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# Neurotheological Approaches to Jerusalem Syndrome: Spiritual, Cultural and Cognitive Dimensions of Religious Experience

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This paper investigates Jerusalem Syndrome, a unique behavioral phenomenon observed in pilgrims visiting Jerusalem. We examine its defining features and the cognitive, cultural, and neurological mechanisms underlying its manifestation. Using the framework of neurotheology — an interdisciplinary field exploring the relationship between brain function and religious experience — the study situates the syndrome within broader discussions on the neurocognitive foundations of spirituality. Drawing on the work of Persinger and Newberg, as well as recent developments by McNamara, it evaluates how altered neural activity in specific brain regions or networks may contribute to religious ideation, hyperreligiosity, or delusional states. The analysis also considers how temporal lobe epilepsy — a condition frequently linked to heightened spiritual experiences — may intersect with sociocultural and symbolic stimuli to precipitate symptoms related to the syndrome. While environmental triggers are important, this paper raises the need to further investigate whether susceptibility to Jerusalem Syndrome may be shaped by neurological factors or by (biologically influenced) spiritual predispositions. This research offers a multidimensional interpretive model for Jerusalem Syndrome, synthesising insights from psychiatry, neuroscience, and religious studies.

## INTRODUCTION

Jerusalem has profound spiritual and theological significance across Judaism, Christianity, and Islam. It has been long revered as a nexus of pilgrimage, prophecy, and eschatological longing (Elon, 1989). This symbolic significance, combined with the psychological intensity of religious expectation and the dislocation of travel, has been linked to a rare but striking phenomenon known as "Jerusalem Syndrome" (Bar-El et al., 2000, p. 86; Kalian et al., 2008). While often described as a transient psychotic state – occurring in otherwise mentally stable individuals – the syndrome evades easy classification. It represents the convergence of religious delusions, situational triggers, and behavioral uniformity; deeper mechanisms may be at work.

This study approaches Jerusalem Syndrome through the lens of neurotheology – an interdisciplinary field exploring the neural correlates of religious and spiritual experiences (Newberg et al., 2001; Newberg & d'Aquili, 2002; Persinger, 1983, 2001). Neurotheological models offer insight into how specific brain regions, particularly within the temporal lobe, may underlie altered states of consciousness and spiritual ideation (Devinsky & Lai, 2008; Persinger, 2001). Drawing on foundational research by Persinger et al. (1983; 2001; 2005), this investigation considers how neuroscientific methods might contribute to a broader understanding of religious experience and its pathological expressions.

Despite the syndrome's visibility in psychiatric literature, there remains a lack of integrative research that combines cultural, psychological, and neurological perspectives. This paper addresses that gap by proposing a multidimensional model grounded in neurotheological inquiry. It invites broader reflection on how science approaches spirituality. Perhaps Jerusalem Syndrome should be viewed as a phenomenon that is partially explainable in terms of neural mechanisms, while still incorporating belief, meaning, and tradition – rather than treating it as a pathology. Understanding Jerusalem Syndrome thus raises questions around what it means for spirituality to be "explained" and how to tackle interdisciplinary research at the boundary between mind and faith.

### Jerusalem Syndrome and Its Characteristics

Jerusalem Syndrome typically affects tourists or pilgrims just arriving in the city, with symptoms often resolving spontaneously within a matter of days (Kalian et al., 2008). Several features distinguish the syndrome from other psychiatric conditions – the sudden onset of religious delusions, its consistent thematic structure (rooted in spiritual transformation), and its frequent occurrence in individuals without prior diagnoses.

**Figure 1**
*Man claiming to be the Messiah during an episode of Jerusalem Syndrome (Jerusalem, 2010). Photo by Jacek Proszyk, CC BY-SA 4.0, via Wikimedia Commons.*

Patients often identify with a prophetic or biblical figure and engage in ritualized or symbolic behaviors. These include obsessive cleanliness, social withdrawal, public preaching, and compulsive citation of scripture. The behaviors follow a recognisable trajectory, often beginning with anxiety or unease, followed by the compulsion to visit holy sites, and culminating in intense religious expressions. Some individuals fashion white garments from hotel linens or attempt to deliver impromptu sermons on themes of moral purification (Kalian et al., 2008). The symbolic logic of these actions is often coherent within a religious framework, reflecting a transient but deep conviction of divine purpose.

Historical and clinical records offer vivid illustrations. Jerusalem syndrome was first documented by Dr. Heinz Herman (1937) in the 1930s (Herman, 1937), who observed cases among European pilgrims. One notable case involved a British woman who ascended Mount Scopus each morning with a cup of tea to await the Second Coming (Nashawaty, 2012). Between 1980 and 1993, over 1,200 tourists exhibiting psychotic symptoms linked to Jerusalem were referred to Kfar Shaul Mental Health Center, with 470 requiring hospitalisation. On average, about 100 cases are reported annually, 40 of which result in inpatient care, highlighting the syndrome's clinical significance and prevalence (Bar-El et al., 2000).

## Types of Jerusalem Syndrome

In a British Journal of Psychiatry article, Bar-El et al. (2000) proposed a typology of Jerusalem Syndrome, distinguishing three clinical forms based on psychiatric history and symptom presentation.

Type I occurs in individuals with a preexisting psychotic disorder who arrive in Jerusalem already exhibiting religious delusions. These cases often involve messianic ideation or apocalyptic missions and are typically shaped by longstanding pathological beliefs. Type II involves individuals with intense ideological or religious preoccupations regarding Jerusalem, though without a formal psychiatric diagnosis. These beliefs are often shared by small sectarian or marginal groups and may not qualify as pathological. Type III, the most widely cited form, involves previously asymptomatic individuals who develop acute psychosis after arriving in Jerusalem. Delusions of persecution or divine selection are common. Bar-El et al. (2000) documented 42 cases over a 13-year period, though the chronicity of symptoms remains undetermined.

Psychological anthropologist Yoram Bilu argues against attributing the cause of Jerusalem Syndrome solely to the city (Joshi, 2021). He suggests that Jerusalem functions primarily as a trigger for individuals with preexisting psychiatric vulnerabilities – particularly in cases consistent with Bar-El et al.'s (2000) Type I classification.

While Jerusalem Syndrome is not formally listed in the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; American Psychiatric Association, 2013), its associated symptoms – such as delusions, hallucinations, and disorganized thought – are recognised within broader diagnostic categories. Clinicians often treat it as a context-specific psychotic presentation (Kalian et al., 2008).

## Clinical and Cultural Dimensions of Jerusalem Syndrome

Cultural factors play a significant role in Jerusalem Syndrome's development and persistence. In Religious Delusions: Finding Meanings in Psychosis, Bhavsar and Bhugra (2008) argue that religious delusions should not be viewed merely as auxiliary symptoms of psychiatric illness but as meaningful expressions shaped by cultural and symbolic frameworks. They describe the "plasticity of religious delusions" (Bhavsar & Bhugra 2008, p. 166) as epiphenomena of an underlying disease process, emphasising the role of religious beliefs, symbols, and upbringing in shaping both the structure and content of psychotic episodes.

Silva et al. (1997), found that individuals with religious delusions exhibited greater symptom severity, poorer functioning, and a higher likelihood of violence. Although these studies do not specifically examine Jerusalem Syndrome, they provide a critical foundation for understanding it. The frequent presence of intense religious imagery, ritualised behavior, and eschatological expectation suggests that familial expectations, cultural conditioning, and symbolic familiarity may contribute to the syndrome's emergence and persistence.

It may be hypothesised, then, that individuals raised within traditions emphasising biblical narratives – particularly those involving divine mission, prophetic fulfillment, or moral purity – are more susceptible to spiritually-themed delusions when placed in a symbolically charged environment like Jerusalem. Bhavsar and Bhugra (2008) emphasise the importance of incorporating these cultural influences into both the interpretation and clinical treatment of such conditions.

This symbolic intensity is particularly pronounced in Jerusalem – one of the most historically and religiously significant cities in the world. Spiritual iconography is densely embedded, especially in the Old City. The area encompasses sacred landmarks that are central to the three major Abrahamic religions – Judaism, Christianity, and Islam – such as the Church of the Holy Sepulchre, the Western Wall, the Dome of the Rock, Via Dolorosa, and the Tower of David (Armstrong, 1996; Peters, 1985). Religious inscriptions, iconography, and architecture saturate the environment, creating a network of stimuli capable of eliciting spiritual responses. For individuals predisposed to psychoreligious vulnerability, such an immersive symbolic setting may heighten spiritual ideation or precipitate symptomatic episodes consistent with Jerusalem Syndrome (Bar-El et al., 2000; Bhavsar & Bhugra, 2008).

**Figure 2**

*Pilgrimsan Pilgrims in Jerusalem during Holy Week, early 20th century. Photo via Wikimedia Commons, licensed under CC BY-SA 2.0.*


The syndrome's manifestation across the three religions indicates that it transcends specific theological frameworks. Instead, it reflects the interaction between individual cognitive schemas and an environment dense with culturally resonant religious symbols. This cross-traditional prevalence suggests that its underlying mechanisms are grounded in widely shared sociocognitive and affective processes, which are influenced by belief systems, symbolic conditioning, and neurocognitive predispositions.

## "Sister" Syndromes

Jerusalem Syndrome is not the only site-specific psychiatric phenomenon. Related conditions include Stendhal syndrome, also known as Florentine syndrome (Magherini, 1989, as cited in Patel & Thomas, 2020). Individuals visiting Florence may experience intense emotional reactions to art – sometimes accompanied by dizziness, disorientation, or even transient loss of consciousness (Wilson & Cherney, 2022). During her tenure at the Santa Maria Nuova Hospital in Florence, Dr. Graziella Magherini documented about 106 such cases among tourists (Patel & Thomas, 2020).

Paris Syndrome is also comparable. This condition was first described in 1986 by Japanese psychiatrist Professor Hiroaki Ota (1986, as cited in Witztum & Kalian, 2016). When primarily Japanese tourists confront the stark discrepancy between their idealized image of Paris and the city's reality, they may experience acute psychiatric symptoms such as delusional states (Witztum & Kalian, 2016). Both syndromes highlight the profound psychological effects that culturally and symbolically saturated environments can exert on vulnerable individuals.

What unites these site-specific phenomena is a shared psychological vulnerability to symbolic overload. Whether artistic (Florence), cultural (Paris), or religious (Jerusalem), each syndrome arises when a visitor's internal expectations collide with an environment saturated with emotionally charged or idealised meaning. In all three, there is a struggle to reconcile expectation with reality, resulting in dissociation, emotional dysregulation, or psychotic symptoms (Witztum & Kalian, 2016; Wilson & Cherney, 2022). These conditions reflect the difficulty of integrating transcendent, aesthetic, or spiritual experiences when confronted with a place perceived as sacred, sublime, or mythically significant.

Although Jerusalem Syndrome is often discussed alongside these disorders – as in Witztum and Kalian's (2016) comparative study, Jerusalem Syndrome and Paris Syndrome: Two Extraordinary Disorders – it is distinguished by its uniquely religious character. It is particularly associated with spiritual delusions and preexisting theological ideation. Unlike Stendhal or Paris Syndrome, its symptoms may not be entirely dependent on external triggers. Instead, they appear to emerge from an internal convergence of theological anticipation, symbolic resonance, and underlying psychological vulnerability.

## Applying Neurotheology to the Study of Jerusalem Syndrome

Jerusalem syndrome remains relatively underexamined in psychiatric literature and is frequently treated as a clinical anomaly – an outlier rather than a subject of sustained interdisciplinary inquiry. Although linked to psychotic disorders, its transient expression, cultural specificity, and consistent religious themes call for a more expansive analytical lens. Neurotheology, an emerging field at the intersection of neuroscience and religious studies, provides such a lens by exploring the neural basis of spiritual experience.

Rather than classifying Jerusalem Syndrome narrowly as a subtype of schizophrenia[1] – or dismissing it as religious hysteria, which Amos Elon (1989) termed fièvre Jérusalemienne[2] (Jerusalem fever) – this paper proposes a multidimensional approach. Building on Bhavsar and Bhugra (2008), who emphasize the symbolic and social embeddedness of religious delusions, neurotheology enables us to interpret such episodes not merely as pathology but as phenomena shaped by brain function, cultural context, and spiritual cognition.

At its core, neurotheology applies methods such as functional magnetic resonance imaging (fMRI), electroencephalography (EEG), and positron emission tomography (PET) to investigate how religious experiences correlate with patterns of neural activity (Newberg et al., 2001). By doing so, it generates hypotheses about the neural mechanisms underlying spiritual states – insight that is particularly valuable when examining conditions like Jerusalem syndrome, which blend psychotic and religious elements in context-specific ways.

Importantly, adopting a neurotheological framework also invites deeper reflection on the epistemological boundaries of science and religion. While some proponents view neurotheology as a form of progress – bringing scientific legitimacy to spiritual phenomena – others caution that this approach may reduce complex spiritual experiences to biological processes alone. This paper acknowledges that any claim of "progress" in understanding spirituality through neuroscience is inherently contingent, being shaped by assumptions from both secular and theological domains. Nonetheless, in the case of Jerusalem syndrome, neurotheology provides a productive lens for integrating empirical research with the symbolic and experiential dimensions of religious psychosis.

## Neuroimaging Religious Experience: the Newberg Studies

Andrew Newberg, a prominent neuroscientist in neurotheology, used neuroimaging techniques – including functional magnetic resonance imaging (fMRI), positron emission tomography (PET), and single-photon emission computed tomography (SPECT) – to investigate brain activity associated with spiritual and religious experiences (Newberg & d'Aquili, 2002). These methods have identified specific neural regions active during meditation, prayer, and trance states, and have also been employed in research on neurological and psychiatric disorders such as clinical depression, Alzheimer's, and Parkinson's diseases (Newberg et al., 2001).

Newberg et al. (2001) conducted several neuroimaging studies examining individuals in states of profound devotion – including Tibetan Buddhist meditators, Sufi mystics, Franciscan nuns, and Pentecostals. Their studies consistently revealed distinct neural activation patterns during spiritual practices, characterised by increased regional cerebral blood flow (rCBF) in regions involved in attention, emotional regulation, and self-awareness, such as the cingulate gyrus, prefrontal cortex, and thalamus. In a notable experiment, Tibetan Buddhist meditators were scanned before and after prolonged meditation using radiopharmaceutical tracer hexamethylpropyleneamine oxime (HMPAO) for SPECT imaging. The findings indicated significant rCBF increases in the cingulate gyrus, frontal cortex, dorsolateral prefrontal cortex (DLPFC), and thalamus, accompanied by decreased activity in the parietal and lateral temporal lobes (Newberg et al., 2001; Numssen et al., 2021).

Decreased activity in the parietal lobes – regions crucial for spatial orientation and self-other distinctions – suggests a neural basis for experiences of spacelessness, timelessness, and feelings of unity frequently reported in deep meditation (Newberg & d'Aquili, 2002). Such alterations could neurologically underpin the subjective experience of "oneness with the universe" (Newberg et al., 2001, p. 25; Vago & Silbersweig, 2012) – a feeling described extensively in Buddhist meditation practices.

In another significant study conducted with Brazilian Spiritist mediums (Peres et al., 2012), subjects performing psychography – a form of automatic writing believed to be guided by spirits – exhibited reduced cerebral blood flow in the left hippocampus, right superior temporal gyrus, left anterior cingulate cortex, and right precentral gyrus. These brain regions are involved in self-monitoring, language processing, executive control, and bodily self-awareness. Participants also reported dissociative experiences, diminished self-awareness, and perceptions of external agency over their actions. Notably, structured clinical interviews established that participants had no prior psychiatric history or medication use that could have influenced these findings, strengthening the study's claims regarding the neurological correlates of altered states of consciousness (Peres et al., 2012).

When applying these controlled, laboratory-based findings to Jerusalem syndrome, however, certain methodological considerations arise. Unlike controlled environments, the manifestation of Jerusalem syndrome involves uncontrolled and dynamic real-world conditions – complex psychological, cultural, and environmental interactions that differ substantially from laboratory meditation or trance states. While Newberg's experiments indicate neural mechanisms potentially associated with spiritual and dissociative experiences, they establish correlation rather than causation.

Still, the documented reduction in parietal, hippocampal, and frontal-lobe activity during intense spiritual states provides a plausible neurophysiological basis for some symptoms observed in Jerusalem syndrome, such as altered perception of self and surroundings, delusions, and a sense of external agency. It is, therefore, hypothesised that similar neurological processes may contribute – though not exclusively or causally – to the complex phenomenology of Jerusalem syndrome. Nonetheless, given that other research emphasises temporal-lobe involvement in religious experiences, the following section will explore perspectives focusing on temporal-lobe functions and related hypotheses more directly.

## Temporal Lobe Function and Religious Experience: Persinger's Model

In his influential paper, "Religious and Mystical Experiences as Artifacts of Temporal Lobe Function," Michael Persinger (1983) proposed that religious experiences result from transient electrical microseizures within deep temporal lobe structures, notably the amygdaloid-hippocampal complexes. He identified these regions as particularly suited to generating

[1] *Fastovsky, N., Teitelbaum, A., Zislin, J., Katz, G., & Durst, R. (2000). Jerusalem syndrome or paranoid schizophrenia? Psychiatric Services, 51(11), 1454.*

[2] *Elon, A. (1989). Jerusalem, city of mirrors. Little, Brown.*

religious experiences because of their role in shaping the sense of self in relation to time and space, memory-driven conceptions of boundaries, and emotionally charged anticipatory states – especially those involving pain or death (Persinger, 1983).

These conical, deep structures help mediate how individuals integrate emotionally salient expectations with their spatial and existential orientation. As such, they provide a neural environment conducive to the emergence of symbolic and transcendent experiences, particularly in individuals with heightened emotional sensitivity or strong religious conditioning. Persinger states:

> The neuropsychological basis of religious experiences and God beliefs has been avoided by behavioral scientists. Yet these experiences, in conjunction with the confrontation and attenuation of death anxiety, constitute a major class of human behaviors whose frequency is rivaled only by sex and aggression (1983, p. 1255).

He also emphasised metaphorical language – processed through brain language centers – as particularly significant in enhancing religious imagery, potentially blurring symbolic and perceived realities (Persinger, 1983). Persinger's hypothesis is relevant for understanding Jerusalem syndrome, characterized by intense religious anticipation upon arrival in Jerusalem. According to Persinger, such heightened emotional arousal could activate temporal-lobe processes in susceptible individuals – those predisposed to mystical or spiritual ideation. This aligns with historical accounts, including Dr. Heinz Herman's 1930s case study of an English woman persistently awaiting the Second Coming (Nashawaty, 2012).

Central to Persinger's framework are temporal lobe transients (TLTs) – brief, localised electrical events resembling microseizures but lacking motor symptoms. These TLTs may evoke vivid emotional and spiritual states, including feelings of ecstasy, sensed presence, and altered consciousness. To empirically investigate this hypothesis, Persinger developed the God Helmet, which applies weak, patterned magnetic fields to the temporal lobes to experimentally induce spiritual experiences (Persinger, 2001; Granqvist et al., 2005). Studies involving over 1,200 participants found that temporoparietal stimulation frequently elicited a sensed presence, often interpreted as religious or supernatural beings – experiences heavily shaped by cultural context (Hitt, 1999; Persinger, 2001, 2005).

Unlike Newberg's imaging-focused approach during meditation and trance states, Persinger's model involves the direct stimulation of specific neural circuits. Nevertheless, both frameworks emphasize the centrality of distinct brain regions in spiritual cognition, offering complementary insights into possible neurobiological mechanisms underlying Jerusalem Syndrome.

## The God Helmet

In 2001, Persinger developed an apparatus designed to investigate the neural mechanisms underlying spiritual experiences, refining the device until his passing in 2018. Persinger (2001) posited that "all behaviors and experiences are created by the dynamic interplay of chemical and electromagnetic events within the human brain" (p. 515) and argued that "if all experiences are generated by brain activity, then experiences of God and spirits should also be produced by the appropriate cerebral stimulation" (p. 1079). He hypothesised that weak, physiologically patterned magnetic fields could influence neuroelectromagnetic processes associated with consciousness. Persinger and his colleagues conducted multiple double-blind studies in which weak, complex magnetic fields (~1 μT) were applied to the temporal lobes of volunteers (Persinger & Healey, 2002; Booth, Koren, & Persinger, 2005). Over the years, this research expanded to include more than 1,200 participants. Persinger and Healey (2002) anticipated that such stimulation could induce a "sensed presence" – a perceived awareness of another entity – reflecting the interplay between the left and right hemispheres in constructing self-perception and external agency. Persinger proposed that the left hemisphere mediates linguistic self-representation, while the right hemisphere contributes to the experiential feeling of an external presence (Persinger, 1983, 2001). As Jack Hitt (1999) explained:

> When the right hemisphere of the brain, the seat of emotion, is stimulated in the cerebral region presumed to control notions of self, and then the left hemisphere, the seat of language, is called upon to make sense of this nonexistent entity, the mind generates a 'sensed presence' (para. 4).

**Figure 3**

*The "God Helmet" (Koren Helmet), an experimental apparatus developed by neuroscientist Michael A. Persinger to investigate spiritual and mystical experiences through transcranial magnetic stimulation. Image courtesy of the National Museum of American History, Smithsonian Institution. CC0 1.0 Public Domain*

Empirical data from these experiments (Persinger, 2001, 2005, 2010) indicate that participants frequently reported the sensation of a nearby presence during stimulation. These experiences were interpreted through a personal or cultural lens – attributed to figures like angels, deceased relatives, Jesus, Mohammed, the Virgin Mary, or the Sky Spirit (Hitt, 1999). The most intense mystical states occurred when a frequency-modulated pattern was applied to the right hemisphere, followed by a burst-firing sequence replicating limbic neuronal discharges typical in temporal lobe epilepsy (Persinger, 2001).

However, these findings are correlational rather than causal, and their generalisability beyond laboratory conditions is limited. Jerusalem Syndrome, in contrast, unfolds in complex, uncontrolled environments shaped by emotional intensity, cultural symbolism, and religious expectation. While the God Helmet experiments suggest that temporal lobe stimulation can evoke spiritual experiences, they do not fully account for the multifaceted conditions involved in Jerusalem Syndrome. Nonetheless, the experiments offer a useful neurological model for how specific brain functions might shape perceived spiritual encounters.

## Epilepsy and Religious Experience

Persinger's replication of neuronal firing patterns seen in epileptic patients aligns with broader neuroscientific research linking epilepsy and religious experiences, especially regarding temporal lobe involvement in mystical phenomena. Devinsky and Lai (2008) reviewed 150 years of clinical observations, highlighting associations between seizures – particularly temporal lobe epilepsy (TLE) – and altered religious perceptions occurring during ictal, postictal, and interictal phases. They proposed that while persistent religious beliefs might primarily involve the frontal regions of the right hemisphere, transient ecstatic experiences appear closely linked to temporal lobe activity.

Historically, epilepsy has frequently been associated with heightened religiosity and experiences interpreted as divine or supernatural (Bone & Dein, 2021). A striking historical example is Joan of Arc, whose mystical visions and auditory experiences have often been retrospectively analysed as manifestations of temporal lobe epilepsy (Picard, 2015). At the Third International Congress on Epilepsy, Brain, and Mind, Picard (2015) closely examined Joan of Arc's 1431 trial documents, emphasising episodes of sudden flashes of light and detailed visual and auditory hallucinations — typical phenomena reported in epileptic seizures. Neurologist Oliver Sacks (2012) similarly described these episodes as temporal lobe epilepsy with prominent auditory components. Joan of Arc's cultural and religious background undoubtedly shaped the narrative of these episodes, deeply reinforcing her conviction of a divine

mission.

**Figure 4**

*Joan of Arc on horseback, retrospectively associated with temporal lobe epilepsy in historical and neurotheological analyses. Public domain image via Wikimedia Commons*

Jerusalem Syndrome parallels temporal lobe epilepsy in significant ways, notably in its pronounced sense of religious mission, visionary encounters, and intensified emotional states (Kalian et al., 2008). Both experiences involve disruptions of ordinary perceptual boundaries, often resulting in vivid religious visions or delusions; however, caution is warranted in applying an epilepsy-based neurological explanation exclusively to Jerusalem Syndrome, as the relationship remains correlational rather than causal. Furthermore, retrospective analyses and neurological interpretations have inherent limitations due to the complex interplay of psychological, cultural, and environmental contexts influencing such profound religious experiences.

## DISCUSSION

This paper has examined Jerusalem Syndrome through multiple disciplinary lenses, integrating psychiatry, anthropology, cognitive science, and neuroscience to expand understanding beyond its conventional classification as a psychiatric disorder.

The expression of Jerusalem Syndrome likely arises from a complex interplay of cultural, psychiatric, and environmental factors. A comprehensive understanding requires examining the neurological mechanisms underlying religious experiences. Studies by Newberg et al. (2001), Newberg and d'Aquili (2002), Newberg (2001), Persinger (1983, 2001, 2005), Devinsky and Lai (2008), and Picard (2015) were selected for their insights into the neurological foundations of spiritual experiences. These investigations reveal measurable alterations in brain function, particularly in the temporal and parietal lobes, and regions associated with reasoning and language (e.g., left hippocampus, right superior temporal gyrus, left anterior cingulate cortex, right precentral gyrus).

Recent advances in neurotheology, exemplified by McNamara et al. (2024), represent a decisive shift from reductionist, localisation-based models toward a systems neuroscience perspective that emphasises dynamic, network-level interactions underlying religious and spiritual experience. Whereas Persinger (2001) attributed mystical phenomena to transient microseizures in the temporal lobes, and Newberg et al. (2001, 2002) associated spiritual practice with region-specific activation in frontal and parietal cortices, McNamara and colleagues propose an integrative framework linking spirituality to distributed neural dynamics. Their model identifies coordinated patterns of up- and down-regulation across large-scale networks — including the default mode, frontoparietal, and salience systems – as mechanisms modulating affective regulation, self-referential cognition, and the phenomenology of transcendence (McNamara et al., 2024). This systems-level approach provides a more comprehensive neurobiological account than earlier localised theories and offers a productive lens for interpreting context-specific psychotic or revelatory experiences such as Jerusalem Syndrome. Moreover, McNamara's work underscores that neurotheology is an evolving interdisciplinary field, continually refined by advances in neuroimaging, computational modelling, and cognitive neuroscience.

Examining Jerusalem Syndrome through a neurotheological lens raises critical questions about what constitutes genuine "progress" in the neuroscientific study of spirituality. Although neuroscience has advanced empirical understanding of the neural correlates of spiritual and transcendent states, it remains constrained by epistemological limits when addressing phenomena that are inherently subjective, context-dependent, and phenomenologically ineffable.

Further research should include brain imaging studies on individuals diagnosed with Jerusalem Syndrome to determine whether their neural activity patterns align with those identified by Newberg, Persinger, or McNamara. Additionally, as previously highlighted, cultural and religious symbolism — deeply significant to those visiting Jerusalem — may interact with underlying neurological processes, potentially triggering or exacerbating the syndrome's manifestations. Thus, future research should map neural correlates and explore how specific religious symbols and environments modulate brain activity. Furthermore, future studies should examine whether neurological dysfunctions, such as temporal lobe epilepsy, contribute directly or indirectly to Jerusalem Syndrome. These investigations raise broader questions about whether religiosity and spirituality have innate neurological foundations or are predominantly acquired through cultural and environmental interactions, and whether these elements can be quantified effectively through neuroimaging and cognitive studies. Additionally, this line of inquiry prompts consideration of whether faith and spiritual predispositions have a genetic basis, as proposed by Hamer (2004) in The God Gene. Clarifying these issues may significantly impact our understanding of cognitive and evolutionary dimensions of spirituality.

As Persinger (2001) observed, the presence of epileptiform activity in a stable, middle-aged woman who "reported (with that typical radiant smile) she had just experienced God's presence" underscores the imperative for scientific investigation into "the brain correlates of this culmen of all para-normal experiences" — a necessity that, as he noted, "became evident" (p. 519).

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