

**Neurocognitive Readings of Ancient Religious Texts:  
Methodological Liabilities and Possibilities**

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**Abstract (English)**

More and more, scientifically-minded scholars of religion recognize the potential value of interpreting ancient religious texts (such as the Bible or medieval mystical writings) with a view toward neuroscientific advances in religion and human cognition. Yet, there are significant hermeneutical and scientific obstacles that thwart precisely this interdisciplinary interpretive task. This article details several of the methodological problems associated with neurocognitive readings of ancient religious texts. Then, drawing on the recent work of neuroscientist Patrick McNamara and philosopher of religion Wesley J. Wildman, it charts a path toward a new interdisciplinary methodology that begins to overcome precisely these difficulties. Specifically, it suggests an interpretive strategy of attuning to specific, scientifically salient phenomenological features of religious experience, as such features are attested to in ancient texts. Such a method may provide a way to begin to responsibly relate the intuitions of ancient religious and/or mystical texts with the findings of contemporary cognitive sciences.

**Abrégé (German)**

Mehr und mehr wissenschaftsorientierte Theologen erkennen den potenziellen Wert der Interpretation altertümlicher religiöser Texte (wie die Bibel oder mittelalterliche mystische Schriften) in Hinblick auf neurowissenschaftliche Fortschritte in Religion und menschlicher Kognition an. Dennoch bestehen signifikante hermeneutische und wissenschaftliche Hürden, die sich speziell dieser interdisziplinären interpretativen Aufgabe in den Weg stellen. Dieser Artikel legt im Einzelnen verschiedene dieser methodologischen Probleme dar, die mit neurokognitiven Lesarten altertümlicher religiöser Texte verbunden sind. Dann wird, mit Bezug auf das aktuelle Werk des Neurowissenschaftlers Patrick McNamara und des Philosophen Wesley J. Widman, ein Pfad in Richtung einer neuen interdisziplinären Methodologie aufgezeigt, der genau diese Schwierigkeiten zu bewältigen beginnt. Dieser legt eine interpretative Strategie der Abstimmung auf spezifische, wissenschaftlich herausstechende phänomenologische Merkmale religiöser Erfahrung nahe, als solche Merkmale in altertümlichen Texten nachgewiesen sind. Eine derartige Methode soll einen Weg ermöglichen damit zu beginnen, sich verantwortungsvoll auf die Intuitionen altertümlicher religiöser und/oder mystischer Texte mit den Erkenntnissen zeitgenössischer Kognitionswissenschaften zu beziehen.

## **I. Introduction**

Over a century ago, William James ([1902] 2002) set provocative precedent for interpreting well-known, classic religious and mystical texts through the lens of modern psychology. Today, as the neurosciences begin to shed light on the neurally embodied, evolutionarily-conditioned nature of religious and spiritual experiences (RSEs), psychological readings of ancient religious texts (ARTs) have given way to

cognitive neuroscientific readings. For many participants in today's religion and science dialogue, it is exciting to consider the new interpretive vistas that might be opened by tracing the (often striking) consonances between classic religious or mystical narratives and modern neuroscience.<sup>1</sup> Yet recently, some have voiced concern about the need for greater nuance in precisely this endeavor—especially with regard to terminological distinctions, interpretive strategy, and overall claims about neurological studies of religious and spiritual experiences (RSEs) (Michael Spezio 2011; Ann Taves 2011).

In this paper, I address several of the major methodological problems that attend the task of reading a centuries-old religious text in the light of contemporary cognitive neuroscientific studies of religious and spiritual experiences (RSEs). I argue that this enterprise, while promising, needs a considerable level of caution and precision as regards (first) questions about the degree to which ARTs reveal first-person subjective spiritual experience, and (second) questions about whether neurological research into RSEs is presently *itself* methodologically mature enough to be directly applicable to religious texts written in different cultures and eras. In other words, I am suggesting a heightened sensitivity to procedural liabilities on both hermeneutical and scientific levels.

After calling attention to the need to keep these two broad classes of methodological challenges at the forefront of textual-scientific analyses, I suggest a strategy for beginning to move beyond them. Here, in dialogue with the recent work of philosopher of religion Wesley J. Wildman and neuroscientist Patrick McNamara, I suggest that an interpretive strategy which *attunes to textual intimations of mid-level phenomenological features of spiritual experience* is, at least for now, an appropriately cautious yet appreciably constructive way to approach a cognitive scientific reading of an ART.

## **II. Acknowledging Hermeneutical Limitations**

To what degree can we assume that our encounter with a centuries-old or millennia-old religious text exposes, reveals, or gives us access to the immediate, first-person experience of the author? This is a basic hermeneutical question that anyone attempting a neurocognitive reading of an ART must answer.

Colleen Shantz, in her recent neurological reading of the Apostle Paul, acknowledges that there are difficulties regarding “critical access to Paul’s experience,” and that she intends to center attention on “the *text* of Paul’s description of ascent” (Shantz 2009, 90).<sup>ii</sup> Yet her main focus throughout the book is, nevertheless, on Paul’s religious experience and the immediacy of Paul’s brain states in said experience. Indeed, Shantz’ second chapter is titled “Paul’s Brain.” There seems to be an implicit assumption here that the author’s experience, and the possible neural correlates of that experience, are plainly evident on the surface of the biblical text, and that comparisons with modern studies of mind, brain, and spiritual experience can commence in a straightforward way. Is this assumption warranted?

While interest in thinking about the neurology of ancient religious authors is a recent trend, there exists an established tradition of reading religious texts from the past (both near and distant) in view of psychological dynamics. And yet, there are significant problems with psycho-historical (and, by extension, neurocognitive-historical) interpretations of the writings of religious and mystical writers long deceased.

For obvious reasons, Augustine’s *Confessions* has been a perennial favorite among psycho-historians (see Donald Capps and James Dittes, 1990). In a 1993 essay, Diane Jonte-Pace offers incisive comments on the interpretive liabilities that attend psychological readings of Augustine’s *Confessions*—comments that, I believe, are applicable to contemporary neurocognitive readings of religious texts composed in the distant past.

Jonte-Pace points to three “foundational problems” that plague psycho-history, all having to do with hermeneutics (the philosophy of interpretation). The first has to do with the issue of the authorial subject. Echoing Foucaultian intuitions,<sup>iii</sup>

Jonte-Pace questions whether the “subject” or “self” portrayed in the text of *Confessions* is “a portrait of the inner life of an individual or... a rhetorically constructed account of a subject as prototype or archetype” (Diane Jonte-Pace 1993, 73). In other words, Jonte-Pace sees the Augustine portrayed in *Confessions* as precisely *not* a transparent, soul-bearing self, but rather, a “rhetorically constructed self” which functions for readers as an inspiring and educative allegorical example of a typical soul on an ideal journey toward a higher truth.

When this issue of the slipperiness of the authorial subject gets applied to a project like Shantz’, it raises suspicion about the extent to which the “mystical” or “ecstatic” events and experiences alluded to in parts of the Pauline corpus (e.g., 2 Cor. 12:1-4) are really patently-remembered, straightforwardly-narrated, first-person descriptions of episodes and reactions. Rather, the “self” Paul presents may be (at least in part) a fictionalized self whose contours are carefully constructed so as to inspire and teach a particular community with particular questions, needs, and problems. The quest for the rhetoric of the mystic, we might say, should precede the quest for the neurology of the mystic (Jonte-Pace 1993, 72).

Cultural difference is the second problem to which Jonte-Pace points. At the heart of this issue is “the hermeneutical problem of how we perceive difference” between an ancient culture and contemporary culture (Jonte-Pace 1993, 75). In Jonte-Pace’s view, psycho-historical interpretations of Augustine tend toward a “hermeneutic of sameness” which neglects the Ricoeurian moment of distanciation (foreignness, alterity) that precedes each authentic interpretive act.

In her neurological rereading of Paul, Shantz notes that cultural influences foreign to modern interpreters (such as first-century Jewish mysticism) clearly bear upon Paul’s “religious ecstasy.” She goes on to argue that, due to the similarity between the brains of people in antiquity and the brains of people today, and the “neurotypicality” of Paul’s brain, we should avoid reducing Paul’s experience to culture and should look to contemporary scientific understandings of the brain to help “account for the fullness of [Paul’s] ecstasy”

(Shantz 2009, 63). Yet Shantz' strong claim for Paul's "neurotypicality" (that Paul had no neural differences compared to 21<sup>st</sup> century people) is overstated, and, from the viewpoint of science, not really warranted (Spezio 2011, 3). Uncertainty exists regarding the degree to which the ostensive sameness of ancient and modern neural architecture can overcome cultural differences.

Finally, Jonte-Pace brings up the problem of historical feedback loops of meaning-production. In any given psycho-historical reading of the *Confessions*, there is an interesting hermeneutical circularity at work wherein, to large degree, "Augustine created the psyche that Freud was to describe and the theory Freud was to generate" (Jonte-Pace 1993, 78). In other words, psychoanalysis takes up the discourses of self and inner experience which, for centuries, had belonged to the domain of Christian theology and spirituality.

In light of Shantz' neurological reading of Paul, it is important to bear in mind that the Pauline "inner conflict" described in Romans 7:15 deeply informs the *Confessions*; in turn, theo-philosophical interpretations of the *Confessions* help give rise to Descartes' *cogito* (Menn 1998), which subsequently influences the Freudian notion of the psyche. Are vestiges of an ideational lineage running through Freud, Descartes, Augustine, and Paul laced subtly into neurocognitive models of self and experience—even if such vestiges are explicitly rejected (e.g., Damasio 2005)? The point is that there may be a need to acknowledge the limitations brought on by historical hermeneutical feedback loops—in other words, the ways in which the very 21<sup>st</sup>-century scientific models of self, mind, and experience utilized to analyze possible neurocognitive dimensions of ancient religious texts may be shaped, in part, by borrowed units of literary tradition rooted *in* those very texts.

While Jonte-Pace provides three important hermeneutical reasons to be cautious about conducting psychological or cognitive-neuroscientific interpretations of ARTs, this endeavor should not be wholly abandoned. In all likelihood, classic religious writings—Augustine's, Paul's, and

others—are “both rhetorically constructed and psychologically determined” (Jonte-Pace, 79). What is needed is a nuanced interpretive posture that acknowledges that while mystical, spiritual, or religious experience may be at some level attested to in the text, the author’s immediate spiritual experience is largely unavailable to us. What we have before us when we read ARTs are discoursed vestiges of intense, uncanny, or “special” experiences to which religious meaning has been ascribed by use of particular cultural and linguistic categories (Taves 2009).

Contemporary readers cannot access the first-person experiential contours (and associated neural activation patterns) of ancient religious or mystical authors. Statements about the actual brains, psyches, selves, and first-person experiences of specific ancient authors should be viewed as conjectural at best. Yet this conclusion ought not wholly derail the attempt to interpret ancient religious narratives with an eye to the phenomenological texture (and, perhaps, the cognitive-neural dynamics) of spiritual experience. Why this is the case will be explained in the third section.

### **III. Acknowledging Scientific Limitations**

Contemporary neuroscientific researchers must contend with some thorny methodological difficulties as they seek to isolate specific brain structures and systems associated with particular modes of conscious experience that people interpret as religious or spiritual. Since neurocognitive readings of religious texts must rely on the (to date, quite few) scientific investigations of the neurology of spiritual and religious experience,<sup>iv</sup> the procedural and conceptual problems that plague these scientific studies become inherited methodological liabilities for those wanting to bring cognitive neuroscientific insights to bear upon ARTs.

The first such problem concerns the reliability of subjective reports of spiritual experience in experimental settings. Narrative reports of inner mental process can be biased or inaccurate (Nisbett and Wilson 1977; Hurlbert and Heavey 2001). Even in ideal investigational conditions,

researchers' access to participants' experience is never "pure." In their 2010 study on the reliability of narratives in the psychological study of religious experience, Wildman and McNamara created the ideal combination of (on the one hand) test subjects dedicated to providing accurate narrations of a religiously significant experience in their recent past, and (on the other hand) raters dedicated to interpreting these transcribed narratives with precision and nuance. Nevertheless, raters of the narratives failed to detect certain highly salient features of the participants' religious experience. When participants took a 53-item self-report questionnaire which asked about phenomenological dimensions of their experience, features such as inward conversation, alterations in bodysense and perception, vividness of imagery, and subjective sense of volitional control emerged as significant; however, these were not picked up by those reading and rating the narratives—even a highly trained rater. Additionally, Wildman and McNamara discovered a "muting effect" wherein participant scores of phenomenological features on the self-report inventory were higher than the scores of the raters who were analyzing the narratives for the degree of salience for the same features (Wildman and McNamara 2010).

Now, it is important to note that this same study also provided evidence that, under certain conditions, researchers *can* rely to a significant degree on the reports of subjects engaged in introspective recall of a religiously important experience. Additionally, other researchers working at the intersection of neuroscience and phenomenology have advanced methods that can mitigate against some of the challenges of incorporating first-person data into cognitive neuroscience (Lutz and Thompson 2003). For our purposes, it is important to emphasize that, even under the best experimental conditions with live test subjects, crucial features of spiritual experience can go undetected in the complex interpretive space between subjects' recall and naming, and researchers' interpreting and rating. How much more might this be the case for attempts to detect neurocognitively salient features in ancient spiritual narratives?

Another challenge to scientific researchers seeking to understand neural correlates of spiritual experience is what I call the experiencing-naming circle. Named experience and the experience of naming are intertwined in written and spoken accounts of religious experience in such a way that transparency to experience is impossible for researchers, and maybe even to subjects themselves. In other words, immediate, first-person conscious experience is not quite the same as recalled and named first-person conscious experience. It is not at all clear what is the nature of the relationship between (on the one hand) “live” religious experience, which, in experimental conditions, is neurologically detectable in relative immediacy through fMRI, EEG, SPECT or other technologies, and (on the other hand) “named” religious experience—the semantic level of reporting, which is always past tense and narrated through socio-cultural-linguistic categories.

Religious experiences are often ineffable, and the categories and words used to describe them are always already established in particular patterns of culture and language. These cultural-linguistic patterns, once used to categorize an experience, will come back around to reinterpret the experience itself. Neuroscientist Michael Spezio, commenting critically on Shantz’ *Paul in Ecstasy*, points to this very issue by drawing attention to Ian Hacking’s philosophy of “dynamic nominalism” in which categories have “looping effects” such that “both the categorized/classified and the categorizers/classifiers reinterpret their own experience according to the lines of differentiation that are drawn in the very act of categorization” (Spezio 2011, 6; Cf. Hacking 1995). Just as the remembered experience shapes and guides the naming of said experience, so too does the process of naming come back around to influence the experience that is remembered. The experiencing-naming circle deepens the opacity of the relationship between test subjects’ first-person reports of spiritual experience, and measurements of the oxygenated hemoglobin levels (or electrical activity) in the brains of those subjects during spiritual experience. It also makes it problematic to use studies of particular, culturally- and linguistically-conditioned spiritual experiences (such as

Buddhist mindfulness meditation) to make generalized claims about spiritual or mystical experiences in other cultures, traditions, and languages.

The third important area of scientific limitation has less to do with methodology per se, and more to do with the inchoate state of the field. Research in the area of the neurocognition of religion is just developing. This means several things. First, scientists don't yet know which neural patterns (associated with spiritual or religious states) are culturally or religiously specific versus which patterns are stable across times and cultures. While RSEs are vastly complex (Wildman 2011, 49-50) the existing body of salient neuroscientific research contains studies of practitioners from a small number of quite different traditions. "Contemporary science is still far from being able to say that the neural processes involved with, say, Christian Centering Prayer, are similar to or identical with those observed in Buddhist apophatic practice" (Spezio 2011, 7). Additionally, technologies used for brain measurements are also in need of further refinement; as Spezio explains, "the limits of spatial and temporal resolution in most neuroimaging methods used with humans" means that "it is often impossible to determine whether overlaps of activation in multiple experiments actually involve identical neural patterns[.]" (Ibid., 6; see also Spezio 2001, 481-482).

There are more cognitive neuroscientific methodological limitations to which we could point, including, for example, problems regarding the modularity hypothesis of brain organization and function—a hypothesis which, while flawed, is one on which most brain studies must nonetheless depend (Wildman 2011, 50-51). For our purposes, the point of drawing attention to key conceptual problems associated with neuroscientific inquiry into RSEs is to underscore the need for high levels of restraint and nuance when relating cognitive neuroscience to classic religious and spiritual texts written in ages past. For instance, as of yet, there is no such thing as "the neurological model of trance" (Shantz 2009, 81) that could be used as an interpretive stratagem for drawing conclusions about the brains of religiously-minded authors writing in

diverse religions, cultures, and eras. There exists an impassible interpretive gulf between, on the one hand, diffuse phenomenological meta-classifications such as “trance,” “ecstasy, and “altered state of consciousness” (Ibid., 19) and, on the other hand, focused neurocognitive investigations of things like (for example) the effects of Centering Prayer on neural systems associated with social judgments (Ly et al. 2008). Given this abyss, is there a way forward for those interdisciplinary thinkers who yet see potential in drawing on cognitive neuroscience in the search for fuller understandings of ancient textual accounts of religious experience?

#### **IV. Attuning to Textual Intimations of Mid-Level Phenomenological Features**

I want to sketch the contours of an approach that may hold promise for forging a “middle way” that can start to bridge the meta- and micro- level interpretive chasm mentioned above. Drawing considerably on Wildman and McNamara’s recent work, I shall outline a method for carrying out neurocognitive readings of ARTs that approaches the text in question with a view to distinct mid-level phenomenological dimensions of religious experience that are implied or intimated in the text under consideration.

First, given the hermeneutical limitations discussed above, how should we think about “experience” when we approach a religious text—especially an ancient one? Between the Scylla of “one cannot get to experience via a text” and the Charybdis of “a text reveals the author’s personal experience” is, I propose, a hermeneutic of attunement to textual intimations of experience. This interpretive strategy analyzes contours of experience evident in a text without assuming that this necessarily involves examining the inner subjective state(s) of the historical author. While we cannot gain access to the private experiences of the author, we can affirm that certain aspects or dimensions of human experience are most certainly intimated, pointed to, referenced, or attested to, in the text. The extent to which such experiences are rooted in the personal history of the author is permanently unknown;

the author, at the time of writing, may have been consulting his/her own memory, an account of experience heard or read elsewhere, a general experiential atmosphere of a particular community, or some combination of these. The interpretive task for today's reader becomes one of searching for rhetorical clues that witness to elements of a certain class of human experience that is relevant and recognizable—both in the past and today. I am proposing a nuancing of the hermeneutical objective—a move *away from* peering through the surface of the text to the mind of the author, *toward* attuning to particular phenomenological dimensions of experience to which the discourse intimates or gestures.

What of these dimensions? In their recent (and ongoing) interdisciplinary work together, Wildman and McNamara have sought to isolate specific, formal cognitive features of what they call “intense experience.” A subtype of RSE, intense experience is marked by high levels of cognitive, existential, and affective potency and integration (Wildman 2011, 105). By applying a fine tuned retrospective analysis instrument to test subjects’ narratives of religious intensity,<sup>v</sup> Wildman and McNamara have been able to isolate precise cognitive contents and qualities of RSEs. Specifically, they have found that the following features appear to be distinctive phenomenological elements of intense religious experience: altered states of awareness, lowered rationality, increased inwardness, increased imagery, higher amounts of internal dialogue, increased affective complexity (viz., a mix of negative and positive affect), and lower levels of volitional control (Wildman and McNamara 2010). These sorts of phenomenological dimensions are “mid level” because they are lower in complexity than broad categories like “spiritual experience,” “trance,” and “mystical experience,” but not yet low enough to allow for neural processural modeling. The hope is that these mid-level features can eventually form the building blocks of a robust cognitive model of a certain subtype of RSE (namely, intense experience)—a model that can then be applied to diverse cultural and religious instantiations of RSEs, as well as link up with (and help to constrain) neurological models of RSEs.

Wildman and McNamara's approach takes into account (and at the same time helps to overcome) some of the methodological limitations to the scientific study of RSEs discussed above. My suggestion is that it may offer a way forward for a more methodologically sound way of reading an ART with an eye to its neurocognitive conditioning. How would this unfold?

First, as we have said, the interpreter would come to the text *not* looking to analyze the mind of the historical author. Rather, she would attempt to attune to ways in which the text attests to elements of a certain kind of human experience which, due to coarse structural neurocognitive similarities between ancient and contemporary humans, can be recognized as being broadly similar. But which elements? What kind of experience? As we have seen, Wildman and McNamara have begun to develop a detailed, empirically-based phenomenological profile of intense experience. To date, they have identified a suite of specific elements that appear distinctive to intense religious experience (listed above). The method I propose builds directly on these findings; it is one of probing the ancient text for rhetorical intimations of *exactly these* mid-level phenomenological characteristics. Thus, the reader would approach the text with questions like: Does the discourse contain descriptions of rich imagery, or inward orientation? Does it witness to a decrease in rational cognition? Is there evidence of affective complexity, internal dialogue, loss of volitional control, or altered awareness? If the answer to many or most of these questions is "yes," it would then become possible to say that the text gives rich reference to intense experience, and perhaps, to intense religious experience.

What would be the advantage(s) of making this determination? What do we gain by recognizing an ancient text as witnessing to a type of human experience currently undergoing intense empirical study at a cognitive psychological level (with plans for eventual neurological modeling)? It is admittedly vague (but not, I think, absurd) to state that such a connection may allow for fuller, greater understandings of ARTs. Heretofore hidden or neglected dimensions of the text's meaning may suddenly become

intriguingly prominent and complex. Beyond this, it is likely that as scientific research unfolds, we will see more clearly the evolutionary significance of RSEs (cf. Benvenuti and Davenport 2011). To view a centuries-old religious discourse as partial evidence of evolution-in-motion (whether adaptation or side effect) is an intriguing interpretive possibility. Furthermore, it may be that forging linkages between the wisdom contained in ancient religious discourse and embodied, evolutionarily-driven processes would open up new approaches to exploring some of the oldest theo-philosophical questions around, like, What is the ultimate meaning and value of experiences of ultimate meaning and value?

The precondition for these and other exciting scholarly possibilities is surely a method of conducting neurocognitive readings of ARTs that acknowledges limitations and seeks to balance caution with creativity. This paper is a first attempt at outlining such a method. While it does not solve all of the relevant procedural problems, it forges a rough path for future interdisciplinarians conducting scientifically-informed readings of religious or mystical texts from the past with hopes of making constructive interpretive progress in view of (and in spite of) great methodological obstacles.

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