Review of Andrew Newberg, *Neurotheology: How Science Can Enlighten Us about Spirituality,* Columbia University Press, New York 2018, 321 pp.

In his monograph, titled *Neurotheology: How Science Can Enlighten Us About Spirituality,* neuroscientist Andrew Newberg provides a fifteen-chapter examination of the intersections between brain science, psychology, and spiritual traditions. The work offers a comprehensive overview of how neuroscientific data might illuminate religious experience.

Newberg begins by framing the brain as both a mediator and a constraint of spiritual experience. The opening chapters define neurotheology's scope, balancing theoretical contemplation with practical applications like meditation. He then explores the evolutionary and psychological origins of faith, utilizing neuropathology and psychedelic studies to examine the biological machinery of transcendent states. The middle section investigates the neurological basis of myths and rituals—notably drawing parallels with biological mating behaviors—and suggests that neuroimaging may eventually evaluate the nature of morality. The book concludes by addressing "big questions" such as free will and mysticism, ultimately questioning whether God reflects universal truth or a sophisticated biological illusion.

Having examined Newberg's arguments, I find several points that warrant deeper critical reflection. In what follows, I will discuss seven major points.

1. Conceptual Confusion regarding the "Brain"

A primary concern is Newberg's conceptually vague and often tautological use of the term "brain". Throughout the text (occurring nearly 500 times), the "brain" is frequently treated not merely as a

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biological organ, but as an autonomous agent of thought and belief. For instance, Newberg claims that "the brain helps us have all thoughts" (p. 5) and that science and religion are "products of the human brain" (p .9).

This usage often borders on a category error, where the "brain" (the material substrate) is used to replace "cognition" or "the self" (the subject). To suggest that "the brain strives to integrate modern knowledge" (p. 288) is as logically precarious as claiming that a "computer completed a research paper". While the brain is the necessary biological basis for religious experience, it is not the experiencing subject itself. This confusion reaches its peak when Newberg asks, "Where exactly is consciousness located in the brain?" (p. 49). This reductionist approach echoes his earlier admission that he cannot "scientifically prove" his love for his wife (p. 21)—a query that seems as misplaced as searching for the anatomical location of "love" itself.

2. *Speculative Language and the Threshold of Scientific Validity*

Perhaps the most striking stylistic feature of Neurotheology is its pervasive reliance on hedging language. Terms such as "maybe," "seems," and "perhaps" appear over 400 times, creating a tone that, while intellectually humble, significantly softens the foundational claims of this "comprehensive discipline". For instance, Newberg's discussion of how rituals might activate specific neural components or trigger the release of neurotransmitters like dopamine and oxytocin (p. 113) remains largely speculative. While such hypotheses are vital for early-stage research, the cumulative effect of these qualifiers suggests that neurotheology's biological premises are built more on "what might be" than "what is". Consequently, when theological conclusions are drawn from such tentative neurophysiological data, they can hardly be presented as conclusive scientific evidence.

3. Internal Inconsistencies and Methodological Impasse

Newberg's argument faces several internal tensions that challenge the internal consistency of his framework:

Bridge vs. Subsumption: Initially, Newberg frames neurotheology as a neutral "bridge" intended to foster mutual enlightenment between science and religion (p. 6). However, as the book nears its conclusion, this bridge appears to transform into a replacement. His proposal of a "metatheology"—a framework supposedly devoid of specific theological content that sits above all other belief systems (p. 285)—reveals a reductionist agenda that risks subsuming traditional faith into a purely biological interpretation.

The Paradox of Evidence: A logical impasse arises in Newberg's treatment of subjective experience. On the one hand, he critiques skeptics by arguing that personal perceptions of God are "evidence" enough for the believer (p. 21). On the other, he insists that neurotheology utilizes rigorous scientific methods to validate these highly subjective phenomena (p. 46). This creates a contradiction: if spiritual evidence is beyond empirical proof, it cannot simultaneously be claimed as a subject of empirical validation.

The Constraints of Neuroimaging: Newberg's optimism regarding fMRI's potential to evaluate morality and belief is undercut by his own admission of the technology's limitations. He acknowledges that fMRI (functional Magnetic Resonance Imaging) is an indirect measure, capturing blood oxygen levels rather than consciousness itself, and requires a controlled environment unsuitable for many spiritual practices (p. 48). This gap between the complexity of morality and the indirect nature of the BOLD (Blood-Oxygen-Level-Dependent) signal remains a significant hurdle for the discipline's credibility.

4. Evolutionary Reductionism and the Epistemic Gap

A particularly jarring moment in the book is Newberg's evolutionary interpretation of ritual, which links sacred rites such as the Eucharist to biological mating behaviors (pp. 34, 108). While identifying biological precursors to human behavior is a hallmark of evolutionary science, suggesting that reproductive instincts provide a sufficient "foundation" for spiritual transcendence is a radical form of reductionism. This highlights a broader epistemic gap in Newberg's definitions; by relying almost exclusively on secular sources and mentioning only one theologian, Paul Tillich (p. 69), the book frames religion as an "adaptive behavior" rather than an engagement with truth. Without the internal perspective of faith, Newberg's "super-theology" risks becoming a conceptual vacuum that fails to satisfy either the rigors of science or the depths of devotion.

5. Preserving Theological Integrity against Determinism

Ultimately, Newberg's framework risks eroding the unique order of theological study. By characterizing the brain as the "machine" that produces faith, the author leans toward a form of biological determinism. While his insights into the limbic system's role in the sense of eternity are valuable (p. 28), his suggestion that brain region size—as seen in Neanderthals—dictates spiritual capacity (p. 107) is highly debatable. To maintain its integrity, theology must be more than a sub-field of evolutionary biology; it must remain "faith seeking understanding". If neurotheology is to be a true dialogue, it must respect the Divine as more than a neurological byproduct, ensuring that the study of the "machine" does not overshadow the sacred essence of the Soul.

6. *Theology as Faith Seeking Understanding vs. Neurotheological Chaos*

Faith must be the bedrock of theology. Most theologians operate within a specific belief system, seeking to elucidate the profound meanings of faith and apply them to life. While theological research may trigger reflection or even revision of tradition, its ultimate purpose is to understand and defend faith, not to negate it. Theologians are both practitioners and thinkers; for them, faith provides the impetus, while research provides the depth.

In Genesis, the Divine creation is defined by the transformation of chaos into clarity and disorder into order, establishing the principle of "each according to its kind". Newberg's neurotheology, however, seems to move in the opposite direction. By reducing highly subjective and individual matters to mere brain functions (p. 76), his approach risks turning orderly science into conceptual disorder—a regression that erodes pure faith.

7. *Practical Insights and Scientific Scepticism*

Despite these fundamental flaws, the book offers valuable neuroscientific insights that can help explain the biological correlates of religious practice. For example:

The Emotional Centres: Newberg notes that the amygdala and hippocampus link emotional responses to memory (p.23). This helps us understand how positive emotional experiences with the Divine can create lasting neurological imprints, promoting overall brain health.

The Limbic System and Eternity: The description of the limbic system as the "seat of emotions" and the temporal lobes' role in establishing opposites (p. 28) provides a biological framework for the human sense of eternity.

However, even within these scientific sections, Newberg occasionally falls into unconvincing biological determinism. For

instance, he suggests that the enlarged frontal and temporo-parietal regions in Neanderthals "allowed" for religious thought (p.107). This raises a critical question: is it scientifically sound to equate the mere size or development of a brain region with the capacity for complex spiritual contemplation? Such reasoning remains speculative at best.

After engaging with Newberg's work, one is left with several unsettling and fundamental questions: These concern 1. the nature of the discipline: Is neurotheology truly a bridge between two worlds, or is it an attempt to subsume theology into a purely materialist science? Then, 2. the leadership of the movement: Is this field led by pious theologians seeking deeper truth, or by atheistic scientists? Can it be likened to a new Reformation, led by figures such as Wycliffe, Luther, and Wesley, who sacrificed themselves for the sake of Divine truth—or is it something else entirely? Again, 3. purpose and function: Is the goal of neurotheology to help people establish a faith grounded in truth, or does it serve to dilute faith, gradually diminishing the awareness of sin and leading toward total secularization? And finally, 4. the ultimate objective: Does neurotheology utilize the discoveries of neuroscience to glorify God's name and unveil the mysteries of His creation, or does it seek to prove that God is merely one of many neurological illusions, existing on the same plane as any other subjective spiritual experience?

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