tests on subjects as they performed a difficult task. Compared to non-religious believers, religious believers experienced less stress and anxiety in response to mistakes in the task. The author's conclusion is that religion is a buffer against anxiety and mistake-induced stress.

McNamara, Patrick. *The Neuroscience of Religious Experience.* 2009. Cambridge University Press.
A focused exploration of the brain's chemistry and location-specific neurology of religious experiences and thoughts. McNamara provides an ultimate explanation for the brain's religious disposition in terms of selective advantage: religious beliefs, experiences, and rituals help to "de-center" oneself and create a robust executive self who can monitor unhealthy impulses.

Newberg, Andrew, and, Mark Waldman. *Born to Believe: God, Science, and the Origin of Ordinary and Extraordinary Beliefs.* New York, NY: Free Press. 2006.
A popular-culture book exploring how humans form beliefs, with an emphasis on brain scan evidence for extraordinary beliefs like religious and moral beliefs. The authors provide a very broad overview of how brains process information and arrive at memories or beliefs in general, and how such biases, processes, and structures shape religious beliefs in particular. The book closes with practical advice about human bias and ways to avoid them in our search for what is real.

Newberg, Andrew Eugene D'Aquili, and Vince Rause. *Why God Won't Go Away: Brain Science and the Biology of Belief.* New York, NY: Ballantine Books, 2001.
Argues that mystical experiences are explainable at the neurological level in ways that avoid appeals to mental deficiencies like psychosis and that all religions are traceable back to such experiences (chapter 7). The book closes with an argument for the philosophical claim that it's reasonable to trust these experiences as reliable indicators of a deeper reality, despite the fact that science cannot verify this (chapter 8).

Taves, Ann. *Religious Experience Reconsidered: A Building-Block Approach to the Study of Religion and Other Special Things.* Princeton, NJ: Princeton University Press, 2011.

Argues that historical, single-discipline explanations of religion that appeal to religious experiences are misguided. Taves argues for a multi-disciplinary approach to religion that will shed light on why humans find certain experiences meaningful or special and how these special events lead to a religious life.

Wildman, Wesley. *Religious and Spiritual Experiences.* Cambridge University Press, 2011.
This wide-ranging text characterizes the nature of religious and spiritual experiences (RSEs), describes their neurological, phenomenological, and evolutionary bases, and draws a taxonomy of RSEs. Argues that a special subclass of RSEs (so-called 'intense RSEs') are not reliable enough to ground doctrinal, propositional claims, though they are valuable vehicles for self-discovery, value-discovery, and the promotion of various social goods.

Cognitive Explanations of Religious Cognition
Cognitive explanations of religion come largely from the cognitive science of religion (CSR) and locate the proximate cause of religious belief and behavior in particular dispositions of the human mind. Much of the contemporary work on religion comes from this domain, and so this section surveys CSR explanations of religious *cognition* (like intuitions, thoughts, beliefs, etc.), and the next considers CSR explanations of religious *behavior*. Tremlin 2006 offers a clear and accessible overview of cognitive science as it applies to the study of religion. Both Barrett 2004 and McCauley 2011 focus on the thesis that religious belief is natural for humans. Boyer 2001 and Bering 2011 offer byproduct accounts where religious beliefs are the byproducts of normally adaptive cognitive modules. A particularly important example of this latter strategy relies on the idea that humans consistently over-estimate the presence of persons or agents in their environment, and that this hyperactivity can lead to religious belief in supernatural agents (Guthrie 1993, Atran 2002, Pyysiäinen 2009). Slone 2004 and Teehan 2010 both apply the lessons of CSR to the development of theology and particular religions.

Atran, Scott. *In Gods We Trust: The Evolutionary Landscape of Religion.* Oxford: Oxford University Press, 2002.
One of the earliest attempts to blend cognitive by-product views of religion with group-level adaptationist explanations of religion. Belief in religious agents arises initially because of a hyperactive agency detection device (HADD) and then functions to suppress selfish behavior and boost group cooperation against other groups. Furthermore, Atran argues that so-called "mind-blind" theories of religion like that from the gene's point of view lack explanatory power.

Barrett, Justin. *Why Would Anyone Believe in God?* Lanham, MD: AltaMira Press, 2004.
A popular-culture overview of the findings of CSR at the turn of the century. Barrett presents an even-handed case for the thesis that religious belief is natural. The book includes chapters on the concept of belief, minimally counterintuitive concepts, hyper-active agency detection, theory of mind in childhood development, the relation between action and belief, and atheism/non-belief.

Bering, Jesse. *The Belief Instinct: The Psychology of Souls, Destiny, and the Meaning of Life.* New York, NY: W.W. Norton & Company, 2011.
Argues that religious thinking is largely attributable to two innate features of the human mind: a theory of mind module and a teleo-functional bias. The former gives rise to beliefs in immaterial minds and life after death, whereas the latter disposes us to look for meaning and patterns everywhere, even when they don't exist. Bering argues that even though these ways of thinking are adaptive, they lead to false beliefs when it comes to religion.

Boyer, Pascal. *Religion Explained: The Evolutionary Origins of Religious Thought.* New York, NY: Basic Books, 2001.
Argues first that everyday people's justifications for their religious beliefs are confabulations and second that the true explanations are those that identify the cognitive equipment that gives rise to religious thoughts. As for the latter, Boyer argues that religious thoughts arise naturally as by-products from mental modules selected for other purposes. We look for causes and purposes for the events around us, and entities that are minimally counterintuitive, full-access, strategic agents are favored *explanans*. This is where religion begins.

Guthrie, Stewart. *Faces in the Clouds: A New Theory of Religion.* Oxford: Oxford University Press, 1993.
> The first contemporary monograph in CSR to develop and test the theory that religion is due largely to natural human tendencies to anthropomorphize, i.e. see agents everywhere and interpret ambiguous signals as evidence of other persons. The account is supplemented with examples of anthropomorphism in perception, the arts, philosophy, science, and religion.

McCauley, Robert N. *Why Religion is Natural and Science is Not.* Oxford: Oxford University Press, 2011.
> Argues that religious thinking is natural whereas scientific thinking is not. McCauley argues that all intuitive cognition is either maturationally natural ("hardwired") or practiced natural. Given these distinctions, religion is maturationally natural because it involves intuitive products (e.g. minimally counterintuitive concepts, agents, emotional rituals) and intuitive processes (e.g. contamination control, theory of mind). However, science is not maturationally natural because it involves counterintuitive results and counterintuitive methodology.

Pyysiäinen, Ilkka. *Supernatural Agents: Why We Believe in Souls, Gods, and Buddhas*. Oxford: Oxford University Press, 2009.
> Presents an account of human representation of agency with a focus on the origin and content of beliefs about supernatural or extraordinary agency. The author's conclusion is that it is natural and easy for humans to believe in the existence of other agents, and this produces belief in supernatural or religious entities as a byproduct.

Slone, Jason. *Theological Incorrectness: Why Religious People Believe What They Shouldn't.* Oxford: Oxford University Press, 2004.
> Argues that human's natural cognitive biases lead to religious beliefs with certain content, even when that content is not sanctioned by the official religious leaders. In this way, the human environment has less influence over religion than previously suspected. Instead, it is human nature that drives much of our theological thinking.

Teehan, John. *In the Name of God: The Evolutionary Origins of Religious Ethics and Violence.* Malden, MA: Wiley-Blackwell, 2010.
> Interprets religion as a cultural byproduct in the sense that religious traditions are cultural expressions of universal cognitive dispositions that were adaptive for non-religious reasons. This fairly general CSR-type explanation is bolstered with careful examinations of the contents and practices of two specific religions: Judaism and Christianity. The last chapter addresses the philosophical implications of this explanation of religion.

Tremlin, Todd. *Minds and Gods: The Cognitive Foundations of Religion.* Oxford: Oxford University Press, 2006.
> An exceptionally clear treatment of the methods and findings of cognitive science in general and CSR in particular. Tremlin brings together the evidence for the modularity of the mind and the outputs of the modules relevant for religious cognition. His conclusion is that the human mind naturally thinks in religious ways and the origin and content of religious beliefs is often traceable to this natural human tendency.

Cognitive Explanations of Religious Behavior

Cognitive explanations of religion might focus on the development of religious behavior (e.g. ritual) rather than religious cognition (e.g. belief). This section surveys some of the most important work in this area. Lawson & McCauley 1990 and McCauley & Lawson 2002 are the classic texts developing the cognitive components behind religious behavior, especially religious ritual. Johnson et alia 2013 connects cognitive preferences for certain God concepts with behavioral outputs, and Rossano 2010 develops the emotional and ritualistic behavioral side of religion as it relates to group adaptation accounts of religion.

Johnson, Kathryn A., and Yexin Jessica Li, Adam Cohen, and Morris Alan Okun. "Friends in High Places: The Influence of Authoritarian and Benevolent God-Concepts on Social Attitudes and Behaviors," *Psychology of Religion and Spirituality* 15-22, 2013.

Reports experimental data suggesting that concept of an authoritarian/stern God is associated with increased out-group animosity, aggression, and an unwillingness to forgive whereas the concept of a benevolent God is associated with increased out-group cooperation, pro-social behavior, and a willingness to forgive.

Lawson, E. Thomas, and Robert N. McCauley. *Rethinking Religion: Connecting Cognition and Culture.* Cambridge: Cambridge University Press, 1990.
One of the very first cognitive accounts of religious action (as opposed to religious belief). Lawson and McCauley offer an analogy between linguistic systems and religious systems and argue that the cognitive underpinnings of both are key to understanding the origin and extent of religious systems in general and religious rituals in particular.

McCauley, Robert N. and E. Thomas Lawson. *Bringing Ritual to Mind: Psychological Foundations of Cultural Forms.* Cambridge: Cambridge University Press, 2002.
An account of the evolution and functional role of religious rituals with an eye toward the cognitive underpinnings of successful rituals. The authors argue that rituals that survive across time are those that are frequently repeated (e.g. weekly Eucharist) or have high emotional stimulation (e.g. a revival meeting).

Rossano, Matt. *Supernatural Selection: How Religion Evolved.* Oxford: Oxford University Press, 2010.
An adaptive account claiming that religion evolved as the first major system of practices and moral imperatives linking humans to one another. In this co-evolutionary approach, religion functions to allow humans to cooperate and make sense out of the world around them, especially in the face of environmental threats. This book largely focuses on the ritual and emotive aspects of religion as compared to the cognitive components.

Evolutionary Explanations
Evolutionary accounts of religion take their cue from the universality of religion and attempt to craft a plausible account of this ubiquity. Slingerland & Bulbulia 2011 offers a clear overview of evolutionary approaches to religion and defends the approach against standard objections. Some evolutionary accounts propose that religion enjoys high-fidelity transmission independent of adaptive value for individuals (e.g., Dennett 2006 defends a meme theory of religion). Others argue that religion has (or had at one time) adaptive consequences for individuals (Steadman & Palmer 2010, Johnson 2016), and/or groups (Wilson 2002, Wilson 2004, Rossano 2010, Bulbulia & Sosis 2011, Norenzayan 2013). Other accounts are spandrel or by-product accounts in which religion is not adaptive itself but is a by-product of some other adaptive feature (Kirkpatrick 2005). Finally, some accounts of religion think of religion as a kind of genetic drift—a fluke of evolution that persists because it has no deleterious effect on survival.

Bulbulia, Joseph, and Richard Sosis. "Signaling Theory and the Evolution of Religious Cooperation." *Religion* 41 (2011): 363-88.
An introduction to signaling theories in evolution with an application of signaling theories to the evolution of religion. The idea is that religion can function as a reliable signal for in-group membership, something that is important both to enhance cooperation and eliminate free-riders. The authors survey the current evidence supporting a signaling theory of religion.

Dennett, Daniel. *Breaking the Spell.* New York, NY: Penguin Books, 2006.
An evolutionary account of religion on which the adaptive benefits are conferred to the religious ideas themselves. In that sense, this is a memetic account of religion: religious ideas are parasites that human hosts struggle to overcome.

Johnson, Dominic. *God is Watching You: How the Fear of God Makes us Human.* Oxford: Oxford University Press, 2016.
Offers a co-evolutionary explanation of religion in which the fear of an all-seeing, wrathful God is adaptive both for individuals and for communities. Johnson argues that this disposition is a universal human phenomenon and is reinforced at the cultural level by successful religions that market stories of divine punishment and reward.

Kirkpatrick, Lee. *Attachment, Evolution, and the Psychology of Religion*. New York, NY: The Guilford Press, 2005.

> Argues that religious belief and behavior are spandrels, i.e. byproducts of several different cognitive mechanisms that were adaptive in their own right. Kirkpatrick takes uses attachment theory (models of human responses to perceived threats) as his main tool to investigate the origins and evolution of religions.

Norenzayan, Ara. *Big Gods: How Religion Transformed Cooperation and Conflict*. Princeton, NJ: Princeton University Press, 2013.

> A co-evolutionary explanation for the content and perseverance of religion. Drawing on work from social psychology, Norenzayan argues that monitoring humans promotes pro-social behavior. This picture can be extended to show that believing in the existence of omniscient, powerful, morally-interested agents (i.e. "big gods") would promote intragroup cooperation and intergroup conflict. The role played by big gods can be supplanted by effective governments.

Slingerland, Edward, and Joseph Bulbulia. "Introductory Essay: Evolutionary Science and the Study of Religion." *Religion*41 (2011): 307-28.

> Offers a clear and instructive overview to the evolutionary framework for studying and explaining religion. The article defends evolutionary approaches to religion against eight common objections from humanists and others that evolutionary accounts of religion must be reductive, are just-so stories, etc.

Sosis, Richard. "Religion and Intragroup Cooperation: Preliminary Results of a Comparative Analysis of Utopian Communities." *Cross-Cultural Research*34(2000): 70-87.

> A ground-breaking article offering clear evidence for the hypothesis that religion binds individuals together in a way that forms long-lasting and constructive cooperation. The paper presents a study comparing secular utopian communes with religious utopian communes and showing conclusively that the latter exhibit more success and longevity.

Steadman, Lyle B., and Palmer, Craig. *Supernatural and Natural Selection: Religion and Evolutionary Success*. New York, NY: Routledge, 2010.

> A co-evolutionary account of religion claiming that religion is adaptive because it explicitly encourages both cooperation and reproduction. Religious belief is relevant for human evolution only insofar as it translates into religious behavior, and the religious behaviors that are relevant are those that encourage large families and obedience to the religious leaders.

Wilson, David Sloan. *Darwin's Cathedral: Evolution, Religion, and the Nature of Society.* Chicago, IL: The University of Chicago Press, 2002.

> Defends a functionalist explanation of religion where religion is an adaptation at the group level where it provides both psychological and material benefits for the members of the religious group. The theory is illustrated with particular case studies, including Judaism, the water temple system in Bali, the early Christian church's focus on forgiveness, and Calvinism in reformation Europe.

Wilson, E. O. *On Human Nature, Revised Edition*. Cambridge, MA: Harvard University Press, 2004

> The original, 1978 edition was perhaps the first influential contemporary account of religion. Wilson offers a sociobiological explanation in which religious practice confers a survival advantage because of group signaling and enhanced inter-group cooperation.

Social or Cultural Explanations

This final category includes theories that appeal largely to environmental or social/cultural features to explain the origin, persistence, ubiquity, diversity/similarity, or content of religion. These are sometimes dubbed "co-evolutionary" explanations since natural selection can still occur at the cultural level as reproductive success can still drive the success or failure of cultural patterns. For example, see Richerson & Boyd 2005 for an overview of the culture's impact on human evolution in general (though not religion in particular). Bellah 2011 and Stark 2007 are useful overviews of the cultural evolution of religions across

time, from prehistoric religious practice to the contemporary major world religions. Wright 2009 offers a comprehensive explanation for religion that draws largely on environmental and cultural factors. Sosis 2000 provides conclusive evidence for the benefits of religion for cultural groups, Rizzuto 1981 highlights the role of the social environment in shaping one's concept of God, and Whitehouse 2004 offers a prominent account of the transmission of religious ideas in cultural settings. Both Luhrman 2012 and Xygalatas 2014 offer ethnographies of different religious groups with a focus on how certain religious practices and rituals help groups solve important problems.

Bellah, Robert N. *Religion in Human Evolution: From the Paleolithic to the Axial Age.* Cambridge, MA: Harvard University Press, 2011.
> A comprehensive sociological overview of the cultural evolution of the world's major religions, starting with tribal religions and moving through archaic religions to the great religions of the axial age. The book is notable both for its scope but also for its blending of a scientific, evolutionary approach to religion with the more traditional humanistic accounts of religion.

Luhrman, T.M. *When God Talks Back: Understanding the American Evangelical Relationship with God.* New York, NY: Vintage Books, 2012.
> An anthropological investigation into the problem of presence in contemporary evangelical Christianity, with a focus on Vineyard churches. The problem of presence is coming to believe in an unseen God and coming to feel that this God acts in your life despite a lack of external evidence. The solution is to find God "inside", and successful churches cultivate certain techniques of prayer, meditation, reading, and focus to make God come alive to congregants.

Richerson, Peter J. and Robert Boyd. *Not by Genes Alone: How Culture Transformed Human Evolution.* Chicago: University of Chicago Press, 2005.
> Offers a clear and compelling case for co-evolution: natural selection in humans is the result of the interplay between human culture and human biology. Richerson and Boyd's case does not address religion specifically, though religious phenomena feature as examples of cultural evolution in several chapters.

Rizzuto, Ana-Maria. *The Birth of the Living God: A Psychoanalytic Study*, Chicago: University of Chicago Press, 1981.
> Against the diagnosis of the psychoanalytic tradition, Rizzuto argues that a person's concept of God is heavily influenced by social and cultural pressures and evolve over the course of a person's life.

Stark, Rodney. *Discovering God: The Origins of the Great Religions and the Evolution of Belief.* New York, NY: Harper One, 2007.
> A sociocultural history of the world's major religious movements from primitive groups through temple religions, Roman religions, Judaism, Indian religions, Chinese religions, Christianity, and Islam. The material is presented with an eye towards two themes: the evolution of religious systems over time and the possibility that any given religious system is a discovery of the divine rather than merely a human creation. The book closes with some controversial claims about which religions are genuine discoveries and which are not.

Whitehouse, Harvey. *Modes of Religiosity: A Cognitive Theory of Religious Transmission.* Walnut Creek, California: AltaMira Press, 2004.
> Argues that all religious transmission occurs in either the imagistic or doctrinal mode. In the imagistic mode, religion is passed from one human to another via elaborate rituals, emotional experiences, etc. In the doctrinal mode, religion is passed by explicit education, memorization of texts, etc.

Wright, Robert. *The Evolution of God.* New York, NY: Little, Brown & Company, 2009.
> A history of religion from shamanism to monotheism (with emphasis on Christianity and Islam) combined with a complex explanation of religion that draws from elements of human nature but largely on socio-cultural factors like politics, economics, and technology.

Xygalatas, Dimitris. *The Burning Saints: Cognition and Culture in the Fire-walking Rituals of the Anastenaria*. New York, NY: Routledge, 2014.

> A multi-level analysis of a particular religious ritual—fire-walking—among members of a small, sub-group of Christians living in northern Greece. While framed as a standard ethnology, Xygalatas appeals both to environmental/contextual elements as well as cognitive elements to provide a unified explanation of this radical religious behavior.

Philosophical Issues

Contemporary explanations of religion raise philosophical concerns in at least three domains. First, there are questions in the philosophy of science about the nature and success of explanations of religion. Second, there are questions in epistemology about the implications of explanations of religion for the truth, rationality, or justification of religious beliefs and practices. Third, there are questions in metaphysics and theology about the implications of explanations of religion for the nature the divine, the nature of humanity, and the relation between the two.

<u>Explanations</u>

There are a number of controversial issues in the explanation of religion. One set of issues concerns the nature of the explanations themselves. For example, Slingerland 2008 argues that such explanations are necessarily reductive whereas Van Slyke 2011 denies this. Another set of issues concerns the nature of elements cited in explanations of religion, including naturalness (Pyysiainen 2012) and intuition (Horst 2014). A second family of issues is normative and focuses on the success of explanations of religion. One way of arguing for the failure of an explanation of religion is to show that it fails to meet certain theoretical constraints. For example, Murray & Moore 2009 and Schloss and Murray 2011 argue that particular explanations of religion fail for these reasons. A second way of arguing for the failure of an explanation of religion is to show that it fails to be evidentially supported. Galen 2012 and Purzycki & Willard 2015 are instances of this second strategy. Finally, Hughes 2017 and Martin & Wiebe 2017 are both anthologies addressing meta-theoretic concerns about the nature and success of empirical explanations of religion.

Galen, Luke. "Does Religious Belief Promote Prosociality? A Critical Examination." *Psychological Bulletin*138 (2012): 876-906.

> Critical meta-analysis of literature about possible links between religiosity and prosociality. Argues that current studies are plagued by both conceptual and methodological problems that render the causal link between religion and pro-social behavior unclear. Hence explanations of religion that rely on a prosocial effect from religious belief are evidentially unsupported.

Horst, Steven. "Whose Intuitions? Which Dualism?" In *Roots of Religion: Exploring the Cognitive Science of Religion.* Edited by Roger Trigg and Justin Barrett, 37-54. New York, NY: Ashgate Publishing Limited, 2014.

> Some scientists explain the origins of religious belief by showing that religious concepts are natural and intuitive. However, other scientists explain the survival of religious beliefs by showing that religious concepts are minimally counterintuitive. But how can they be both natural and counterintuitive? Horst offers a model for how to think about intuition that resolves the apparent paradox.

Hughes, Aaron W. *Theory in a Time of Excess: Beyond Reflection and Explanation in Religious Studies Scholarship.* Sheffield, UK: Equinox, 2017.

> An anthology on the meta-theory of religious studies scholarship with a focus on explanatory theories coming out of the sciences. The book is structured as a dialectic among scholars from different disciplines who advance their own conception of what religious explanations are doing and defend these conceptions from the replies and critiques of the other contributors.

Martin, Luther H., and Donald Wiebe. *Religion Explained? The Cognitive Science of Religion After 25 Years.* New York, NY: Bloosmbury Academic, 2017.

An anthology on the meta-theory of the study of religion with a focus on the cognitive science of religion (CSR). The book includes a dozen new articles by leading scholars in CSR on the history, successes, and failures of CSR's attempt to explain religion.

Murray, Michael, and Lyn Moore. "Costly Signaling and the Origin of Religion." *Journal of Cognition and Culture* 9 (2009): 225-45.
>Reviews the costly signaling theory of religion and offers two critiques. First, there is no persuasive reason to think that honest, non-costly signals would not better do the job of matching up cooperative human partners. Second, there are four conditions that must be met for costly signaling to be a stable strategy, and none of the four are met in the case of religion.

Purzycki, Benjamin, and Aiyana Willard. "MCI Theory: A Critical Discussion." *Religion, Brain & Behavior* 6 (2015): 207-48.
>A meta-analysis of studies on minimally-counterintuitive (MCI) concepts as they relate to religion. The paper argues that the evidence gathered to date does not support the MCI thesis in the way typically thought and that explanations of religion based on MCI are hence evidentially unsupported.

Pyysiäinen, Ilkka. "Religion-Naturally: Religion, Theology, and Science." In *Is Religion Natural?* Edited by Dirk Evers, Michael Fuller, Antje Jackelen, and Taede Smedes, 67-84. London: T&T Clark International, 2012.
>Distinguishes three senses of 'natural' and argues that religion is natural in all three; argues that once properly understood as natural, the disciplinary tension between science and religion is only increased. In particular, the gods of folk-religion become increasingly distant from the deistic gods of academic discourse.

Schloss, Jeff, and Michael Murray. "Evolutionary Accounts of Belief in Supernatural Punishment: A Critical Review." *Religion, Brain & Behavior*, 1 (2011): 46-99.
>Critiques the explanation of religious belief that relies on the idea that belief in big gods is adaptive. They distinguish two versions of supernatural punishment theory: according to the first, belief in big gods is adaptive because it increases group cooperation. According to the second, belief in big gods is adaptive because it decreases the cost associated with bearing the punishment imposed by vigilant group members.

Slingerland, Edward. "Who's Afraid of Reductionism? The Study of Religion in the Age of Cognitive Science." *Journal of the American Academy of Religion* 76 (2008): 375-411.
>Religion is a human practice that results from cognitive and emotive equipment honed by evolutionary processes. Given this, we should accept reductive accounts of religion because they are the only kind of explanation available, and we should keep our natural biases and proclivities in mind as we work on religion in the humanities.

Van Slyke, James A. *The Cognitive Science of Religion*. Burlington, VT: Routledge, 2011.
>A critical overview of the methods and findings of CSR, focused on early results like studies on minimally counterintuitive concepts, theological incorrectness, etc. The book offers a critique from a theological point of view that attempts to deflect the reductivism to naturalism common in many strains of CSR research.

Epistemic Implications
Explanations of religion might have epistemic implications. For example, Clark & Barrett 2011 argues that certain explanations of religion epistemically bolster religious belief. Others argue that explanations of religion debunk religious belief by undercutting either the reasons or the experiences that were thought to provide justification. Both Mason 2010 and Bogardus 2013 offer exceptional surveys of the debunking strategy against religious belief. Wilkins & Griffiths 2013 and Leben 2014 are two particular and powerful examples of the debunking strategy by arguing that religious belief is either not truth-tracking or unreliable, respectively. To the contrary, Barrett & Church 2013, Clark & Rabinowitz 2014, and Jong & Visala 2014 argue that scientific explanations do not show that religious belief is epistemically defective. Finally,

religious belief may be in epistemic trouble given the fact that religious entities do not figure into the best explanation of our religious beliefs. Van Eyghen 2016 introduces this type of argument and Lim 2016 offers one model of response on behalf of religious believers.

Barrett, Justin, and Ian Church. "Should CSR Give Atheists Epistemic Assurance? On Beer-Goggles, BFFs, and Skepticism Regarding Religious Beliefs." *The Monist* 96 (2013): 312-24.
> Compares unreliability at detecting beauty due to beer goggles with unreliability to detect the divine due to CSR-established biases in human cognition. Argues that the analogy isn't apt unless we can confine the skepticism about reliability to the religious context. This has not been done and the straight-forward attempt to do so is self-undermining. Handles problem of religious diversity by noting that the natural deliverances of the human system are general intuitions compatible with most religions.

Bogardus, Tomas. "The Problem of Contingency for Religious Belief." *Faith and Philosophy* 30 (2013): 371-92.
> Reviews 5 variants of explanatory debunking arguments for religious belief: bare counterfactual, unreliable method, safety, accidentality, and symmetry. The paper offers a nice survey of the epistemic principles that one might invoke in a debunking argument. Conclusion is that that all current debunking arguments fail to impact reflective religious belief though some versions will successfully undercut non-reflective religious belief.

Clark, Kelly James, and Justin Barrett. "Reidian Religious Epistemology and the Cognitive Science of Religion." *Journal of the American Academy of Religion* 79 (2011): 639-75.
> Applies recent findings from CSR both to Thomas Reid's common sense epistemology and to contemporary reformed epistemology. Argues that the fact that religious belief is intuitive and natural under a wide-array of circumstances bolsters the epistemic credibility of religious belief and counts as evidence for a *sensus divinitatus*.

Clark, Kelly James, and Dani Rabinowitz. "Knowledge and the Objection to Religious Belief from Cognitive Science." In *Roots of Religion: Exploring the Cognitive Science of Religion*, Edited by Roger Trigg and Justin Barrett, 113-26. New York, NY: Ashgate Publishing Limited. 2014.
> Considers two families of arguments that invoke CSR-type explanations to conclude that religious belief does not amount to knowledge. The article assumes that knowledge is safe belief, and then looks at two strategies for showing that religious belief is unsafe: a counterfactual strategy (which fails because it confuses safety with sensitivity) and an unreliable testimonial chain strategy (which fails because unsafe origins can still have safe terminations).

Leben, Derek. "When Psychology Undermines Beliefs." *Philosophical Psychology* 27 (2014): 328-50.
> Sets out the conditions for a successful debunking argument from psychological explanation to agnosticism about a moral or religious claim. The basic idea is that the target belief must be evidentially based on an intuition which is explained by a psychological mechanism that is not sensitive to the truth of the target belief. Unreliability is established by two matrices: comparison to objective facts and proof of insensitivity.

Lim, Daniel. "Cognitive Science of Religion and Folk Religious Belief." *Zygon* 51 (2016): 949-965.
> Assumes that folk theism is incompatible with certain findings from CSR which reveal naturalistic proximate causes for all religious belief. The paper rejects the standard strategy of making the divine an ultimate rather than proximate cause of religious belief and instead offers a distinction between personal/intentional explanation and naturalistic explanation. On this model, God could be a proximate cause of religious belief in the personal sense of explanation.

Jong, Jonathan, and Aku Visala. "Evolutionary Debunking Arguments Against Theism, Reconsidered." *International Journal for Philosophy of Religion* 76 (2014): 243-58.
> Constructs various types of evolutionary debunking arguments and shows how each fail. In particular, they show that production by an off-track process won't affect probability assessments, though falsehood tracking processes will. In short, if you have evidence for a belief, then it is

justified even if formed by an off-track process. If you don't have evidence for the belief, then it is unjustified regardless of how it was produced.

Mason, Kelby. "Debunking Arguments and the Genealogy of Religion and Morality." *Philosophy Compass* 5 (2010): 770-78.

> Briefly recounts history of natural explanations of religion (Durkheim, Freud, James) and introduces the idea of a truth-mooting genealogy: an explanation for a judgment in which the truth of the judgment plays no role in generating the judgment. Sketches various versions of this debunking argument against both moral and religious belief, and closes by illustrating the impact of these arguments on the cognitive/non-cognitive debate in both fields.

Van Eyghen, Hans. "Two Types of "Explaining Away" Arguments in the Cognitive Science of Religion." *Zygon* 51 (2016): 966-82.

> Disambiguates two families of arguments that start with premises about the explanation of religion from CSR and purport to explain away religion. The first rebuts religious claims by showing them to be incompatible with the scientific findings whereas the second undercuts religious claims by showing that religious entities are explanatorily superfluous.

Wilkins, John S., and Paul E. Griffiths. "Evolutionary Debunking Arguments in Three Domains: Fact, Value, and Religion." In *A New Science of Religion*, Edited by Gregory W. Dawes and James Maclaurin, 133-46. New York, NY: Routledge, 2013.

> One of the best papers debunking religious belief on the basis of evolutionary theory. The paper introduces the concept of a Milvian Bridge: something that connects practical, selective value to truth. Argues that there is a direct Milvian bridge for common sense beliefs and an indirect Milvian Bridge for scientific beliefs. There is no truth-conducive explanation for moral or religious beliefs. Moral beliefs can be saved only if interpreted on non-realisic grounds, but this strategy is implausible for religious belief.

Metaphysical Implications

Explanations of religion might elucidate the importance humans have placed on certain conceptions of the divine or the role of the divine in the natural world. In particular, such explanations might reveal a biological, cognitive, or cultural bias towards some conceptions of the divine over others. For example, Green 2013 and Shults 2014 argue that theistic conceptions of the divine suffer from deep-seated, irrelevant biases. De Cruz 2014 offers a different diagnosis, and Vanio 2016 offers a theology-friendly solution to the purported bias. Finally, explanations of religion call into question the role of the divine in cultivating religious belief. For example, Smedes 2014 argues that current explanations of religion confirm an inborn faculty for the perception of God; Jong, Kavanaugh, and Visala 2015 dispute this. When it comes to religious experiences, Fales 1996 and Wildman 2011 argue supernatural causes of religious experiences are superfluous given the available naturalistic explanations. Gellman 2001 denies this.

De Cruz, Helen. "Cognitive Science of Religion and the Study of Theological Concepts." *Topoi* 33 (2014): 487-97.

> The cultural transmission of religious concepts is undergirded by a bias toward particular sorts of content. In particular, theologically correct concepts are passed along by the same sorts of biases that make folk religious concepts plausible.

Fales, Evan. "Scientific Explanations of Mystical Experiences, Part 1: The Case of St. Teresa," and "Scientific Explanations of Mystical Experiences, Part 2. The Challenge to Theism." 32 (1996): 143-63 and 297-313.

> Presents a clear defense of I.M. Lewis's explanation of mystical experiences and an extended argument that theistic accounts of mystical experiences are incompatible with Lewis' explanation. Concludes that religious experiences are not veridical since religious entities play no causal role in the production of such experiences.

Gellman, Jerome. *Mystical Experience of God: A Philosophical Inquiry*. Aldershot: Ashgate, 2001.

A defense of the genuine nature and epistemic potency of mystical or religious experiences. Chapters four and five respond to the challenge of naturalistic explanations of religion, and the author argues that naturalistic explanations of such experiences are implausible. In particular, the little that is known is compatible with the workings of God.

Green, Adam. "Cognitive Science and the Natural Knowledge of God." *The Monist* 96 (2013): 399-419.
An evaluation of the theological implications of the findings from CSR. Argues that the evidence from CSR suggests that people naturally think about God from a social perspective. This shows that (a) theologians like Aquinas and Calvin are wrong to think of philosophy as human's natural attempt to think about God and (b) natural thinking about God is biased in certain ways given the social lens through which we look at God.

Jong, Jonathan Christopher Kavanaugh, and Aku Visala. "Born Idolators: The Limits of the Philosophical Implications of the Cognitive Science of Religion." *Neue Zeitschrift für Systematische Theologie und Religionsphilosophie* 57 (2015): 244-66.
The recent work coming out of CSR at best explains what a theist will see as idolatrous beliefs about the gods. As such, it is unlikely to have much by way of philosophical implication for theism since it will not go very far towards explaining why anyone is a theist. But it will also not support theism in the way some reformed epistemologists have suggested since a faculty that produces natural idolatrous beliefs is unlikely to be an inborn sense of the divine.

Shultz, F. LeRon. *Theology after the Birth of God: Atheist Conceptions in Cognition and Culture*. New York, NY; Palgrave-MacMillan, 2014.
Reinterprets the standard psychological explanations for the origins of religion in new terminology. In LeRon's terms, humans are cognitively and coalitionally biased toward anthropomorphic promiscuity and sociographic prudery. The author argues that such an explanation reveals deep anthropomorphic biases in our conception of the world which renders standard conceptions of the divine mistaken.

Smedes, Taede. "Emil Brunner Revisited: On the Cognitive Science of Religion, the Imago Dei, and Revelation." *Zygon* 49 (2014): 190-207.
The findings of CSR and similar empirical investigations of religion confirm an embedded, embodied, and enactive process of discerning revelation from God just as various theologians like Emil Brunner have speculated. Thus, current explanations of religion provide confirming evidence of one way that humans are made in the image of God.

Vanio, Olli-Pekka. "What Does Theology Have to do with Religion? Dual-process Accounts, CSR, and a Curious Blind Spot in Contemporary Theorizing." *Open Theology* 2 (2016): 106-12.
Assuming a dual-processing model of cognition (thinking fast and slow--type 1 and type 2), this piece argues that current CSR research attributes religious beliefs as outputs of type 1, and then notes two problems: (a) type 1 thinking isn't always irrational, and (b) we often accept type 2 "corrections" of type 1 outputs as getting us to the truth; if the latter is so, then we should trust theology to correct folk religion.

Wildman, Wesley. *Religious and Spiritual Experiences.* Cambridge: Cambridge University Press, 2011.
Characterizes the nature of religious and spiritual experiences (RSEs), describes both their neurological, phenomenological, and evolutionary bases, and draws a taxonomy of RSEs. Argues both that intense RSEs are not reliable enough to ground doctrinal, propositional claims and they are not supernatural interventions in the world but are useful vehicles for self-discovery, value-discovery, and the promotion of various social goods.