

Religious Conversion and Cognitive Neuroscience

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The Oxford Handbook of Religious Conversion

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Abstract and Keywords

This chapter describes several areas of research in cognitive neuroscience that have potentially great relevance to the study of religious conversion. These areas include the nature of human brain development, neuroplasticity, temporal lobe epilepsy, visual processing, and meditation. The chapter also addresses the conceptual and methodological challenges facing anyone who tries to identify meaningful connections between brain functioning and religious conversion. The overall aim is to map out the most likely future paths that researchers will follow in seeking a better understanding of how changes in brain/mind functioning correlate with changes in a person's religious and/or spiritual orientation.

Keywords: brain, conversion, cognitive neuroscience, meditation, epilepsy, neuroplasticity

Introduction

Recent advances in the neuroscientific study of brain/mind functioning have stimulated fresh thinking and vigorous debate on a wide range of topics, from ethics and gender to child-rearing and religion.¹ Thanks to powerful new technologies and increased funding from governmental and commercial sources, we now know far more about the workings of the human brain/mind system than ever before. Much of the research to date has focused on finding a cure for degenerative brain conditions like Alzheimer's and Parkinson's diseases. Less attention has been given to the neuroscientific dimensions of psychospiritual phenomena like religion. Unfortunately for the present purposes, we have no neuroscientific research directly addressing the topic of this handbook, namely, religious conversion. As a result, this chapter will necessarily adopt a constructive and forward-looking approach. Rather than analyzing previous studies (which do not exist), I will survey the current state of cognitive neuroscience for areas of ongoing research that relate to important aspects of conversion processes. Even though few neuroscientists recognize it, their work has genuine significance for the study of transformative religious experiences. This chapter aims to map out the most likely future paths that researchers will

follow in seeking a better understanding of how changes in brain/mind functioning correlate with changes in a person's religious and/or spiritual orientation.

The chapter starts with a section devoted to the philosophical, conceptual, and methodological issues that confront anyone wanting to explore the relationship between religion and neuroscience. Leading researchers take varying stances on these issues, and I will briefly present the main arguments related to each question and highlight their pragmatic consequences. The second section describes several topics of active (p. 241) neuroscientific research with relevance to conversion, including recent investigations into brain development, neuroplasticity, visual processing, and meditation. Although my own views will become obvious, readers will hopefully find enough information here to pursue their own exploration of the various topics. The conclusion to the chapter will push the discussion one step further than is usually taken. After reflecting on the neuroscience of religious conversion, neuroscience is considered as a tool for converting people to, or away from, religion.

Principles and Practices

Definitions of Religious Conversion and Cognitive Neuroscience

Like most of the contributors to this handbook, my understanding of religious conversion has been guided by the work of Lewis Rambo. While acknowledging earlier researchers like William James and G. Stanley Hall, who focused on dramatic, singular experiences, Rambo has argued for more attention to the long-term psychological and sociological processes at work in both sudden and gradual cases of conversion.² This chapter follows Rambo, along with James and Hall, in seeking a theoretical integration of the multiple factors of brain/mind functioning, personal circumstance, cultural context, and theological history that come together in any given conversion experience.

“Religion,” as I will use the term, is an imperfect but useful shorthand for an awareness of powers that transcend human control or understanding and yet have a formative influence on, and active presence within, human life. Most cultural traditions represent these trans-human powers in the form of gods, spirits, ancestors, mythic beings, and forces of nature. Religions tend to venerate certain places, objects, and/or texts because of their capacity to bring people closer to these powers, and special practices (e.g., pilgrimage, sacrifice, dance, music, prayer, meditation) are performed to enhance their beneficent influence on people's lives. Although human existence may be filled with pain and misfortune, religions teach various methods for overcoming that suffering, either in this life or in another one to come, by means of harmonizing one's thoughts, feelings, and behavior with transcendent forces. One important way that religions achieve this is by creating and sustaining a personal sense of connection to a community. Religious traditions have developed a variety of systems to bind (*religare*) people together over the span of multiple generations, preserving ancestral wisdom and preparing the group for future challenges and opportunities. I use the term “spirituality” as a general synonym for religion,

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with the added connotation of emphasizing the personal experiential qualities shared by religious traditions and nonreligious philosophies of life.

“Cognitive neuroscience” (hereinafter CN) is a broad term that includes many different disciplines devoted to the study of the human brain/mind system. The core of CN is the neural functioning of the brain and its relationship with the conscious (p. 242) experience of the mind. Technological improvements in imaging tools such as positron emission tomography (PET), functional magnetic resonance imaging (fMRI), and single positron emission computed tomography (SPECT) have enabled a more precise mapping of the activation levels of various regions of the brain during many different mental states. The imaging research has combined with several other methods of investigation, all of which come under the general heading of cognitive neuroscience: EEG studies of the electrophysiological features of brain activities;³ chemical analyses of the dozens of neurotransmitters flowing through the brain and influencing synaptic efficiency;⁴ anatomical studies of the cognitive losses resulting from damage or disease to the brain;⁵ experiments on the neural systems of other animals;⁶ genetic inquiry into the heritable features of brain/mind development;⁷ and computer-based efforts to create systems of artificial intelligence.⁸ In addition to these disciplines, CN also draws upon philosophy, anthropology, and linguistics insofar as these fields also provide resources for understanding the nature and functioning of the mind.

Reading the Cognitive Neuroscience Literature

Religious studies scholars who take an interest in CN are immediately confronted by a vast and constantly expanding technical literature. Although this may seem discouraging, it actually teaches an important lesson: there is no monolithic consensus among CN researchers on how the brain/mind system works. Instead, there are many competing theories trying to account for as much of the increasingly voluminous research data as possible. The rapid pace of new discoveries has made it difficult if not impossible for any single model to establish theoretical supremacy. What is taken as an adequate explanation today will likely be superseded by new evidence and better models tomorrow. For this reason, those who want to explore the relevance of CN to religious conversion need to remain open to the continuous unfolding of brain/mind research (rather than fixing on one theory alone), following the developments in specific areas over time and taking multiple theoretical perspectives into account. The most successful investigations will be those that focus on carefully circumscribed phenomena with clear points of convergence with CN; overly broad approaches are always vulnerable to refutation by more specialized forms of research. A prior familiarity with major twentieth-century figures in the psychology of religion (e.g., James, Freud, Jung) will be helpful, since they anticipated many of the key areas of interest in CN and foresaw many of the possible paths toward integrated understanding. Religious studies scholars are further advised to read secondary-source CN summaries with caution, as useful guides to the research literature but not as definitive statements of a putative CN consensus. When in doubt, go to the primary sources.

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The basic methodological approach I am describing is analogous to learning a new language. With enough time and effort, a degree of fluency and dialogical competence may be achieved, giving “outside” researchers the ability to understand and form (p. 243) judgments about the significance of CN research, at least as it relates to their home fields of study.

The Mind/Body Problem

Much of the excitement and controversy surrounding CN stems from its relevance to the mind/body problem in the Western philosophical tradition. As Kandel et al. put it, “We are dealing here with biology’s deepest riddle: the neural representation of consciousness and self-awareness.”⁹ The most extreme arguments present CN as the final solution to this problem: the mind is nothing but the physical properties of brain functioning.¹⁰ Others see the mind and the brain as mutually interdependent in ways that are not adequately explained by a strictly reductionistic materialism.¹¹ Closely related to this philosophical debate is the question of determinism vs. free will, with CN evidence used by some researchers to argue that free will is an illusion and our mental lives are more pre-determined than we consciously realize. Other researchers point to the dynamic complexity and creative freedom of the human brain/mind system as incompatible with a strongly deterministic view. Scholars in religious studies (henceforth RS) should be aware of the extent to which the philosophical convictions of CN researchers shape the significance they and others draw from their findings. To be clear, this is not a recommendation to read only those texts that seem “friendly” to one’s personal views or to avoid research that takes a critical line against religion. Although I favor a more interactive and pluralist response to these questions, the mind-to-brain reductionist approach has many intelligent and eloquent advocates, and their research data are almost always valuable, even if one may question their interpretations of those data. The point here is for readers to recognize the practical consequences of using different philosophical perspectives to evaluate the meaning and relevance of CN research and to factor those consequences into the analysis of past studies and the planning of future investigations.

Conceptual Polarities and Methodological Challenges in Cognitive Neuroscience

In studying the neuroscientific dimensions of conversion, readers should also strive to clarify where CN researchers stand on some important conceptual and methodological questions. The choices they make about how to answer these questions directly influence the production of their research findings and their subsequent theoretical extrapolations from those data. Below is a brief list of some of the issues that RS readers should keep in mind as they explore the CN literature.

Modularity or holism. Is the mind best characterized as a “Swiss army knife” of specialized cognitive tools? A great deal of scientific progress has been made using the modular approach.¹² However, some researchers see this perspective as too limited in (p. 244) its explanations of the psychological complexity of conscious life.¹³ The question then be-

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comes: if not a modular approach, then what is a better way to account for the global, synthetic, whole-is-greater-than-the-sum-of-its-parts functioning of the brain?

The limits of brain imaging. Since imaging technologies can only be applied to a fairly narrow range of human activities (typically those that can be performed while sitting still in a controlled laboratory context), how far can we generalize from the findings in this area of research? Future technological advances will surely expand the list of what can be studied via brain scans, but questions will still remain concerning which kinds of human experiences cannot be replicated in a lab setting and what limitations are consequently imposed on general psychological theories based only or primarily on brain scans.

The value of introspection. Is it legitimate to use first-person reports of inner psychological experience as CN evidence? Some researchers say no, rejecting introspection as inherently unreliable and unverifiable. Other researchers take the opposite stance and argue that it is not scientifically legitimate to ignore first-person reports when trying to understand the nature of the mind.¹⁴ A pragmatic compromise is to acknowledge the innate subjectivity of introspection and yet still generate valid empirical insights by using systematic methods of identifying the consistent themes and recurrent patterns across numerous reports from multiple research participants.

Newtonian or quantum physics. Can brain/mind processes be comprehensively explained in terms of Newtonian physics, or do the insights of quantum physics need to be included? One line of CN thought says that whatever subatomic phenomena may be at work in the brain, they are washed out by its ordinary Newtonian physical functioning, with no significant impact on the macro-processes of the mind. An alternative approach insists that quantum phenomena and other probabilistic, nonlinear processes do indeed influence neural activities, which means that CN cannot explain the workings of the brain with Newtonian concepts alone.¹⁵ Most CN research today proceeds in general disregard of this question, but that is likely to change with future discoveries in the still-young science of quantum physics.

Conceptual Polarities and Methodological Challenges in Religious Studies

A growing number of researchers in RS have used recent findings in brain/mind science to study various aspects of religious belief and practice. Like their CN counterparts, these RS researchers have also made choices about their conceptual frameworks and methods of inquiry that impact their findings. For someone wanting to study religious conversion, just as much critical scrutiny should be given to the RS sources as to the CN literature. Here are a few of the issues to keep in mind:

(p. 245) *Sui generis or ascriptive models of religion.* Is there anything irreducibly distinctive about religious life, or can all its features and qualities be explained in terms of other causal factors (e.g., psychological, sociological, historical)? Mircea Eliade is regularly taken as the strongest representative of the former approach, while Karl Marx and Émile Durkheim were early practitioners of the latter. Many RS scholars today reject the mysti-

fying effects of *sui generis* models and argue that the best connections to CN depend on using an “ascriptive” approach by which religious concepts are explained in relation to ordinary cognitive processes.¹⁶ Others in the RS field question the sufficiency of ascriptive explanations that fail to account for the dynamic and creative qualities of religious phenomena like mysticism, prophecy, and other altered states of consciousness.¹⁷ This is a major divide in the discipline, which is best summed up as a battle of prepositions: the ascriptive model seeks to be a scientific study of religion, while the latter-day *sui generis* advocates want to study science and religion.

Universalism or pluralism. Is there a core truth or set of truths held by every religion? Phrased in more individual terms, does every religious experience point to the same perennial truth? Or are different religious traditions and experiences genuinely different, leading humans in a variety of developmentally and spiritually unique directions? A person’s answer to these questions very likely goes to the heart of his or her ultimate worldview and should be respected as such. But in terms of practical scholarly consequences, a provisional pluralism seems to be the wisest course to follow, since it avoids explanatory overreach and promotes an open view to the appearance of new data.

Insider or outsider perspectives. Can a person who does not have personal familiarity with a religious tradition ever be able to give an accurate description of its essential nature? Alternatively, can a religious insider ever take a truly objective perspective on his or her faith tradition? Both sides of this methodological polarity have strong arguments. In practical research terms, however, there must be at least some acknowledgment of the validity of outsider, third-person perspectives if CN is to have a viable role in religious studies.

Ordinary or extraordinary experiences. Should the study of religion focus on the ordinary features of daily human existence, or should special attention be given to extraordinary experiences that occur relatively rarely but have a significant impact on people’s religious lives? Pascal Boyer has argued for the “ordinary” approach, as did Sigmund Freud many years ago in *Civilization and its Discontents*.¹⁸ William James’s *The Varieties of Religious Experience* is the best example of the “extraordinary” approach. In principle, there is no reason to exclude either method. Nevertheless, a tendency toward the former in RS is a natural consequence of the fact that more CN research is available on the analysis of “ordinary” brain/mind functioning. Much less data is available on the kinds of extraordinary religious experiences studied by James and others, though that will probably change as new research technologies become more widely used.

(p. 246) Topics of Ongoing Research

Introduction and Limitations

In this section, the CN literature will be surveyed through the specific and admittedly narrow lens of the study of religious conversion. This will not be a survey of brain/mind

science in general; good sources for that purpose are listed in the bibliography. Rather, I will concentrate on those areas of current CN research that relate most closely to the psychospiritual dynamics of religious conversion. These topics offer some excellent opportunities for interdisciplinary research between RS and CN. Whatever answers you gave to the philosophical and methodological questions in the preceding section, you will likely find a great deal of highly relevant data in these brain/mind research areas. The space limitations of this chapter mean the descriptions will try to convey as much information as possible in quite brief terms, so readers are encouraged to investigate the sources listed below for more detailed accounts.

Brain Development

The past several decades of research on brain development has shown very clearly the evolutionary roots of human consciousness in the mammalian central nervous system. The human species occupies a “cognitive niche” in the global environment in that our unusually large and densely interconnected cerebral cortexes have given us an advantage over other species by expanding our capacities for memory, learning, forethought, and social communication. Through a process called *neurogenesis*, the brain of a human fetus grows a total of approximately 200 billion neurons while still in the womb. These neurons are then “pruned” back by spontaneous bursts of internal brain activation so that about half the original number forms the synaptic circuits the child has at birth, while the other 100 billion or so neurons are not used and simply die off.

The significance of this line of research for conversion appears when CN looks for evidence of neurogenesis occurring after birth. It turns out there is another major burst of new neural growth in adolescence, an especially common time of life for religious conversion, as RS researchers from G. Stanley Hall onward have shown.¹⁹ According to Schwartz and Begley, “the teen brain, it seems, reprises one of the most momentous acts of infancy, the overproduction and then pruning of neuronal branches.”²⁰ Even more intriguingly, the surge in neurogenesis during adolescence seems to take place with special intensity in the frontal and parietal lobes of the brain. The frontal lobe is generally associated with the “executive functions” of the mind, including self-control, judgment, and emotional regulation, while the parietal lobe is involved in the coordination of different streams of perceptual information. These are relatively “high-level” cognitive (p. 247) processes whose emergence in the adolescent brain goes a long way toward shaping the mature mental life of the individual. The pruning and reorganization of these new neural outgrowths is different from what occurs during pre-natal development, since the fetus receives very limited stimulation from outside the womb. Adolescents, by contrast, are typically immersed in complex social worlds where they are continually influenced by external factors such as families, friends, neighbors, cultural symbols, and religious traditions. Although there is no research directly on this point, a plausible and empirically testable hypothesis would be that religious traditions provide cognitive templates for reorganizing the mind during adolescent neurogenesis. The religious teachings that become the governing principles of a new convert’s life focus on the regulation of precisely

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those psychological functions of self-control and information management that CN has associated with the frontal and parietal lobes. Conversion, in this view, would be an especially dramatic pruning of adolescent neurogenesis into a framework provided by the newly adopted religion.

Another important factor in brain development, *plasticity*, has direct relevance for conversion studies. Genetic programming plays a big role in the cerebral localization of many important neural systems, but genes do not specify the exact wiring of every neural circuit. Much of the brain's actual growth and functioning depend on its always unpredictable interactions with the environment (both social and natural), and for that reason the brain of a newborn human retains a tremendous capacity for structural change and flexible adaptation. For example, children who are born with severe deficiencies in the left hemisphere of their brains, where language abilities are usually centered, are somehow able to shift the neural underpinnings of their language abilities to their brains' right hemispheres. This kind of radical plasticity was once thought to be limited to early childhood, with neural circuits fixed immutably in place once adulthood was reached. Recent research has shown, however, that a considerable degree of plasticity is also evident in the adult brain. Azari and Seitz looked at stroke patients who had suffered damage to their primary motor cortex, with severe paralysis to one hand.²¹ Four weeks after the stroke, they had recovered most of their hand functioning, and PET scans showed that their brains had developed a compensatory neural pathway from "higher" centers of the brain to the spinal cord, allowing for the reestablishment of volitional control of the hand. No one yet knows how far the brain's plasticity extends, but Azari and Seitz also found that in other stroke cases the individual's brains engaged in "cross-modal" plasticity, in which neural resources from one system (e.g., visual) were recruited to compensate for damage in an entirely different system (e.g., motor).

The general import of this research is to underscore the dynamic malleability of the brain, a point that provides a new opportunity for the study of religious conversion. The phenomenon of conversion is predicated on the capacity of humans to change the way they perceive and experience the world. According to CN research on neuroplasticity, a fundamental capacity for change remains with us throughout our lives and extends across many areas of brain/mind functioning.

Not all brains develop and grow in a healthy fashion, however. One particular type of brain dysfunction, temporal lobe epilepsy (TLE), bears an intriguing connection to (p. 248) religious experience. Indeed, TLE has long been of interest to those seeking a brain-based theory of religion.²² Epilepsy involves varying degrees of neural hyperactivation and physical seizure, sometimes only affecting small cortical regions and other times sweeping across the whole brain. In a surprising number of TLE cases, the affected individuals describe the seizures as profound spiritual experiences and direct communions with the divine. According to Ramachandran and Blakeslee,

These brief temporal lobe storms can sometimes permanently alter the patient's personality so that even between seizures he is different from other people. No

one knows why this happens, but it's as though the repeated electrical bursts inside the patient's brain (the frequent passage of massive volleys of nerve impulses within the limbic system) permanently 'facilitate' certain pathways or may even open new channels, much as water from a storm might pour downhill, opening new rivulets, furrows and passages along the hillside. This process, called kindling, might permanently alter—and sometimes enrich—the patient's inner emotional life.²³

RS scholars who study conversion are well advised to become familiar with the CN literature on epilepsy and follow its future course as new investigations are pursued and new empirical data generated. How one interprets the phenomenon of epileptic spirituality, whether as proof of the brain-based pathology of religion or as evidence of the mind's capacity for higher consciousness, depends once again on one's philosophical and methodological assumptions. Although a rare disorder like temporal lobe epilepsy should not be taken as a general model for religion, it does provide a valuable window into the neurological dimensions of intense religious experiences, including sudden conversions to a new faith.

Vision and Meditation

The brain/mind processes involved in sensory perception have received extensive attention from CN researchers in recent years. A remarkable amount is now known about visual perception in particular,²⁴ and we may identify at least two possible implications for the study of religious conversion.

First, the numerous unconscious inferences the brain/mind system makes in transforming sensory input into conscious experience has the unfortunate consequence of producing a species-wide vulnerability to visual illusions and misapprehensions.²⁵ As magicians and conjurers have long known, we are easily deceived by our automatic assumptions about the reality of things we seem to be seeing. In cases of conversion, where a person's motivation derives to some degree from "visions" of miraculous events or divine beings, CN findings can legitimately be brought to bear to analyze the neural substrate of such unusual and perhaps faulty visual perceptions.

Second, seeing (along with all other forms of perception) turns out to be a constructive process rather than a passive reproduction of external reality. What people see depends fundamentally on what their minds are interested in seeing and what their (p. 249) brains are capable of representing. In this regard, CN finds an unexpected harmony with post-modern philosophy from Nietzsche onward—reality is not a given but is actively created by the human psyche. This insight can and should be investigated further in relation to religious conversions where people undergo a basic reordering of the assumptions and expectations that frame their perceptions of the world. Indeed, in cases where a conversion prompts a dramatic and lasting improvement in mood, energy, and motivation, CN researchers may find new evidence regarding the latent potentials of future brain/mind development.

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Furthermore, CN can illuminate the effectiveness of religious practices that either stimulate the visual processing system or try to shut it down. This leads to the topic of meditation, which several CN researchers have investigated.²⁶ The felicitous fact that meditators and people in prayer are usually sitting still for long periods of time makes them ideal subjects for current-generation brain-scanning technologies. Practitioners of Buddhist, Hindu, and Christian contemplative traditions have participated in these studies, which typically involve the individual meditating in a hospital or university setting while attached to neuroimaging machines and under the supervision of the laboratory staff. Although artificial and questionably relevant to other forms of religious experience, this research paradigm has produced important results that all RS scholars, not just those studying conversion, should take into account.

CN has found that meditation and other contemplative practices alter the brain's functioning in measurable, material, and predictable ways. According to CN, meditation works. Several implications flow from that basic finding. One is that at least some aspects of religion are not generated by pathological brain functioning. Current CN research refutes the idea that religion qua religion stems from faulty brain/mind processes. The best available scientific evidence indicates that people who engage in religiously motivated contemplative practices have normal, healthy brains. Perhaps other forms of religion can be more directly tied to neuropathology, but in the case of meditation and prayer the CN literature supports a pragmatic appreciation of the effectiveness of religious practices in shaping the healthy interaction of brain and mind.

Another important implication regards the variety of changes that meditation and prayer have been shown to make on the brain/mind system. Best known, perhaps, are the findings of Newberg and D'Aquili showing that Buddhist meditators and Franciscan nuns in prayer both showed more activation in the prefrontal cortex, seat of the "executive functions" (responsible for focused attention and protection against distraction, mentioned above) and less activation in the brain regions responsible for sensory perception and bodily orientation (prompting feelings of selflessness and fusion with all of reality). However, that is not the only brain pattern associated with meditation. A different set of findings comes from Hans Lou and colleagues, who used PET scans to study yoga teachers performing the relaxation technique known as yoga nidra. They found increased activation in precisely those brain regions one would predict would be stimulated by this multifaceted type of meditation: the visual cortex in the posterior part of the brain was activated during a period of intense visualization; the brain regions devoted to bodily awareness and control were more active during a reflection on the weight of the (p. 250) limbs; and the prefrontal cortex showed a markedly decreased activation as the "executive" control of the mind yielded to the flow of bodily sensations.

Despite the lack of space to go into these or any other CN studies in more detail, an important point may still be made: different contemplative practices produce different patterns of brain activation. A type of meditation that concentrates on stripping the mind of all external awareness can successfully alter the brain's neural functioning in the bodily orientation area, while a type of meditation that centers on a particular visionary image,

symbol, or icon can “light up” the visual processing system in another part of the brain. This may seem obvious, but it runs counter to the universalist claim of Newberg and D’Aquili that CN research is proving that all religious experiences can be explained as approximations on the path toward “absolute unitary being.” Some traditions may seek that as their spiritual goal, but others clearly do not, and Newberg and D’Aquili’s sweeping conclusions do not square with the multiplicity of CN data (nor with the RS literature on comparative religions). As noted above, a provisional pluralism seems at present to be a better approach for understanding the varieties of contemplative practices.

In light of this, RS scholars studying conversion should be heartened by the prospect of growing CN knowledge about religion’s capacity to change the brain/mind system. At the same time, a healthy skepticism is warranted toward overly ambitious, prematurely universalistic theories of how the brain gives rise to religion. As new studies are performed with better technologies on a wider variety of religious and spiritual practitioners, the inadequacy of one-size-fits-all explanatory frameworks will become increasingly apparent.

Conclusion

This chapter has surveyed only a few of the areas where CN research offers useful resources for the study of religious conversion. Many other lines of inquiry and potential connection with CN can and should be considered by RS scholars, including the topics of memory,²⁷ addiction, social intelligence,²⁸ empathy, the placebo effect,²⁹ music,³⁰ trauma, brainwashing, perceptual binding,³¹ wonder,³² and dreaming.³³ The same conceptual and methodological issues raised in the first section of this chapter apply to these topics as well.

A final word may be said about the contemporary use of CN to convert people to or away from religion. As an example of the former, Tenzin Gyatso, the fourteenth Dalai Lama of Tibetan Buddhism, has shown great enthusiasm for the work of Western neuroscientists, whose results he takes as proof of the effectiveness of core Buddhist teachings.³⁴ The Dalai Lama clearly regards CN as a valuable ally in persuading people of the truth of his faith, and the growth of Buddhism in North America and Europe testifies to his success. At the same time, several Christian theologians have drawn upon CN to highlight what they believe are the central insights of their faith.³⁵ In their view, CN (p. 251) provides additional evidence in favor of Christianity’s basic understanding of human nature, with helpful implications for pastoral ministry.

On the other end of the spectrum, rationalist scourges of religion like Richard Dawkins use the findings of brain/mind science not simply to explain people’s religious faith but to eliminate it, replacing it with a sober trust in science.³⁶ These “ultra-Darwinian” skeptics employ CN as one of their weapons against religious moral codes and explanations of natural phenomena. Dawkins makes clear his deconversion goal in the preface to *The God Delusion*, where he says, “If this book works as I intend, religious readers who open it will be atheists when they put it down.”³⁷ To judge by the popular reception of Dawkins’s

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writings and those of his comrades-in-arms, the deconverting effect of this approach may be considerable.

So, does CN support religion or refute it? The answer is both and neither. The vast research literature in CN provides data that seem very favorable to religion, along with data that seem very dismissive of religion. If we take into account all the available evidence, we must conclude that neither explanatory approach is adequate. Herein lies the greatest challenge for the future study of religious conversion and brain/mind science: to develop an interdisciplinary, self-reflexive method of integrating multiple sources of CN evidence without being limited by the ideological presuppositions of those who are either “for” or “against” religion.

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