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# KALAM SCIENCE AND NEUROTHEOLOGY EXPLORING THE INTERSECTION OF FAITH AND NEUROSCIENCE

**Muhammad Idris Batubara[1], Rajasa Hazairin Lubis[2] Ahmad Parwis Siregar**

State Islamic University of North Sumatra

rajjasalubis@gmail.com,idrisbtr34@gmail.com,ahmadparwis32@gmail.com

**ABSTRACT**

This study discusses the intersection between Ilmu Kalam, a branch of Islamic theology based on rationality and faith, and neurotheology, a scientific approach that examines religious experiences through the perspective of neuroscience. Although these two disciplines originate from different epistemological paradigms, they share a common interest in understanding the dimensions of spirituality, consciousness, and the nature of humanity. Ilmu Kalam explains metaphysical aspects such as the soul, free will, and faith as transcendental entities sourced from God. Conversely, neurotheology seeks to study religious phenomena as the result of neurobiological activities within the human brain. Using a qualitative approach based on literature review, this article explores how classical Kalam science can engage in dialogue with contemporary neuroscience findings, particularly on issues such as consciousness, moral responsibility, and spiritual experience. It is emphasized that the integration of these two fields must be conducted critically and dialogically to avoid spiritual reductionism by science. This study shows that such an interdisciplinary approach is not only possible but also crucial to enrich human understanding of faith, knowledge, and existence in the modern era, where the boundaries between science and spirituality are increasingly blurred.

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## INTRODUCTION

The development of modern science, particularly in the field of neuroscience, has had a significant impact on human understanding of existence. One emerging branch from this development is neurotheology, an interdisciplinary approach that attempts to understand religious experiences through the perspective of neuroscience. Meanwhile, within the Islamic tradition, Ilmu Kalam has long been a foundational discipline for comprehending the dimensions of faith and the existence of God in a rational and systematic manner. In this context, the intersection between Kalam science and neurotheology becomes relevant to discuss how spiritual experience, consciousness, and belief can be explained both philosophically and scientifically.

Ilmu Kalam is a branch of Islamic theology focused on rational argumentation to defend and explain religious teachings, especially those related to divinity, prophethood, and the afterlife (Al-Ghazali). On the other hand, neurotheology is the scientific study of how the brain responds to or processes spiritual and religious experiences (Newberg, Andrew & D'Aquili, Eugene, 2001). Although both originate from different epistemological paradigms — Ilmu Kalam from revelation and rationality, while neurotheology from empiricism and neurological observation — they share a common interest in exploring the essence of human religious experience.

Since the classical era, Muslim thinkers such as Al-Ghazali, Fakhruddin al-Razi, and Ibn Sina have deeply discussed the relationship between reason, revelation, and the soul. They developed theories about active intellect, spiritual consciousness, and revelation that can be compared with questions currently addressed in neurotheology. In this regard, Ilmu Kalam has provided a philosophical and metaphysical framework on the structure of consciousness and the nature of existence, which remains relevant in answering challenges from modern science (Nasr, Seyyed Hossein, 1989). This indicates continuity between the heritage of Islamic knowledge and contemporary scientific discourse.

One of the main focuses of neurotheology is how spiritual experiences can be measured and analyzed through brain activity. Andrew Newberg's research shows that activity in the parietal and frontal lobes during intense meditation or prayer increases, which is claimed to be related to experiences of "oneness with God" or deep tranquility (Ramachandran, VS, 2011). However, from the perspective of Ilmu Kalam, spiritual experience is not merely neural activity but a connection between the

soul and God. This difference opens space for critical discussion about the limits of science in explaining spiritual phenomena.

The issue of free will is also a meeting point between neurotheology and Kalam Science. Modern neuroscience suggests that human decisions may be determined by unconscious brain activity, as shown in Benjamin Libet's experiments (Libet, Benjamin, 1983). This challenges theological beliefs about moral responsibility. In Ilmu Kalam, the concepts of ikhtiyar (choice) and al-kasb (acquisition) explain how humans still possess free will within the bounds of God's will. This discussion highlights the importance of integrating neurological and theological perspectives comprehensively.

Although neurotheology provides new insights, the approach is not without criticism. One is reductionism — the tendency to explain all aspects of spirituality biologically and materially. From the viewpoint of Ilmu Kalam, this could obscure the transcendental meaning of religion and reduce spiritual depth to merely chemical responses. Therefore, integration between these two approaches must be critical, dialogical, and complementary, not mutually negative (Haque, Amber, 2004).

In an increasingly secular yet simultaneously spiritual modern era, the interdisciplinary approach between Kalam Science and neurotheology becomes very important. It enables dialogue between Islamic scholarly traditions and contemporary scientific discoveries, which can strengthen the foundation of faith with rational and empirical understanding. This study also serves as a bridge between modern Muslim generations and the classical Islamic intellectual heritage, as well as reinforcing Islam's contribution to global scientific discourse. Thus, research on the intersection between Kalam Science and neurotheology is not only academic but also strategic and transformati

## METHOD

This study employs a qualitative approach using the literature review method. This approach was chosen because the research is conceptual in nature and aims to understand and analyze the relationship between two epistemologically different disciplines: Ilmu Kalam within the Islamic tradition and neurotheology in the context of modern neuroscience.

The method aims to explore in depth the conceptual and epistemological aspects of Ilmu Kalam and neurotheology, in order to identify points of convergence and dialogue between the two. Thus, this study is expected to provide theoretical

contributions to the development of interdisciplinary studies between religion and modern science.

## RESULTS AND DISCUSSION

### a. Kalam Science

Literally, kalam means words or dialogue. Terminologically, Ilmu Kalam is the discipline that discusses the existence of Allah, His necessary attributes, attributes that are impossible for Him to possess, and possible attributes He may have. It also examines the Prophets of Allah to confirm the truth of their prophetic missions and to understand the attributes they must have, attributes they cannot have, and attributes they may possess (Ahmad Hanafi, 1974, p. 3). According to Husein Tripoli, Ilmu Kalam is the science that discusses how to establish religious (Islamic) beliefs with convincing evidence.

According to Ibn Khaldun, Ilmu Kalam is a science containing rational arguments to defend the doctrines of faith and includes refutations against heretical groups (innovations without precedent) that deviate from the teachings of the Salaf and Ahl al-Sunnah in matters of creed. Based on Fu'at Al-Ahwani, Ilmu Kalam serves to strengthen religious conviction through logical teachings. Ibn Khaldun (1333–1406) defines Ilmu Kalam or Ilmu Tauhid as a science that contains arguments to defend the beliefs of faith, using rational evidence and includes refutations against those who deviate from the Salaf and Ahl al-Sunnah beliefs. Meanwhile, Hasbi al-Shiddieqy explains that Ilmu Tauhid is the science that discusses methods of establishing religious creed using convincing arguments, whether based on textual evidence (naqli), rational reasoning (aqli), or direct intuition (dalil wijdani) (Hasbi ash-Shiddieqy, 1976, p. 9).

### b. Neurotheology

Before delving further into neurotheology, it is important first to define this field. Neurotheology is a research area that integrates neuroscience with theology (religious studies) to explore the relationship between human brain functions and religion as well as spiritual experiences. Its fundamental aim is to determine how the brain is intertwined with religion and spirituality. However, there are several aspects of this field that should be mentioned to better understand the overall approach. For neurotheology to be meaningful, both as a term and a discipline, it is important to define both sides as broadly as possible (Newberg, AB, 2010). Therefore, the "Neuro" side should encompass cognitive neuroscience, neuroimaging, psychiatry,

consciousness studies, and even anthropology and sociology. The "Theology" side should include not only formal theology but all the ways in which humans engage with religion and spirituality. This includes beliefs, practices, rituals, and religious and spiritual experiences.

This area of knowledge attempts to explain spiritual experiences based on neuroscience, such as ecstatic experiences where awareness of space, time, and self disappears, feelings of spiritual awe, and feelings of unity with God and the universe. Neurotheological research draws on theology, philosophy, cognitive science, neuroscience, psychology, anthropology, and other related fields.

Neurotheology utilizes neuroscience tools, especially brain imaging technology, to observe how the thoughts, actions, and spiritual experiences relate to cognitive, emotional, and attitudinal responses of humans toward God and religion. Some findings from these studies include:

a. The brain's ability to perceive reality holistically gives rise to perceptions of universality and unity. Through this function, humans can perceive the existence of God as something encompassing everything, from the vast universe to the minute atomic particles.
b. The brain's capacity to process information quantitatively contributes to the emergence of the concept of sacred numbers in various belief systems.
c. Furthermore, the brain possesses a binary thinking mechanism that enables humans to distinguish between opposing pairs. This function is important in religious contexts as it helps differentiate between good and evil, just and unjust, as well as between humans and God. Religion plays a role in helping individuals cope with psychological and existential issues arising from these distinctions.
d. The brain's function in understanding cause-and-effect relationships, when applied to the context of reality and theology, underlies the concept of God as the first cause or prima causa, the initial entity not caused by any other.

**c. Faith and Knowledge and Their Relationships**

**1. Definition of Faith and Knowledge**

Faith (iman) comes from the Arabic root words amana, yu'minu, and imanan. It means to have conviction or belief. In Indonesian, beli (to believe) means having certainty or trust that something (which is believed) is true or really exists (Kaelany, HD, 2000, p. 58). Faith is defined as a deep conviction in the heart, with full confidence, without doubt, influencing one's worldview, behavior, and daily actions.

Thus, faith is not merely a verbal statement, nor just an action, nor simply an understanding of the pillars of faith. In essence, faith is more than just a verbal affirmation by a person that they are a believer (mukmin).

Knowledge (science) is organized and systematic understanding of something, using scientific methods, so that the knowledge is ingrained within the individual and enables them to clearly recognize an object (Adhiguna, 2022). According to the Qur'an, 'ilmu' is equivalent to the word 'makrifah', which is knowledge instilled within humans enabling them to properly recognize what exists (Hadriana, 2023). The source of knowledge in Islam is not limited only to the physical or visible aspects but also includes metaphysical or unseen aspects, which, although invisible, must be believed in, such as the Essence of God (the Essence of Allah), angels, the realm of the grave, the hereafter, the day of gathering, the day of reckoning, and the day of recompense. Both the physical and non-physical realms hold equal value from the Islamic perspective (Khasanah, 2021).

## 2. The Relationship Between Faith and Knowledge

The relationship between faith and knowledge has long been an important topic in discussions of philosophy, religion, and culture. Faith and knowledge do not contradict each other; Rather, they complement and interact to shape human understanding of reality and life.

### The Nature and Relationship of Faith and Knowledge

- Faith is often understood as accepting truth without empirical evidence, while knowledge is based on reasoning and evidence. However, they need not be strictly separated; knowledge can be part of faith, and faith can motivate the pursuit of knowledge.
- There is no absolute divide between faith and knowledge; they proceed sequentially. Faith may arise from revelation, then develop through experience and education into deeper knowledge.
- In the history of thought, many figures such as John Hick and German philosophers (Fichte, Schelling, Hegel) have attempted to integrate faith and knowledge, overcoming the dichotomy between the two.

### Integration in Life and Culture

- Faith and knowledge play roles in shaping a person's behavior and quality of life; However, high knowledge does not always correspond directly with strong

faith or good behavior. Both must be integrated to produce a complete religious life.

- In the context of culture and spirituality, separating faith and knowledge is considered superficial because the world is complex and interconnected. Mystical and religious experiences also reveal knowledge that transcends reason.

**d. The Intersection Between Neuroscience and Kalam Science**

The intersection between neuroscience and Kalam Science is becoming increasingly relevant in addressing fundamental questions about human nature, especially regarding consciousness and the soul. Neuroscience seeks to study consciousness as a biological phenomenon emerging from neural activity in the brain, including the prefrontal cortex and the limbic system. Research by Antonio Damasio and VS Ramachandran indicates that subjective experiences such as fear, love, or belief are the results of neurocognitive processes (Al-Ghazali). On the other hand, Ilmu Kalam views consciousness as a manifestation of the ruh (spirit), a non-physical entity originating from God that cannot be reduced solely to brain activity (Damasio, Antonio: 1999). Scholars such as Al-Ghazali emphasize that consciousness and the soul are spiritual aspects connecting humans to the transcendental dimension, something that cannot be fully explained by materialistic approaches.

A critical point of intersection between neuroscience and Kalam Science emerges in the discourse on free will and moral responsibility. Benjamin Libet's experiments showed that the brain activates motor processes before a person consciously feels they have made a decision (Libet, Benjamin: 1983). This raises the question of whether humans truly possess free will or merely follow neurological determinism. In Ilmu Kalam, this issue has long been discussed through the concepts of al-qadar (divine decree) and ikhtiyar (choice). Al-Ash'ari stated that humans “acquire” actions through kasb (acquisition), while Maturidi emphasized the role of reason and freedom of choice as the basis for moral responsibility (Al-Ash'ari). This difference shows that although neuroscience offers explanations on how the brain functions, Kalam Science maintains metaphysical and ethical aspects as foundations for human freedom and accountability.

The dialogue between neuroscience and Kalam Science opens the possibility of epistemological integration between science and religion, especially in forming a holistic understanding of humanity. Neuroscience provides insights into the physical

mechanisms of spiritual experience, while Ilmu Kalam offers frameworks of meaning, values, and purpose for such experiences. Figures like Andrew Newberg develop the approach of neurotheology to bridge brain activity and religious experience, yet still acknowledge that neuroscience cannot fully explain the essence of spiritual meaning (Maturidi, Abu Mansur). Here, Ilmu Kalam serves as a complement by providing metaphysical and theological foundations for questions that transcend empirical science. With a respectful approach to each methodology, the synergy between neuroscience and Kalam Science can enrich scientific, philosophical, and spiritual discourse in the modern era.

## CONCLUSION

This study demonstrates that there is a broad and productive space for dialogue between Ilmu Kalam as rational Islamic theology and neurotheology as a branch of neuroscience that investigates human spiritual experiences. Although both originate from different epistemological foundations — Ilmu Kalam from revelation and reason, and neurotheology from empirical and neurological observation — both strive to understand the deepest aspects of human existence, including consciousness, free will, and the relationship with God.

Kalam science views consciousness and spirituality as parts of a transcendent spiritual dimension that cannot be reduced solely to biological phenomena, whereas neurotheology attempts to explain these experiences through brain mechanisms and neurocognitive processes. This difference does not precede integration; Rather, it presents the potential to enrich human understanding holistically from both scientific and theological perspectives.

Therefore, the integration between Kalam Science and neuroscience is not only theoretically possible but also crucial in addressing the challenges of the modern era. Such collaboration can produce new approaches to comprehensively understand faith, knowledge, and spirituality, while simultaneously reinforcing the relevance of Islamic theology in contemporary scientific discourse.

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