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Sapiential Insights for Ultimate Wisdom and Intelligence Appraising the Qur'an and Science

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Abstract

The human body is an extremely intricate work of art, with systems and organs interacting to create what has been acknowledged as life. Among these intricate relationships, one of the most fascinating and significant is the one that has been recently discovered between the gut, the brain, and the heart. This discovery has potentially changed our fundamental reductionist, positivist and more precisely biochemical understanding of higher consciousness, wisdom intelligence etc, paving way for a more holistic comprehension which includes philosophical and epistemological analysis. More importantly, such changed paradigm, challenges the accepted dualisms and invites serious research to explore the interconnectedness of mind, body, and emotion. However, these discoveries sparked a surge of discussions among diverse Muslim scholars and researchers who seek to understand the Qur'anic concept of heart-interceded wisdom, as well as the reasons why the Qur'an insist and talks about heart as a reflection of man's religiousness or piety. It is important to keep in mind that science and the Qur'an are two different discipline each with their own set of argument and approaches. For instance, science is an always changing discipline due to technological innovations while, the teachings of the Qur'an are constant, ageless, occasionally metaphorical or allegorical. In the light of this intricate landscape, science and the Qur'an may either support or challenge each other on various matters. Therefore, it is imperative to note that scientific knowledge should not be regarded as the ultimate source for comprehending the Qur'an. Nonetheless, many individuals explore scientific findings to deepen their faith and their comprehension of the Qur'an. So, in this exploratory article, we will delve into the heart-gut-brain relationship, its scientific underpinnings, and the implications it holds for our understanding of Qur'anic teachings, health, emotions, and consciousness.

1. Introduction

In these days and age, academic and theological knowledge has divided science and religion into two distinct and autonomous domains each with their own way of valuing the purpose of human existence and universe and more importantly our place within it. Science is a constantly evolving human endeavour essentially aimed to comprehend the natural world to which they belong (the behaviour of matter and energy, the evolution of species, the laws of physics, and the origins of the universe), and to understand their longing for transcendence

existence. While all the structured religion principally delves into metaphysical questions, higher consciousness the purpose of life on earth, nature of the soul, the afterlife, and the existence of the creator the Almighty and so on. It often provides answers to questions that are beyond the scope of empirical science and focusses on moral and ethical guidance of its followers. With this contextual background, religion is basically highly individualistic, deeply personal and subjective element of human life, irrespective of one's own experiences or responses. So, both the domains are often received as distinct if not agonistics to each other each with their own preferences that are fundamental for the human life; science empirically tries to provides valuable insights into the mechanics of the natural world by interrogating through the "How" based inquiries, but may not answer the questions about the ultimate purpose of life or the moral principles by which to live. Religious teachings, on the other hand, offer guidance on these profound questions by explaining through the "why" based questioning. Interestingly, despite differences in their approaches their standpoint sometimes overlaps or address certain complementary aspects of human experiences.

There are several instances where the Qur'an and science apparently corroborate or rather, we can say that the Qur'anic verses were interpreted in a way that are consistent with modern scientific discoveries. In one example, the Qur'an states in *Surat Al-Anbiya verse 30*, that the universe was created from a single entity (*The Qur'an 21:30*); this was initially related scientifically with the Big Bang theory or very recently with "Singularity" theory on the origin of cosmos proposed by eminent physicist S. Hawkings. Similarly, in *Surat An-Naba verse 7* figuratively compares mountains to "pegs" that hold the Earth's crust (*The Qur'an 78:7*). This description is linked with the geological role of mountain ranges as explained by science in anchoring tectonic plates. However, what is more central, though, is to keep in mind that these impact's very nature and relevance may change as technology or society evolve. At the same time, it is also true that a lot of scientific facts will continue to be influenced by religious truths and the opposite is also true. The most striking example, is that some people still support the Islamic view of human creation while rejecting the idea of evolution through natural selection. Enduring the philosophical perspective of both the domain, let's first examine how science is currently attempting to respond to questions regarding the holistic relationship or coherence between physiological processes in body essential organs and their effects on the orchestration of knowledge, cognition, and emotion. Before now without much doubts, we all are raised looking at the brain; through scientific lens, that it is the sole organ that houses the intellect, decision-making competence, emotions and consciousness etc. neurobiologists have even branded specific areas in the brain that are involved in regulating moral functions (e.g., judgement and lies) and spirituality (God Spot). So congruently, we all are convinced that it is the brain that singly processes the information coming from our sensory organs, social and environmental interactions etc (exteroceptive signals) and accordingly orchestrate our behaviour (Arzy, 2006; Jorge, 2007; Schore, 2015; Kapogiannis, 2014; James, 2019). And that it also controls and coordinates all of the body's other organs, including our heart's core functioning (interoceptive signals). In short, we unreservedly accepted, based on all the empirical evidences and medical experiences that our brain is the prime face that speaks its goings-on in different languages. However, latest technological advancement combined with algorithm and analytical mathematical models has made few fascinating discoveries about how the brain and body vital organs cross talk and communicate with each other and how they influence person's own life in a much broader frame than previously anticipated (Lim & Lai, 2016; Nismayanti, *et al* 2019; Ahmad, & Dziyauddin, 2020; Al-Baghdadi, & Al-Waily, 2021).

This eventually prompted scientist from allied sciences to re-analyse or re-study the functionality of vital organs (heart, brain and gut) afresh in a more holistic way. And this is the reason why so many new fields have emerged in recent times such as neuro-cardiology, neuro-gastroenterology, neuroendocrinology, psychophysiology, and neurophilosophy etc. And if we look into the research work going on in these areas, it's evident that the contemporary research in this domain focuses primarily on finding more comprehensive answer or holistic solutions rather the reductive and purely empiricist answers. Discovery of "little brain" in the heart and gut is actually the result of all this tireless research done till now to find answers to these queries So, when science put forth the concept of "second brain" (also known as the "gut brain" or "heart brain"), it receives an overwhelming response from the people who were in search of understanding the complex interplay of human body holistically as well as from several scholars across the Muslim community who in point of fact are trying to relate it with the pre-existing Islamic teachings. Merely because the idea of these second brain in truth intersect with conversations about how mental and emotional health can impact one's spiritual journey. And even more importantly, Islam strongly emphasizes mentoring people's individuality involving physical, mental, and spiritual dimensions holistically. However, let's first review our prior scientific knowledge on the fundamental roles that the heart, gut, and brain play before delving any further into this debate.

We all are also rationally primed both scientifically and medically that the primary function of the heart is to make sure that every part of the body gets the enough oxygen and nourishment through constant blood flow. Similarly, we consider our digestive system's central duty is to digest what we eat or drink. Enthrallingly, science has revealed that both the Heart and the Gut play more expressive, communicative, and contemplative roles in shaping our intelligence, wisdom or to be precise influence or impact our thought processes also. Both of them

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are reported to contains several million cells which are typically found in the brain; neurons, glial cells, and that both the vital organs secrete same chemicals (neurotransmitters) and hormones as the brain that facilitates bi-directional communication or in simple words “cross talk” and a link between them. Referring to these breakthrough findings, Muslim experts come out to unequivocally explain why the Qur'an insists on eating and earning halal food or portrayed heart as an organ of intellect and how these things can have impact on our wisdom, spirituality, and moral character (Ahmad *et al*, 2023; Yusof, & Wan Zahari, 2023) The main reason for this is that scholars cite it as an example of "signs" of Allah's and a reflection of His wisdom in creating the physiological system, whose true functional efficacy is hidden in adhering to the Qur'anic teaching or vice versa. For example, practicing Islamic teachings regularly can have a direct positive impact on physiological, psychological and emotional well-being of an individual as they essentially foster sense of belonging, offer guidance on coping with life's challenges, which in a way help promote psychological resilience, and encourage the adherents to make healthier lifestyle choices, such as avoiding harmful substances (e.g., alcohol and tobacco) and observing hygiene, cleanliness, sexual practices and adopting a halal and balanced diet. But the matter of concern is, does the Qur'an use the term "heart" metaphorically without regardless of how it affects cognition, decision-making, etc. as described by science, or does it refer to the heart as a place of wisdom that can be correlated or understand with physiological or anatomical waylays explained by modern science? This article is aimed to untangle the mysteries behind the Qur’anic concept of heart and intelligence as juxtaposed to the scientific descriptions.

2. The Brain the Heart: Tracing the Connections Between the Heart and the Brain

The connection between the heart and the brain goes back to 1884, when the psychologist William James explain it very well through the scenario: “*Imagine you are walking through the woods, and you come across a grizzly bear. Your heart begins to race. You feel afraid, and you run*.” This theoretical impression of him essentially indicates that there is a connection between a physical reaction (a racing heart) that get-up-and-go one’s emotional sentiments (fear). Corroborating this notion scientist over a period of 200 years gradually tries to find answer to various questions regarding heart function and its controlling mechanism. In this long run Dr. J. Andrew Armour originally break the new ground in 1994 in the field of cardiology by introducing the concept of functional ‘heart brain’. He showed that the heart has its own “little brain” which is comprised of a complex state of the art intrinsic nervous system. (Armour, 1994) And that this little brain contains several thousand neurons very similar to the neurons in the head brain both in structure and function; able to sense, feel, learn, and even retain memory. (Watkins, 2013) More to the point it’s also experimentally prove that this little heart brain secretes certain chemicals, (neurotransmitters) and proteins similar to those produce by the head brain. So, this little heart brain not only functions as an internal controller of the heart but it also bidirectionally communicate with brain; receives signal from the brain and sent it parallelly to particular area of brain (medulla, amygdala etc) through network of nerve (afferents nerve pathways) where they influence perception, decision making and other cognitive processes. (Armour, 2004; Babo-Rebelo, 2016; Park, 2014). These discoveries result in the emergence of numerous new fields of inquiry, a plethora of new questions, and a far better understanding of heart-brain interactions. Let's examine the heart-brain link using an example from current research;

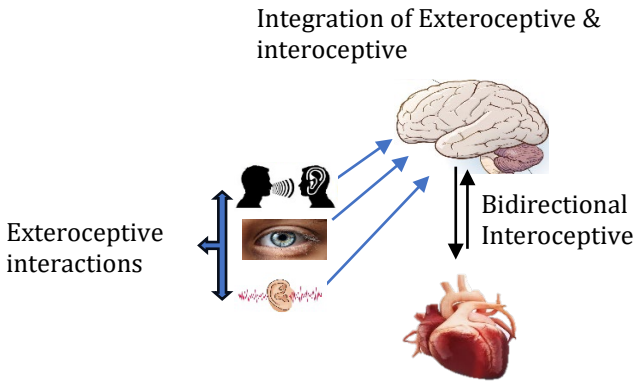

Fig. 1 *This figure is showing how brain processes interoceptive-exteroceptive information and bidirectionally communicates with heart through complex autonomic responses.*

2.1 Heart-Brain Energetic Communication

It is now a well-established fact that the heart interacts and converses with the brain through conducting nerve impulses, secreting certain hormones, and by fashioning its electromagnetic fields; biophysically & energetically

(McCraty, 2015). For instance, it is empirically reported that our heart unfailingly produces 40–60 times more electrical impetus and up to several hundred times stronger electromagnetic force than the brain itself. This electromagnetic force is smartly carrying information and can affect the physiological processes of individuals in close proximity. This finding suggests that the heart may play a role in social interactions, empathy, and collective emotional experiences, challenging the notion that consciousness and emotions are solely products of brain activity.

2.2 Emotional Signifiance

The heart's role in emotions is one of the most compelling aspects of neurocardiology. While we have long associated emotions with the brain, it appears that the heart plays a significant role in emotional processing by secreting certain hormones like atrial natriuretic peptide or oxytocin that are strongly involve in regulating or establishing close bonds between individual, behaviour, cognition, tolerance and trust etc (McCraty, 2009). Research has also shown that the heart is capable enough to send signals to the brain that impact our perception of stress and anxiety. This interplay between the heart and brain is believed to underlie our intuitive decision-making and emotional regulation.

2.3 The Heart as an Information Processor

Recent research in neurocardiology suggests that the heart is not only involved in emotional processing but also in complex information processing. The heart-brain connection appears to contribute to our ability to make rapid, intuitive decisions, sometimes referred to as "heartfelt decisions." This challenges the traditional view that all decision-making processes are solely brain-based and hints at a distributed model of cognition where the heart and brain can plausibly collaborate in processing information and guiding our choices.

2.4 Heart Coherence

One concept that has emerged from neurocardiology research is "Heart Coherence". Heart coherence refers to a state in which the heart's rhythms (heart beat) pulse-to-pulse become more ordered and harmonious to impact the bodily processes especially brain activity. In other words, it is the heart which has been associated to self-regulate the emotional balance and cognitive clarity of an individual. Achieving heart coherence through techniques like heart rate variability (HRV) biofeedback or mindfulness practices is believed to enhance overall well-being, resilience to stress, and even cognitive performance.

2.5 Emotions, Intuition, and the Heart-Brain Connection

The discovery of heart-brain connection challenges and called into question the common belief that emotions are only created and processed in the brain. The heart's impact on emotions cannot be disregarded in the modern world, even while the brain unquestionably plays a vital part. According to research, the heart and brain interact via the vagus nerve, and the chemicals it releases have an impact on our emotions, intuitions, implicit knowledge, and conscience. This finding emphasizes the value of taking a holistic approach to understanding a person's mental health and emotional well-being, particularly in light of recent fascinating discoveries about the interplay and communication between the brain and other vital body organs and how these interactions affect an individual's life in a much broader context than previously understood, or rather beyond the conventional framework.

2.6 Neurological Disorders and the Heart

Understanding the heart-brain connection has implications for various neurological disorders. Conditions such as epilepsy, which were traditionally thought to be primarily brain-related, are now being studied from a neurocardiological perspective. Researchers are investigating how the heart's electrical activity and neural connections may contribute to certain neurological conditions and exploring novel treatment options**.**

2.7 Embidied Cognition and Phenomenology

From a philosophical standpoint, the heart-brain connection challenges the traditional dualism between mind and body. The concept of embodied cognition posits that our cognitive processes are deeply intertwined with our bodily experiences. In this context, the heart represents an essential aspect of embodied consciousness, challenging the Cartesian separation of the thinking mind from the physical body. This philosophical shift aligns with phenomenology, a school of thought that emphasizes the subjective experience of the body as the foundation of human consciousness.

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2.8 Consciousness and Emergent Properties

In the realm of philosophy of mind, the heart-brain connection raises questions about the nature of consciousness itself. It encourages us to explore the possibility that consciousness may not solely be an attribute of brain activity that emerges but may also involve the heart as an active contributor. This contradicts reductionist theories that attempt to explain consciousness only in terms of neural processes or brain activity. Instead, it contends that consciousness is an attribute that develops as a result of the intricate interactions between the heart and the brain, a claim that has consequences for panpsychism and other philosophical theories of consciousness.

2.9 Holistic Well-Being and Virtue Ethics

From an ethical perspective, the heart-brain connection encourages us to adopt a more holistic approach to well-being. This viewpoint is in line with virtue ethics, a philosophical system that promotes moral excellence and flourishing. It encourages us to develop qualities like emotional intelligence, empathy, and ideals that are centred on the heart. This ethical dimension of neurocardiology challenges utilitarian or deontological ethics that focus solely on rational decision-making.

2.10 The Ethics of Emotional Intelligence

Ethical theories, such as virtue ethics and care ethics, resonate with the heart's role in emotional processing. Virtue ethics, championed by Aristotle and others, emphasizes the cultivation of virtuous character traits, including emotional intelligence, empathy, and compassion. The heart's involvement in emotional responses challenges utilitarian ethics by highlighting the importance of emotional well-being and moral sentiment in ethical decision-making.

2.11 Heart Responds to Exteroceptive Move

Another interesting scientific finding which supports the notion that the heart’s little brain is candidly involved in sensing and transmitting information pertaining to different voices we hear, to style of talking, intent of talking, to man’s eye contact to facial expressions. Since awareness, emotion, and the inner voice (intuition) are synchronistically aligned with the heart's energetic power, it is acknowledged factually that the heart simulates the brain. In other words, it is our deeper inner voice, emotion and awareness that are in truth physiologically connected with our brain systems (psychological baseline) and that all these elements together intelligently self-regulate our thoughts, emotions and consciousness; the sense of self, perception of others, environment etc (Park, 2019).

3. The Brain in the Gut: Tracing the Connections Between the Gut and the Brain

The gut simply refers to our digestive tract, which is a long tube running from the mouth to the anus. It comprises of food pipe (oesophagus), stomach, small intestine, and large intestine (colon). If we look at its structural organization it is evident that it’s prime responsibility is to facilitate the digestion and absorption of nutrients from food, as well as the elimination of waste. However, not long-ago scientists learned multiple functions of guts including its role in regulating mood, cognition and other elements of mental health. They noticed several millions brain like cells (neuron) in the complete gut that secretes certain chemicals (neurotransmitter) like serotonin, cortisol and many more which not only control the movement and function of the gut by itself but also help communicate with the brain bi-directionally. The scientists referred to this local brain like system as the “second brain.” (Azzalini, 2019; Mayer, 2016).

4. Heart the Qur’anic Perspective

The term “heart” in Islamic philosophy has different connotations, simply beyond its anatomical and physiological role, it is envisaged as the basis of intellect, wisdom and the home of sentiments translating into every good or evil thoughts and deeds. This approach indicates that the main purpose of the Islam is to edify the mankind and to help them distinguish between what constitute guidance and unorthodoxy. Standout supporting explanation can be found, in *Surat Al-Anfal 8:24* wherein Qur’ān says that

Allah intervenes between man and his heart. Corresponding assertion we can find from the hadith of prophet Muhammed (pbuh) “Verily, the hearts of all the sons of Adam are between the two fingers out of the fingers of the Compassionate Lord as one heart. He turns that to any (direction) He likes. Then Allah’s Messenger

(ﷺ) said: o Allah, the Turner of the hearts, turn our hearts to Thine obedience." (Sahih Muslim, 46:29). Idealistically, if we-self analyse all such verses in point of fact it reflects the metaphysical characteristic of consciousness, wisdom or intelligence for example there are many verses in the Qur'ān where human intelligence has been invoked or impel using either the term like "Yaqiloon" or "Yataffakkaroon" or "Ulul albab"[1] ("In the creation of the heavens and the earth, and the alternation of night and day, there are signs for people with intelligence" Surat Aal-e-Imran 3:190) without pointing towards brain or heart. Conversely, there are several verses where believer's attention has been specifically drawn towards the heart not only as a promontory of intelligence, wisdom, emotions but also as an instructor of self censoring "Have they not travelled through the land, and have they hearts wherewith to understand and ears wherewith to hear? Verily, it is not the eyes that grow blind, but it is the hearts which are in the breasts that grow blind". (Suart Al-Hajj 22: 46).

"Verily, therein is indeed a reminder for him who has a heart or gives ear while he is heedful" (*The Qur'an 50: 37*), "They have hearts wherewith they understand not" (*The Qur'ān 7: 179*). Likewise, the Qurán lays heavy emphasis on the purification or cleansing of heart from negative mannerisms like arrogance, jealousy, greed and other associated practices (*tazkiya-e-nafs*) and persuade mankind to safeguard it by nurturing virtues such as sincerity, humility, compassion, and gratitude. While in *Surat Al-Isra 17:36* the Qur'an talks about the inter relationship between hearing and seeing on heart comprehension "*Verily! The hearing, and the sight, and the heart, of each of those you will be questioned by Allah*" (*The Qur'an 17:36*) because the perception that develop through their interaction in truth governs our actions.

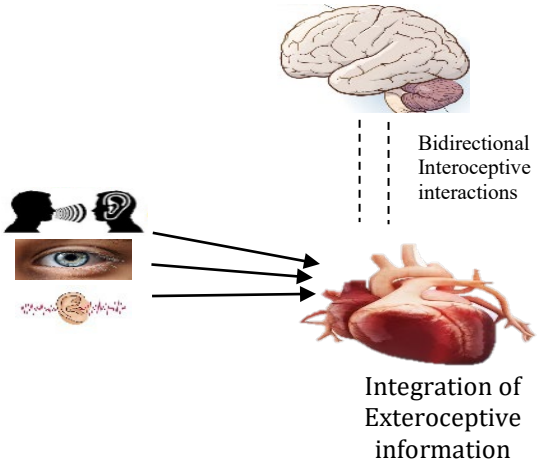

Figure 2 *Qur'ānic Perspective of Heart Showing Exteroceptive Pathway of Information*

In a nut shell what we can summarized is that, heart has a central place and has spiritual value in Islamic endurance and is of metaphysical significance. The Qur'an, often refers to the heart as a place of wisdom and frequently converse its role in pondering, cognizing, belief, and moral discernment or has portrayed it as a reflection of inner self.

5. Gut; the Islamic Perspective

The present-day scientific concept where gut is functionally recognized as 'second brain' (gut brain) in terms that it not only controls our food digestion but intelligently communicate with our brain to impact our mood, emotions and cognizance. Islamically these super functional aspects of gut can be seen within the frame of Islamic dietary laws; concept of halal and haram food and its moral importance. The Qur'an in *Surat Al-Baqara verse 168* urges people to eat and drink whatever they wish without wasting *("Ye people! Eat of what is on earth lawful and good" (The Qur'an 2:168*) but should be halal

(*Surat Al-Aaraf 7:31*)

Similarly, verse 88 of *Surat Al-Maidah* also insist on the consumption of halal food

[1] Ulul Albab are persons who use their intelligence to think, reason about the creation in the universe of Allah.

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وَكُلُواْ مِمَّا رَزَقَكُمُ ٱللَّهُ حَلَٰلًا طَيِّبًا ۖ وَٱتَّقُواْ ٱللَّهَ ٱلَّذِيٓ أَنتُم بِهِۦ مُؤۡمِنُونَ ٨٨

"Eat from what Allah has provided you as good and lawful" (*Suart Al-Maidah 5:88*) inevitably these outlook shows off that Islam places a strong emphasis on the holistic well-being of individuals, all-encompassing physical, mental, and spiritual dimensions. And since the head brain, heart, and gut are not isolated from one another in actual fact they are interconnected through a complex network of neural, molecular and biochemical pathways, that eventually empower them to influence each other both physiologically and psychologically. For example: Stress or anxiety has been shown to a racing heart or digestive discomfort similarly, thoughts and cognitive processes can impact emotions and physical sensations. So, as a matter of fact, we can comprehend that the type of food (dietary choices) one consumes can also affect their mood, overall well-being, potentially influencing spiritual experiences.

6. The Qur'an and Science at the Interface of Faith

As the scientific eminence continues to excel with time, it is empirically proved that heart, gut and brain has its own intrinsic nervous system that empowers them to function independently of the head brain system on the one hand and on the other hand, enable them to impact head brain function alongside triggering bidirectional interaction with each other. This suggest that these organs though located distantly far apart but are closely interconnected and interdependent and that there are several clinical studies supporting this argument for example in various brain-based conditions (stress, anxiety, or depression) there is an involvement of heart and gut health or vice versa. Therefore, depending on each person's interests and level of knowledge, the discovery of a brain-like function in the heart and stomach have sparked a surge of discussions among diverse Muslim scholars and researchers that has led to its generalization over the entire range of Islamic teachings. Due to this, a plethora of literature has been published relating scientific findings with the Qur'anic concept of heart-interceded wisdom and why the Qur'an insist and talks about Heart as a reflection of man's religiousness or piety. On one side of the coin, this reflects inquisitive disposition of people to relate and deepen the understanding of Qur'anic concepts as juxtaposed with empirical evidences provided by science. On the other hand, it is important to note that not all Muslims and religious scholars necessarily see these overlaps in the same way. They are of opinion firstly that science is entirely an evolving field, and so scientific knowledge will continually grow as new evidence and discoveries emerges. What is considered scientifically established today may be refined, value-added or revised in the future. This dynamic nature of science makes it difficult to establish a permanent or definitive connexions between scientific findings and Qur'anic teachings. Secondly, both science and Islam acknowledge the limits of human understanding. There may be several aspects of life's creation and existence that can be beyond the purview of science or to be precise human comprehension and are purely considered as matters of faith. Making an effort to relate every scientific discovery with Qur'anic teachings may at time either oversimplify complex issues and risk coalescing the two distinct domains. Thirdly, the Qur'an quite often used several terms allegorically or metaphorically to describe various subjects. For instance, the term "Nasyat" in *Surat Al-alaq 96:15-16* is used metaphorically to describe the disgraceful treatment for the immoral liar. So, when neurobiologists demonstrated that a person's propensity for lying is controlled by certain neurons present in specific region of the brain (the frontal lobe). Muslim scholars rejected the notion, claiming that the Qur'anic term "Nāṣyat" is metaphorically used to refer to the "lying, sinful" person rather than a pointing towards specific region of the brain. Indeed, this argument of scholar is undoubtedly in coherence with the linguistic definition wherein it is referred to a lock of hair growing just above the forehead (forelock) or front part of the head (forepart of the head) but not the frontal lobe of brain by itself. Similarly, sealing of the heart, eye or ear described in the Qur'ān is metaphorical and actually represent the spiritual mind-set and choices of particular group of individuals.

(Surat Al-Baqarah 2: 7) "Allah has set a seal upon their hearts and upon their hearing, and over their vision is a veil. And for them is a great punishment."

Or

(Surat Al-Mutaffifin 83:14) "No! Rather, the stain has covered their hearts of that which they were earning."

Or

(Surat Al-Nisa 4:155) "So because of their breach of their covenant, We cursed them and made their hearts grow hard. They distort words from their [proper] usages and have forgotten a portion of that of which they were reminded.").

Another example relates to a person's ability to make wise decisions or employ their wisdom in an appropriate direction. Both science and Islamic teaching address this matter differently; science considered brain as an exclusive organ of intellect but Islamic philosophy and theology although places high value on the role of "aql" (reason or intellect) in decision making or using wisdom but has nowhere specifically mention brain as a source of intellect. The Qur'anic verse either motivate human to use the given intelligence and logic to argue, explore and reason with the objective to identify the truth and nurture the spiritual belief and depicted the heart as an organ of intellect, place of faith and consciousness. In addition, the Qur'an portrayed heart as measure of degree of spiritual receptiveness of a person to divine guidance and a deeper level of transcendental understanding with a pure, sincere, and sound heart free from arrogance, hypocrisy, and moral impurities, rather than mere a house of intellect. Therefore, the Qur'anic and scientific concept of heart brain in truth discuss two different features; spiritual vs physiological /anatomical. That is why, there is a state of confusion among people in general and these disagreements quite often becomes a drive for people to rush towards any newly published scientific reports that offer some clues to corroborate it with the Qur'anic verse. Given to these differential perspectives it is imperative to take into account few most important aspects that can eventually guide us to understand the intellectual role of these organs put forth by science and Islam holistically;

1) Is spirituality being entirely a transcendental experience or it's realism and practicality can be influenced by physiological process? Because logically, we cannot overlook the competency of physiology in shaping human behaviour and cognition in the context of present scientific knowledge.

2) Does the Qur'an refer to the heart as a place of wisdom in a physiological or anatomical manner as understood by modern science. Or use the word "heart" in a metaphorical and symbolic sense to denote the inner facets of human consciousness, faith, and comprehension

3) If the impact of physiology on human behaviour or spirituality per se is believed then how the Qur'ānic concept of sealing of heart, ear and eye can be physiologically explained?

Before attempting to find an answer, let me briefly outline the Qur'anic idea of the heart under the following headings that can assist us to better comprehend how the intricate physiology of the heart interacts with the teachings of the Qur'an and how seeing and hearing particularly, play a pivotal role in shaping one's understanding, beliefs, and moral choices:

a) Understanding and Reflection: The Qur'an encourages believers to ponder, reflect, and use their hearts to gain a deeper understanding of its teachings. However, this is a call to intellectual and spiritual reflection.

b) Spiritual State: The Qur'an emphasizes the importance of having a pure, sincere, and sound heart free from arrogance, hypocrisy, and moral impurities. This concept pertains to one's spiritual state or inner self rather than the physical heart.

c) Guidance and Enlightenment: The heart is symbolically associated with the reception of divine guidance and enlightenment in the spiritual sense. Believers are asked to strive hard to customised their behaviour, conduct and approach towards Islamic teachings. Otherwise refer to as purifying and cleansing heart.

d) Spiritual Insight: The Qur'an refers to the heart metaphorically as the wellspring of spiritual insight and intuition, implying a greater degree of comprehension that goes beyond the intellectual role of what science has understand today.

In summary, the Qur'anic allusions to the heart could be both literal or figurative, on one side Qur'an highlighted the role of the heart in wisdom, decision-making, cognition etc; which is interestingly in consonance with recent scientific findings, while on the other side it also refer to the inattentive attitude of a person to the intellectual malfunctioning of the heart as these individuals are not pondering in the right direction using the inputs/ information given by ear and eyes thus they have become spectrally immune to guidance and constant reminders so spiritually they are closed off. And if we look at this whole interconnectedness explained by the Qur'an through the lens of science it is crystal clear today that both visual and auditory stimuli play significant role in evoking emotional, and cognitive responses. And there are many common examples that we can use to relate and understand this interconnectedness,

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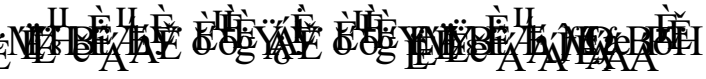
1) Stress Response: Today it is a well-established fact how stress can impact on the heart-gut-brain axis. When we see or hear something stressful, our brain and heart releases certain stress hormones like cortisol and adrenaline. This stress response can affect our gut by altering digestion or causing discomfort and also can contribute to heart issues by boosting heart rate and blood pressure. Additionally, continuous stress has also been proven to impair decision-making, rational thought, and memory skills. Another related scenario of how what we see and hear can alter how we feel about ourselves or how we make decisions is when we watch a culinary show or hear about a delicious supper. This can not only make us hungry but also impact or sway our food choices depending upon the way it grabs our attention and our gut is therefore accordingly get impacted as it processes the food we eat as a result. Similar to this, it has been demonstrated that both positive and negative unexpected emotional shocks have an impact on the autonomic nervous system of the heart, which in turn has an impact on the limbic system of the brain, which essentially assesses, perceives, and processes emotional content.

2) Stress overseer: It is widely recognized fact that positive emotions can be evoked by visiting a loved one or listening to calming music, but negative emotions can be brought on by experiencing trauma or hearing upsetting news. Similar to this, listening to the Qur'an and reflecting on its verses can inspire positive emotions, such as hope, gratitude, and contentment. These emotions have the power to counteract the unfavourable emotional states that stress is known to bring about, such fear and worry. The Qur'ānic verses often highlights the ideas of patience, trust in Allah's plan, and the transient nature of life's challenges, which can help reduce stress.

3) 

"*And their hearts find comfort in the remembrance of Allah"* (*Surat Al-rad 13:28*).

4) Moral and Ethical Guidance: The heart-gut-brain axis communication system has recently become the subject of growing interest with respect to physical health and emotional regulation. According to this standpoint it is argued (with contemporary scientific and philosophical understanding) that they can also impact how religious guidance is consciously processed and internalized, thereby influencing how moral and ethical decisions are made, etc. Observing the signs of Allah's creations in the world and relating with the Qur'anic pronouncement can stimulate cognitive reflection and a greater comprehension of the purpose of creations. (*Surat Al Baqara 2:164*). This intellectual engagement can be seen against the physiological impact visual and auditory stimuli exert, or intrinsic nervous system of heart and gut plays by releasing certain hormones or neurotransmitters (serotonin, dopamine etc) that influence critical thinking, contemplation, and the acquisition of wisdom. For instance, feelings like empathy and compassion, which the heart may control, can result in more prosocial and moral decisions. In a similar vein, people who are experiencing negative emotions may have moral judgments that differ from those who are experiencing positive emotions.

7. Conclusion

Delving ourselves into the relationship between scientific discoveries and Islamic teachings, particularly concerning the heart and the concept of sealing hearts, ears, and eyes in the Qur'an, reveals an interesting interplay of faith and knowledge. In one respect, it has upended our various century old outlook towards three most vital body parts; heart, gut and brain while on the other side it has bear out that scientific theories, inventions, and other concepts are highly contextual and relative to our comprehension of the natural world. It is also worth noting that science and the Qur'an can corroborate or contradict each other on various matters. Most relevant is our understanding of the universe, from the laws of physics and chemistry to the complexities of biology and the intricacies of human cognition. That being said, it's also important to disclose that presence of diverse perspectives within the Muslim community regarding this intersection (Science vs Qur'an); some are more interested in observing or analysing the relationships between scientific discoveries and their religious beliefs and practices, while, others are more focused on medical issues without relating it with religious philosophy. As an analogy the recent scientific idea of heart-gut-brain connection (emotion and cognition) in truth challenges conventional notions about the division of labour between these vital organs, suggesting that the heart or gut is not merely a mechanical pump or digestive machine but an integral part of our emotional and cognitive experiences. With the potential to influence how brain can interprets the information about emotions, thought, and other matters that it receives from these organs. Interestingly enough, it is important to remember that this concept of "little brains" are largely representational to certain extent and are not distinctly meant to

imply that the heart and gut are substantially more "brains" than the head which has multiple distinct regions, such as the cerebral cortex and the amygdala, each of which has a unique and interdependent function. which is interestingly in consonance with the Qur'anic verses highlighting their role in wisdom, decision-making, cognition etc; Similar to this, Qur'anic verses that depict the sealing of ears, eyes, and hearts are intended to represent moral and spiritual facets of human behaviour and guidance. It represents people's lack of attention to heavenly instructions because they don't believe in them, reject them repeatedly, or refuse to accept the truth. So, their competence to comprehend, focus or decipher spiritual domain is gradually worn-out due to their persistent disbelief, prolonged repeated rejection of Allah's directives, or a refusal to acknowledge the truth. Significantly, this sealing is depicted as the result of individual decisions and deeds, with the potential to unseal depending on one's contrition and pursuit of forgiveness in addition to their rightful use of the intellectual perception bestowed by Allah the Almighty.

At the end of the day, this intersection underscores although there is a harmonious coexistence of scientific knowledge and religious teachings at times, offering a rich tapestry of insights that can deepen one's understanding of the world and the profound relationship between faith and reason. But what is more important is we cannot always use outcome of various scientific interpretations as ultimate source to understand the Qur'an. Therefore, it is plausible to take into consideration their limitation before admiring or criticizing any scientific findings as juxtaposed to Islamic teachings.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: ***study conception and design:*** *Ayesha Alvi, Mohammed Rizwan;* ***data collection:*** *Ayesha Alvi;* ***analysis and interpretation of results:*** *Ayesha Alvi, Mohammed Rizwan;* ***draft manuscript preparation:*** *Ayesha Alvi, Mohammed Rizwan. All authors reviewed the results and approved the final version of the manuscript.*

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