Neurotheology: Brain-based Religious Experience

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Even though most men are occupied with gaining a livelihood and providing for their daily needs and show no concern for spiritual matters there lies within the nature of man an innate urge to seek the ultimate Real. In certain individuals, this force which is dormant and potential becomes awakened and manifest itself openly, thus leading to a series of spiritual perfections.

Every man believes in a permanent reality despite the claim of sophists and skeptics who call every truth and reality illusion and superstition. Occasionally, when man views with a clear mind and a pure soul the permanent Reality pervading the universe and the created order, and at the same time sees the impermanence and transient character of the diverse parts and elements of the world, he is able to contemplate the word and its phenomena as a mirror which reflects the beauty of a permanent reality. The joy of comprehending this reality obliterates every other joy in the eye of the viewer and makes everything else appear as insignificant and unimportant.

This vision is that same Gnostic "divine attraction" (*jadhbah*) which draw attention of the God-centered man toward the transcendent world and awakens the love of God in his heart. Through this attraction, he forgets all else. All his manifold desires and wishes are obliterated from his mind. This attraction guides man to the worship and praise of the Invisible Deity who is in reality more evident and manifest than all that is visible and audible. In

truth, it is this same inner attraction that has brought into being the different religions within the world, religions which are based on the worship of God" (Tabatabai 131).

Allama Tabatabai, the great philosopher and the influential exegete of the school of *Ahlul Bayt*, describes in the previous quotation what we define today within academia as "mystical experience", "spiritual experience" or simply "religious experience". How could we attain this spiritual bliss? According to Tabatabai, you do not attain it. You simply open up "a new world of Reality" that thus far has been dormant. You awaken your heart by perfecting your spirit, by purifying your soul, or at least by clarifying your mind. You make an effort to shift your attention from your daily needs to meet your innate urge, seeking the Ultimate Real.

"You don't have to", say neuroscientists, people who spend their lives studying the brain, technically mentioned as the nervous system. "You can arrive at such mystical experience when you get brain damage!" That happened to Dr Jill Bolte Taylor, a neuroanatomist, on December 10, 1996. A blood vessel in her brain had popped. She got a stroke. She called it "my stroke of insight". She impressed her audience in an 18-minute presentation at the TED conference in Monterey, CA on February 27, 2008 when narrating the stroke in a very theatrical –say poetical- way (Taylor, *Jill*):

> **On the morning of the stroke,** I woke up to a pounding pain behind my left eye. And it was the kind of pain, caustic pain, that you get when you bite into ice cream. And it just gripped me and then it released me. Then it just gripped me and then released me. And it was very unusual for me to experience any kind of pain, so I thought OK, I'll just start my normal routine. So I got up and I jumped onto my cardio glider, which is a full-body exercise machine. And I'm jamming away on this thing, and I'm realizing that my hands looked like primitive claws grasping onto the bar. I thought "that's very peculiar" and I looked down at my body and I thought, "whoa, I'm a weird-looking thing." And it was as though my consciousness had shifted away from my normal perception of reality, where I'm the person on the machine having the experience, to some esoteric space where I'm witnessing myself having this experience…
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> **And at first I was shocked** to find myself inside of a silent mind. But then I was immediately captivated by the magnificence of energy around me. And because I could no longer identify the boundaries of my

body, I felt enormous and expansive. I felt at one with all the energy that was, and it was beautiful there.

Then all of a sudden my left hemisphere comes back online and it says to me, "Hey! we got a problem, we got a problem, we gotta get some help." So it's like, OK, OK, I got a problem, but then I immediately drifted right back out into the consciousness, and I affectionately referred to this space as La La Land. But it was beautiful there. Imagine what it would be like to be totally disconnected from your brain chatter that connects you to the external world. So here I am in this space and any stress related to my, to my job, it was gone. And I felt lighter in my body. And imagine all of the relationships in the external world and the many stressors related to any of those, they were gone. I felt a sense of peacefulness. And imagine what it would feel like to lose 37 years of emotional baggage! I felt euphoria. Euphoria was beautiful -- and then my left hemisphere comes online and it says, "Hey! you've got to pay attention, we've got to get help," and I'm thinking, "I got to get help, I gotta focus." So I get out of the shower and I mechanically dress and I'm walking around my apartment, and I'm thinking, "I gotta get to work, I gotta get to work, can I drive? Can I drive?"

But I realized, "but I'm still alive! I'm still alive and I have found Nirvana. And if I have found Nirvana and I'm still alive, then everyone who is alive can find Nirvana." I picture a world filled with beautiful, peaceful, compassionate, loving people who knew that they could come to this space at any time. And that they could purposely choose to step to the right of their left hemispheres and find this peace. And then I realized what a tremendous gift this experience could be, what a stroke of insight this could be to how we live our lives. And it motivated me to recover.

What Dr. Taylor presents as "a world filled with beautiful, peaceful, compassionate, loving people" is similar to what Allama Tabatabai suggests as "the beauty of permanent reality." You have two worlds of reality: the physical world of disconnection, fragmentation and separation and the spiritual world of connection, unification, and integration. Both are parts of who you are. You are now living in the former, but you have in yourself "an inner urge" to seek the second. Andrew Newberg, a leading neuroscientist, points out, "Fully recovered, Dr. Taylor says she can now easily shift from between the scientific and transcendent sides of her brain. Her experience supports the notion that each of us has an inner capability to access these

wonderful parts of who we are-a notion supported by our brain scan research at the University of Pennsylvania" (Newberg 59).

Allama Tabatabai includes his discussion about religious experience in his Islamic theology, referring to it as one of the three methods of religious thought. He calls it "the third method of intellectual intuition or mystical unveiling". Andrew Newberg studies the cerebral basis of religious experience and gives birth to neurotheology. I will leave the former to our colleagues well versed in Islamic mysticism. In this paper I will focus on the latter, attempting within my humble position of knowledge, to introduce neurotheology to Islamic scholars. Rather than having a sneaking suspicion to neurotheology as an assault to our religion, we can look into it as a supporting argument for our belief in religious experience. At the outset, I will make a brief survey on the development of neurotheology, focusing on the issues of the brain-based religious experience. To put it in another way, we will look into the way the scientists have tried to answer the question: Does the brain create God? Next, I will address the second question: Does God create the brain?

Does the Brain Create God?

Ancient people found an illness connected to experiences of the supernatural, demoniac or divine. We nowadays call it epilepsy. The ancients believed that the patients were struck by either the demons or the divine. Hippocrates (460-377BC), father of medicine, rejected the notion and mentioned that the illness was "nowise more divine nor more sacred than other diseases". It had a natural cause, which was located in the brain. In his famous text, "on the Sacred Disease", he wrote the most important remark of neuropsychiatry of all time:

> Men ought to know that from the brain, and from the brain only, arise our pleasures, joys, laughter and jests, as well as our sorrows, pains, grieves and tears . . . and by this same organ we become mad and delirious, and fears and terrors assail us (Trimble 134).

Yet, for centuries, they named epilepsy: The holy illness, *morbus divinus, morbus deificus* (created by God), *morbus coalestis* (the heavenly illness), *morbus astralis* (the stars illness), *morbus lunaticus* (the moon induced illness). It was only with the Enlightenment that epilepsy was dissociated from sin and trasngression as well as divine blessing and favour. From this time forth,

physicians had been observing epilepsy as a kind of brain disorders. For this purpose neuropsychiatry, combining together neurology (the study of the brain and its diseases) and psychiatry (the study of the mind and its disorders), was born. They also found out the connection between epilepsy and religion. Some of the psychiatrists even went further to hypothesize that great religious people such as Paul the Apostle, Joan of Arc, Teresa of Avila (they even mentioned our Prophet Muhammad peace be upon him) had temporal-lobe epilepsy (TEL).

Soon after, in the end of nineteenth century, observers of religious experience identified people who had the experience of divine presence not by any means due to epilepsy or brain damage. Over one hundred years ago, William James, discussed "Religion and Neurology" in his first of his Glifford Lectures, later published as *The Varieties of Religious Experience*. He examined the cognitive operations of the healthy religious mind. He indicated that indeed a specific brain region is involved in religious experience. It does not mean that brain creates religion. Neither does it mean that religious experience is due to brain disorder. Since brain technology was then far from being invented, James was not able to develop neurology of religious experience. Certain aspects of James's religious experience have been submitted to scientific investigation of different disciplines, such as psychology, anthropology, and sociology but James's invitation to neurology was mostly overlooked until the 1970s (McNamara 81).

In the 1970s, James's invitation to neurologic studies of religious experience was responded interestingly by a group of neuropsychiatrists who studied people with intense religious obsessions among (again!) patients with temporal lobe epilepsy. It was in the early 1980s that Michael Persinger published articles dealing with religious experiences and brain activity. Later he published a book on the neuropsychology of religious beliefs. He indicates that religious experience is caused by short-term electrical abnormalities within temporal lobes. Everybody is able to have an experience of God because the temporal lobe has developed the way it did. Experience of God is merely a biological artifact of the brain. Persinger belongs to the majority of the scientists holding the notion that the brain creates God. Persinger insists that different stimuli in religious settings such as music, swaying and dancing, repetitive odors can trigger temporal lobe seizure, which finally create the presence of the divine. Unfortunately, Persinger does not provide scientific evidence for his hypothesis. Neither does he supply empirical data that belief in God is "a cognitive virus" and delusion.

Rhawn Joseph continued Persinger by locating the foundation of spiritual and religious experience on the limbic system structures –the amygdala, hippocampus and inferior temporal lobe. Similar brain structures are also involved in sexuality, rage and sadistic behavior. He wants to suggest that religious people are more prone to violence, sexual perversion, and murder. However, Joseph recognizes the plausible supposition that the brain might have evolved because there IS a spiritual world, that the limbic system might have had contact with God, that this "transmitter of God" (referring to the limbic system) might have survived because it has made contact with a spiritual reality.

Joseph has been criticized for his reductionistic explanations. The widely known idea of brain localization –like independent right brain and left brains, or locating a certain function on only a certain part of the brain—ignores the fact that the brain operates as a whole, not as unrelated and independent modules. This critique, as presented by Carol Albright, has been also used to "correct" the assumption of Dr. Jill Bolte Taylor. When separating a left brain from a right brain, Taylor was employing metaphors rather than scientific evidence. She was not expounding science; she was reading poetry. Therefore, according to Albright, limbic system is not a single structure of "God module" or "Transmitter to God". The brain operates as a result of complex interconnections among areas of the brain. The entire brain, consequently, is involved in religious or God experiences. Religious practices may control the reptilian brain by providing guidance in sexual behavior and violence. The mammalian brain supplies emotion and memory and help us to develop a meaningful relationship with God. Finally, we are coming to the most important part of our brain, the cerebral cortex, the thinking part of the brain.

> Surrounding these two parts of the brain is the cerebral cortex, which provides much of what most people consider to be humanness, including language. It is also the area where much of the information processed at other brain regions converges so we can make decisions and judgments. Religious experience will involve each of these areas: mystical experience, love and kinship, the limbic system; rituals of various kinds, the reptilian brain; and discernment and a sense of calling from God, the cerebral cortex (for example, the frontal lobe)… (Seybold 82).

Persinger, Joseph, Albright, having tried to identify where in the brain the "God Spot" is, laid the foundation of neurotheology. To be more specific, they started the first half of neurotheology, reaching a conclusion that "the brain creates God". Back again to Dr Jill Bolte Taylor. They were studying the first part of Dr Taylor's Stroke of Insight. They found out that "the address" of religious experience is in the right hemisphere of your brain. It is also the conclusion of the "personal lifelong quest for knowledge of God" of an ardent atheist, represented by Mathew Alper:

> The one thing I could now say of God with any empirical certainty was that God was a word, which, like all words, was generated from within the human brain. This meant the only fact I now possessed regarding the nature of God's existence came not from something I had perceived from beyond, from "out there," but rather from something that had been generated from within, more specifically, from within the workings of my physical organ, the brain—and not just my brain but from the brains of almost every single person from every single culture dating back to the dawn of my species (Alper 60).

That is not the end of the quest. That is only half of the journey. Yet, it has been a long search since time immemorial. "To evaluate the historical background of neurotheology requires us to delve several thousand years back into history to see how religious traditions have considered the relationship between the mind and the person's attempt to interact with some higher level of reality," notes Andrew Newberg (*Principle* 3), one of the founders of the new interdisciplinary field called neurotheology. He still writes the field within quotes, as he says when he defines it: "'Neurotheology' is a unique field of scholarship and investigation that seeks to understand the relationship specifically between the brain and theology, and more broadly between the mind and religion" (Newberg, *Principle 1*).

There are two kinds of relationships: How the brain creates God, the first part, and how God creates the brain, the second. In our present terms, how the brain shapes religious experience and how religious experience has an effect on the brain. Andrew Newberg reports the second part of brain studies in his best-seller, *How God Changes Your Brain*.

Does God Create the Brain?

Mathew Alper terminates his journey on the station of "God made in the Brain." It is Newberg who moves the train of neurology to the second station of "Brain made by God." Newberg and his colleagues were no longer studying the religious experience of the brain damaged patients, the epileptics, or the "abnormal." They have investigated people widely known as genuine religious persons - Buddhist practitioners and Franciscan nuns. They have the advantage of newly invented brain-scan technology. They have been studying how different concepts of God affect the human mind. They have brain-scanned and charted the neurological changes of the Franciscans as they immersed themselves in the Presence of God, and the Buddhist monks as they contemplated about the universe. They have watched what happens in the brain as the Pentecostals invite the holy spirit to speak to them in tongues. They will be doing more studies regarding Sufis and other mystics of different religions and faiths.

It is impossible to make shorter and at the same time easier the results of their studies in this article. Risking gross simplification and probably grave inaccuracy, I will pick out only two important results; both of which change our perspectives of the brain-based religious experience. Firstly, they dismissed the "pathology" model of religious experience. Genuine spiritual experience is neither caused by brain damage, nor triggered by psychedelic drugs.

> We do not believe that genuine mystical experience can be explained away as the result of epileptic hallucinations or, for that matter, as the product of other spontaneous hallucinatory states triggered by drugs, illness, physical exhaustion, emotional stress, or sensory deprivation. Hallucinations, no matter what their source, are simply not capable of providing the mind with an experience as convincing as that of mystical spirituality (Newberg, *Why* 174).

Secondly, genuine religious experience strengthens neurological circuits involved with consciousness, empathy, and social awareness. It will allow us to be more compassionate, more tolerant of others, and more accepting of our own shortcomings and faults. Consequently, the believers who have religious experience live more happily, more peacefully, and more physically healthy. It is also interesting to note that, neurologically speaking, as mentioned in the front flap of *How God Changes Your Brain:*

- Not only do prayer and spiritual practice reduce stress and anxiety, but just twelve minutes of meditations per day may slow down the aging process.
- Contemplating a loving God rather than a punitive God reduces anxiety, depression, and stress and increases feelings of security, compassion, of love.
- Fundamentalism, in and of itself, is benign and can be personally beneficial, but the anger and prejudice generated by extreme beliefs can permanently damage your brain.
- Intense prayer and meditation permanently change numerous structures and functions in the brain-altering your values and the way you perceive reality.

We have gone further from where the Godless neurology has come to. We have arrived at the position where we discovered that God creates the brain rather than the brain creates God. I think this is the station that Allah describes: "*Those who believe and whose hearts are set at rest by the remembrance of Allah; now surely by Allah's remembrance are the hearts set at rest*" (Al-Qur'an 13:28).

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