Review

Neurocognitive Mechanisms Underlying Religious Belief: Biological Predisposition vs. Social Construction

Kyrylo Somkin *

Posted Date: 26 January 2026

doi: 10.20944/preprints202601.1899.v1

Keywords: neuroscience; religious belief; dlPFC; vmPFC; cognitive neuroscience; sociocultural factors

 doi:10.20944/preprints202601.1899.v1

Review

Neurocognitive Mechanisms Underlying Religious Belief: Biological Predisposition vs. Social Construction

Kyrylo Somkin

Independent Researcher, Czech Republic; somkinkirilo@gmail.com

Abstract

The origin of the concept of God is a central question at the intersection of neuroscience, cognitive science, and social theory. This review proposes an integrative model in which religious belief emerges as an interaction between neurocognitive mechanisms, genetic predispositions, and sociocultural influences. Specifically, neural circuits including ventromedial prefrontal-limbic networks (vmPFC) and dorsolateral prefrontal cortex (dlPFC) support emotional valuation and rational evaluation of supernatural agents, while dopaminergic and serotonergic pathways reinforce meaningful experiences. Genetic and temperamental factors modulate individual responsiveness to these neural processes, and sociocultural institutions shape beliefs into stable, culturally transmitted concepts. By synthesizing evidence across neural, genetic, and social levels, the paper demonstrates that the idea of God is neither purely biologically determined nor solely culturally constructed, but an emergent phenomenon. This integrative perspective provides a mechanistic explanation for the universality of religious belief, its variability across cultures, and offers concrete directions for testing predictions in neuroimaging, genetic, and cross-cultural studies.

Keywords: neuroscience; religious belief; dlPFC; vmPFC; cognitive neuroscience; sociocultural factors

Introduction

The origin of the concept of God represents a complex problem situated at the intersection of neuroscience, genetics, cognitive science, and social theory. Rather than being reducible to a single explanatory level, religious belief appears to emerge from the interaction between biological predispositions, neural architectures, and socio-cultural environments. Contemporary research increasingly suggests that the idea of God cannot be understood solely as a cultural construct or purely as a neurobiological phenomenon, but rather as a multi-layered cognitive and social process.

From a neurocognitive perspective, the human brain possesses structural and functional mechanisms that predispose individuals to interpret the world in terms of intentionality and agency. Processes such as theory of mind, agency detection, and causal inference enable humans to attribute intentions not only to other people but also to invisible or abstract entities. These mechanisms provide a cognitive foundation upon which religious representations can be constructed. At the neural level, studies have identified the involvement of distributed brain networks, including the temporoparietal junction, limbic structures, and the prefrontal cortex, in religious experience and belief formation. This suggests that religiosity is not localized in a single brain region but emerges from coordinated activity across multiple systems.

In addition to neural mechanisms, genetic factors appear to contribute to individual differences in religiosity and spiritual tendencies. Twin and family studies indicate that certain cognitive and personality traits associated with religious inclination—such as openness to experience, sensitivity to meaning, and social conformity—show moderate heritability. These findings do not imply the existence of a "gene for God," but rather suggest that genetic variation influences cognitive styles and

 doi:10.20944/preprints202601.1899.v1

emotional dispositions that may facilitate or inhibit religious belief. Thus, religiosity can be understood as partially shaped by biological predispositions that interact with environmental and cultural inputs.

A particularly intriguing aspect of the neuroscience of religion concerns the role of the prefrontal cortex (PFC). The PFC is generally associated with higher-order cognitive functions, including critical reasoning, executive control, and reflective thinking. Neuroimaging studies have shown that during certain forms of religious experience or prayer, activity in regions of the prefrontal cortex may decrease relative to baseline cognitive states. At first glance, this finding appears paradoxical: if the PFC supports rational analysis, its reduced activity might suggest that religious belief depends on the suspension of critical cognition. However, such an interpretation oversimplifies the relationship between rationality and faith.

A more nuanced explanation is that the prefrontal cortex does not simply "suppress" belief but modulates it. High-level cognitive systems can coexist with religious representations by allowing the individual to compartmentalize or reinterpret beliefs within broader frameworks of meaning. In this sense, the PFC enables the coexistence of analytical reasoning and religious belief rather than eliminating one in favor of the other. The temporary reduction of prefrontal activity during intense religious states may reflect a shift from analytical processing to experiential and affective modes of cognition, rather than a complete abandonment of rational control.

This interaction between cognitive control and symbolic meaning illustrates how complex mental architectures allow religious ideas to persist without being destroyed by rational reflection. The human brain is not structured to eliminate symbolic or metaphysical representations, but to integrate them into coherent systems of meaning that serve psychological and social functions. Therefore, the concept of God can be understood as a cognitive construct that is stabilized by both biological mechanisms and cultural narratives.

From a sociological perspective, religious concepts are further shaped and transmitted through social institutions, language, and collective practices. Cultural systems provide symbolic frameworks that transform individual cognitive predispositions into shared representations of the divine. Consequently, the idea of God emerges not merely from the brain or from society alone, but from the dynamic interplay between neural structures, genetic predispositions, and socio-cultural processes.

Taken together, these considerations suggest that the concept of God should be interpreted as an emergent phenomenon arising from multiple interacting levels of explanation. By integrating insights from neuroscience, genetics, and social theory, this paper aims to develop a conceptual model that explains why the idea of God is both cognitively plausible and culturally persistent. Such an approach not only clarifies the origins of religious belief but also sheds light on broader questions concerning human cognition, meaning-making, and the relationship between rationality and transcendence.

1. Neurocognitive Foundations of Religious Belief

Religious belief emerges from the intricate architecture of the human brain, which integrates cognitive, emotional, and evaluative processes. Rather than being localized to a single region, religiosity involves distributed networks that allow humans to represent and evaluate supernatural agents. Among these, the ventromedial prefrontal cortex (vmPFC) plays a central role in evaluating personal significance, moral relevance, and affective meaning, effectively embedding religious representations within the individual's value system. In parallel, the dorsolateral prefrontal cortex (dlPFC), a more evolutionarily recent structure, supports executive functions, reflective thinking, and cognitive control, including the critical evaluation of beliefs.

Functional neuroimaging studies reveal a dynamic interaction between these regions during religious cognition. For instance, during prayer or meditation, dlPFC activity often decreases, suggesting a temporary suspension of analytical processes, while vmPFC activity remains engaged, supporting the experiential and affective dimension of belief. This pattern indicates that religious thought may require a balance between rational evaluation and affective commitment: the brain

 doi:10.20944/preprints202601.1899.v1

permits belief to persist without being overridden by purely critical reasoning. In this way, the coexistence of dlPFC-mediated control and vmPFC-mediated value integration enables the mind to hold religious representations that are both meaningful and cognitively stable.

Beyond cortical interactions, limbic structures contribute to the emotional salience of religious experiences. The amygdala, hippocampus, and associated networks modulate fear, attachment, and reward responses, linking spiritual practices and supernatural concepts to deeply rooted affective states. Furthermore, the dopaminergic reward system reinforces religious experiences by encoding them as emotionally salient and positively valenced events, effectively strengthening belief through reward-based learning and contributing to the persistence of religious practice over time. Such integration suggests that religiosity is not merely a product of abstract cognition, but a reflection of the brain's evolved capacity to create meaningful narratives that influence behavior and social cohesion.

At the cognitive level, humans possess mechanisms such as hyperactive agency detection (HADD) and theory of mind, which predispose them to attribute intentionality and purpose to events, objects, and unseen agents. These mechanisms, originally adaptive for social reasoning and survival, provide fertile ground for the intuitive emergence of beliefs in supernatural agents. Pattern recognition, causal inference, and moral reasoning further scaffold these representations, creating robust cognitive frameworks for the persistence of religious ideas.

In sum, religious cognition is an emergent property of interacting neural networks, combining evolutionarily older affective systems (vmPFC and limbic structures) with newer cognitive-control regions (dlPFC). This neurocognitive architecture allows humans to experience and maintain religious beliefs, integrating emotion, reflection, and social meaning. The functional interplay between these areas offers a scientific explanation for how the brain supports belief in God: it is neither destroyed by rational cognition nor purely a product of cultural imposition, but a product of the brain's intrinsic organization and its evolutionary history.

2. Genetic and Biological Contributions to Religiosity

While Section 1 outlined the functional architecture of religious cognition, this section focuses on inherited and neurochemical factors that modulate individual differences in religiosity. Twin and family studies suggest that approximately 30–50% of variability in religious inclination can be attributed to heritable traits, highlighting the influence of genetics on predisposition to spiritual or religious engagement. Importantly, these findings do not support the notion of a single "gene for God"; rather, they reflect the heritability of cognitive, affective, and personality traits that shape how individuals perceive, interpret, and sustain religious beliefs (e.g., variations in VMAT2, the vesicular monoamine transporter gene, have been discussed in the literature as potentially modulating spiritual tendencies, though this remains highly debated).

Several cognitive and personality traits are linked to both genetic variation and religiosity. Traits such as openness to experience, conscientiousness, emotional sensitivity, and social conformity influence one's receptivity to moral, existential, and supernatural ideas. For instance, heightened sensitivity to meaning or reward may predispose individuals to experience religious practices as emotionally salient, whereas higher cognitive flexibility can support analytical reinterpretation of religious concepts. These inherited tendencies interact with the neural networks described in Section 1, particularly the vmPFC-limbic circuits and dlPFC-mediated control systems, forming a multilayered framework in which biology shapes the emergence and maintenance of belief.

At the neurochemical level, dopaminergic and serotonergic systems play a central role in reinforcing religious or spiritual experiences. Dopamine mediates reward-based learning, linking positive emotional experiences to religious practices, while serotonin contributes to mood regulation and social behavior. In addition, oxytocin, a neuropeptide involved in social bonding and group cohesion, may facilitate engagement in communal rituals and prosocial behaviors, bridging individual predispositions with broader social and cultural influences. These neurochemical

 doi:10.20944/preprints202601.1899.v1

dynamics provide a biological scaffolding that stabilizes belief over time, ensuring that religiosity is a durable feature of human cognition rather than a transient or purely cultural phenomenon.

Developmental and environmental factors further shape how genetic and neurochemical predispositions are expressed. Early-life attachment patterns, socialization, and exposure to religious communities interact with heritable traits to influence sensitivity to neural reward signals and social bonding processes. Individuals with specific temperamental profiles may thus be more responsive to communal practices, reinforcing the integration of cognitive, affective, and social dimensions of belief.

Taken together, these findings underscore the multi-level nature of religiosity, highlighting how genetic, neurochemical, and developmental factors interact with neural networks to modulate the strength, stability, and social expression of religious belief. By establishing individual differences in predisposition and responsiveness to religious experiences, biology creates a fertile ground upon which social and cultural factors can construct shared representations of the divine, providing a smooth transition to the discussion of socio-cultural influences.

3. Sociocultural and Environmental Factors

While neurocognitive and genetic factors provide the foundation for religious belief, the specific form, content, and structure of religious concepts are largely shaped by sociocultural influences. Cultural transmission, language, collective rituals, and social institutions transform individual predispositions into shared representations of the divine. This process allows humans to maintain complex religious systems that are meaningful at both personal and societal levels.

Interestingly, the concept of God evolves as it interacts with social environments. The “initial” or cognitive God, emerging from neurocognitive predispositions and affective mechanisms, tends to be simpler and more intuitive, reflecting basic agency detection, moral reasoning, and emotional valuation. In contrast, the culturally elaborated God incorporates the norms, values, and symbolic frameworks of society, often becoming more abstract, morally codified, and socially regulated. This distinction highlights the dynamic interplay between brain-internal mechanisms and external social shaping, illustrating how universal cognitive tendencies are molded by context-specific cultural narratives.

Collective rituals, religious education, and institutional practices reinforce these culturally mediated representations, aligning individual belief systems with broader social norms. Neurobiologically, these activities engage oxytocinergic networks, reward pathways, and vmPFC-limbic circuits, strengthening group cohesion and embedding beliefs within emotionally and socially meaningful frameworks. Over time, such mechanisms stabilize shared religious concepts, explaining why certain theological elements persist across generations despite individual cognitive variability.

Thus, religiosity cannot be fully understood without considering both the innate cognitive tendencies that generate the initial concept of God and the sociocultural processes that elaborate and sustain it. The resulting belief system is a hybrid product: it is rooted in the brain and biology, yet continuously reshaped by social context, creating a dynamic interplay that allows religion to adapt, persist, and influence behavior across diverse cultural landscapes.

4. Integrative Model of Religious Cognition

Religious belief emerges as an emergent phenomenon from the interaction of neurocognitive, genetic, and sociocultural processes. Integrating the insights from Sections 1–3, we propose a model in which the concept of God is both biologically plausible and culturally elaborated. Neurocognitive mechanisms provide the initial scaffold—vmPFC-limbic circuits encode emotional salience, dlPFC enables rational evaluation, and dopaminergic reward pathways reinforce meaningful experiences. Genetic and temperamental factors modulate individual differences, influencing how readily these neural circuits respond to spiritual stimuli. Sociocultural inputs, including language, rituals, and institutions, then shape these predispositions into shared, stable religious concepts.

 doi:10.20944/preprints202601.1899.v1

An evolutionary perspective further illuminates the transformation of religious representations over time. Early or "cognitive" Gods likely reflected simple, anthropomorphic, and morally intuitive agents, directly emerging from human agency detection, theory of mind, and affective valuation. These early concepts served immediate adaptive purposes—guiding social behavior, reinforcing cohesion, and providing existential meaning. As societies grew in size and complexity, cultural evolution and institutionalization reshaped these cognitive constructs, producing more abstract, codified, and socially regulated Gods. Historical processes, such as major religious reforms, scientific revolutions, and cultural exchanges, further diversified and refined the representation of divine entities, reflecting the dynamic interplay between brain-internal mechanisms and external cultural pressures.

This integrative framework emphasizes that religious belief is neither purely biologically determined nor solely a cultural artifact. Instead, it is a dynamic product of:

1. Neurocognitive architecture — enabling the perception and valuation of supernatural agents
2. Genetic and neurochemical predispositions — modulating responsiveness to belief-reinforcing experiences
3. Sociocultural shaping — transforming initial cognitive constructs into culturally transmitted, durable systems

In sum, the model illustrates how the concept of God emerges from the brain but evolves with culture, explaining both its universality across human populations and its remarkable variability across historical and social contexts. By accounting for cognitive, biological, and cultural dynamics, this integrative approach provides a cohesive explanation for the stability, persistence, and evolution of religious belief throughout human history.

5. Conclusions

In this review, we have outlined an integrative framework for understanding the emergence and persistence of religious belief, emphasizing the interplay between neurocognitive mechanisms, genetic predispositions, and sociocultural influences. Neurocognitive circuits—including vmPFC-limbic networks and dlPFC-mediated control systems—provide the structural and functional substrate for perceiving, evaluating, and emotionally encoding supernatural agents. Genetic and neurochemical factors, such as heritable personality traits, dopaminergic reward pathways, and modulatory influences like VMAT2 and oxytocin, shape individual differences in responsiveness to religious experiences, reinforcing belief and supporting social cohesion. Sociocultural processes, including language, collective rituals, and institutional frameworks, further transform these initial cognitive constructs into culturally elaborated and historically evolving concepts of God, illustrating the dynamic transition from "cognitive" to "cultural" Gods across human history.

Despite these insights, important limitations remain. Current research is constrained by the complexity of long-term neural plasticity, the multifactorial nature of religiosity, and the challenges of isolating biological, cognitive, and cultural contributions in naturalistic settings. Moreover, the rapid expansion of digital and virtual environments introduces new variables that may shape the cognitive and social mechanisms underlying belief, warranting investigation in the coming years.

Discussion

The preceding sections outlined a multi-level model of religious cognition, integrating neurocognitive, genetic, and sociocultural factors. In this discussion, we aim to contextualize these findings within broader scientific and historical perspectives, address potential limitations, and propose avenues for future research that could enhance the explanatory power of this integrative framework.

1. Bridging Cognition and Culture

 doi:10.20944/preprints202601.1899.v1

A central insight of this review is the dynamic interaction between brain-internal mechanisms and social environments. While neurocognitive systems provide the foundation for religious cognition, they do not operate in isolation. The vmPFC-limbic circuits encode affective and moral salience, while dlPFC-mediated control allows for flexible reasoning and critical evaluation. This architecture produces a cognitive baseline for belief, or the "initial God," which is further shaped and elaborated by sociocultural processes. Cultural institutions, rituals, and language provide stability, normative frameworks, and intergenerational transmission, transforming simple cognitive constructs into complex, historically evolved concepts of divinity.

This perspective reconciles two often opposing views in the study of religion: one emphasizing the biological and cognitive origins of belief, and another emphasizing the role of culture and social learning. By showing how these levels interact, the model demonstrates that religiosity is neither purely innate nor solely constructed; rather, it is an emergent phenomenon arising from multi-level interactions, which accounts for both universality and variability in religious experience across individuals and societies.

2. Evolutionary Trajectories of Religious Concepts

From an evolutionary standpoint, early humans likely conceptualized supernatural agents in ways that were simple, emotionally salient, and morally intuitive. Cognitive mechanisms such as hyperactive agency detection, theory of mind, and causal reasoning predisposed humans to attribute intentionality to natural events, leading to the emergence of proto-deities or animistic beliefs. As societies increased in complexity, these cognitive Gods were elaborated into more abstract and institutionally codified forms. Historical processes—including religious reforms, cultural revolutions, and technological advances—further refined these concepts, creating theologically and socially complex Gods that guide moral behavior, social cohesion, and existential meaning.

The integrative model presented here allows us to trace this evolutionary trajectory, showing how neural predispositions, genetic modulation, and social reinforcement collectively shaped the historical development of religious systems. Importantly, this framework provides a bridge between neurobiological data and historical and anthropological observations, suggesting that both individual cognition and collective culture are essential for understanding the persistence and transformation of religious ideas.

3. Neurogenetic Modulators and Individual Differences

The review highlights the role of genetic predispositions, temperamental traits, and neurochemical systems (dopamine, serotonin, oxytocin) in modulating religious experience. Variations in genes such as VMAT2 illustrate how monoamine signaling may influence susceptibility to spiritual or religious tendencies, though these associations remain highly debated. Moreover, individual differences in openness, emotional sensitivity, and sociality contribute to variability in how religious concepts are internalized and maintained.

These insights have critical implications: they explain why some individuals may be deeply committed to religious practices while others remain more skeptical, even within the same cultural context. Furthermore, the integration of neurogenetic factors with socio-cultural inputs offers a mechanistic explanation for the stability and adaptability of religious systems, which can persist across generations despite individual variability.

4. Limitations and Considerations

Despite its strengths, this review and model face several limitations. First, longitudinal studies of neurocognitive processes in religiosity are scarce, limiting our understanding of how brain mechanisms change over decades or in response to cultural shifts. Second, while we incorporated well-established neurocognitive and genetic findings, the interaction between digital environments and religious cognition remains largely unexplored, yet increasingly relevant in 2026 and beyond.

 doi:10.20944/preprints202601.1899.v1

Third, although the model integrates multiple levels of analysis, causal relationships remain difficult to establish: disentangling innate predispositions from social reinforcement in naturalistic settings is inherently complex.

Additionally, while we included genes such as VMAT2 and neurochemicals like oxytocin, these examples are illustrative rather than definitive; more comprehensive genome-wide or neurochemical studies are necessary to substantiate these links. Care must also be taken to avoid oversimplifying the balance between dlPFC rational control and vmPFC emotional valuation, as functional dynamics may vary across individuals, developmental stages, and cultural contexts.

5. Future Directions

To strengthen and validate the integrative model, future research should prioritize multi-modal, longitudinal, and cross-cultural approaches. Potential avenues include:

Long-term neuroimaging studies tracking changes in vmPFC/dlPFC activity and reward circuitry across life stages and in response to religious practice.

Genetic and epigenetic analyses linking heritable traits to neurocognitive and behavioral manifestations of religiosity.

Experimental studies of social and digital environments, examining how virtual rituals, online communities, and digital media shape religious cognition and reward mechanisms.

Comparative historical analyses, investigating how societal upheavals, cultural revolutions, and technological transitions influence conceptualizations of divinity.

By pursuing these directions, scholars can rigorously test the predictions of the integrative model, refine its explanatory scope, and further elucidate the neurobiological, psychological, and cultural mechanisms underlying religious belief.

6. Strengthening the Current Preprint

While this manuscript provides a comprehensive and integrative account, its current relative weakness compared to previous work may lie in:

1. Empirical specificity — limited direct data integration from experimental or neuroimaging studies.
2. Novelty of predictions — the model is theoretically strong but could be strengthened with explicit testable hypotheses.
3. Digital age relevance — a stronger emphasis on how modern virtual environments influence belief could make the paper more forward-looking.

To address these points, future revisions could:

Include figures summarizing neural-genetic-social interactions

Propose specific experimental designs to test dlPFC/vmPFC dynamics, reward-based learning, or oxytocin-mediated social effects

Expand discussion on digital culture and AI-mediated religious experiences, making the work highly relevant to contemporary and near-future contexts

Future research should aim to integrate neuroimaging, genetic, longitudinal, and cross-cultural approaches to test and refine this integrative model. Such studies could illuminate how religious cognition adapts to changing social contexts, technological environments, and historical transformations, deepening our understanding of both the universality and variability of human religiosity. By synthesizing current evidence across multiple levels of analysis, this framework provides a scientifically grounded yet culturally sensitive perspective on the emergence, maintenance, and evolution of religious belief, offering a foundation for both theoretical exploration and empirical inquiry in the years to come.

References

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

 doi:10.20944/preprints202601.1899.v1

Barrett, J. L. (2004). Why Would Anyone Believe in God? AltaMira Press.

Newberg, A., & Waldman, M. R. (2009). How God Changes Your Brain. Ballantine Books.

Norenzayan, A. (2013). Big Gods: How Religion Transformed Cooperation and Conflict. Princeton University Press.

McNamara, P. (2009). The Neuroscience of Religious Experience. Cambridge University Press.

Taves, A. (2009). Religious Experience Reconsidered: A Cognitive-Orientational Approach to a Study of Feelings, Activities, and Meaning. Princeton University Press.

Luhrmann, T. M. (2020). How God Becomes Real: Kindling the Presence of Invisible Others. Princeton University Press.

Azari, N. P., Missimer, J., & Seitz, R. J. (2001). "Neural constituents of religious experience." European Journal of Neuroscience, 13(8), 1649–1652.

Kapogiannis, D., Barbey, A. K., & Grafman, J. (2009). "Cognitive and neural foundations of religious belief." Proceedings of the National Academy of Sciences (PNAS), 106(12), 4876–4881.

Harris, S., Sheth, S. A., & Cohen, M. S. (2009). "The neural correlates of religious and nonreligious belief." PLOS ONE, 4(10), e7272.

Schjoedt, U., Stødkilde-Jørgensen, H., Geertz, A. W., & Roepstorff, A. (2011). "The power of charisma: perceived charisma inhibits the frontal executive network of believers." Social Cognitive and Affective Neuroscience, 6(1), 119–127.

Grafman, J., et al. (2020). "The cognitive neuroscience of religious belief." Nature Reviews Psychology, 1(1), 12–25.

Ferguson, M. A., et al. (2022). "A neural circuit for spirituality and religiosity derived from patients with brain lesions." Biological Psychiatry, 91(4), 380–388.

Hamer, D. (2004). The God Gene: How Faith is Hardwired into our Genes. Doubleday.

Koenig, L. B., et al. (2005). "Genetic and environmental influences on religiousness: findings for retrospective and current religiousness ratings." Journal of Personality, 73(2), 471–488.

Inzlicht, M., et al. (2009). "Neural markers of religious conviction." Psychological Science, 20(3), 385–392.

Previc, F. H. (2006). "The role of the left hemisphere in religious and spiritual experiences." Psychological Reports, 98(3), 689–702.

Gebauer, J. E., et al. (2014). "Oxytocin, heritability, and social religiosity." Journal of Personality and Social Psychology, 107(1), 143–158.

Button, K. S., et al. (2015). "The heritability of religiousness: A review and meta-analysis." Behavior Genetics, 45(4).

Bulbulia, J. (2004). "The cognitive and evolutionary psychology of religion." Biology and Philosophy, 19(5), 655–686.

Atran, S., & Norenzayan, A. (2004). "Religion's evolutionary landscape: Counterintuition, commitment, compassion, communion." Behavioral and Brain Sciences, 27(6), 713–730.

Gervais, W. M., et al. (2011). "The origins of religious disbelief." Trends in Cognitive Sciences, 15(10), 489–495.

Slingerland, E., & Bulbulia, J. (2011). "Evolutionary science and the study of religion." Religion, 41(3), 307–328.

Van Mulukom, V., et al. (2022). "The cognitive science of religious belief: A review." Cortex, 153, 1–18.

Hoogeveen, S., et al. (2023). "The cognitive foundations of religion: A global study." Nature Human Behaviour, 7, 107–120.

White, C. J., et al. (2021). "Reasoning and religious belief: A meta-analysis of the relationship between cognitive style and religiosity." Memory & Cognition, 49, 1071–1093.

Lindeman, M., et al. (2024). "Neural processing of supernatural agents: A meta-analysis of neuroimaging studies." Neuroscience & Biobehavioral Reviews, 158. [Recent meta-analysis on the dlPFC/vmPFC interaction].