A Comparative investigation of the Origin of Psychokinesis in Mulla Sadra's Philosophy and Bohmian Quantum Physics

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Abstract

Psychokinesis is the ability to affect objects without using physical forces. In Mulla Sadra's philosophy, this ability is rooted in the imagining of the soul. In quantum physics, the concepts of the observer's role and quantum entanglement provide potential explanations for this phenomenon. In this paper, we consider a comparative analysis of Mulla Sadra's philosophy and Bohmian quantum interpretation, highlighting the affinity and mutuality of these two approaches. Both approaches are based on causality and accept the role of the mind in doing things . While Mulla Sadra posits that the ability to influence objects and their physical movments is linked to the strong imagining of the human soul, Bohmian quantum physics suggests that the entanglement of the observer's mind with the inner level of phenomena (worse) enables the possibility of psychokinesis. It appears that relying solely on a physical approach to explain miracles, which represent a specific subset of psychokinesis, is neither accurate nor effective.

Keywords

Psychokinesis, Imagining of the Soul, Quantum Entanglement, Mulla Sadra's Philosophy, Bohmian Quantum Physics

1. Introduction

The mind's ability to influence objects, time, and space through non-physical methods is referred to as psychokinesis (Mheel, 1962: 267). The term combines "psycho," meaning inner or soul, and "kinesis," meaning movement or displacement. Psychokinesis allows individuals to influence external systems without physical tools, akin to the soul's influence on matter (Krishna, 1984: 1). This ability may enable individuals to move or stop objects by focusing their attention without physical force. Parapsychological practices can be tested and are not inherently pseudoscientific. While some deceptions in these practices exist, numerous consistent reports lend credibility to their occurrence.

Mulla Sadra (1571-1640), a prominent philosopher in the Islamic world, asserts that the human soul possesses the power of influence, extending to its control over the body and objects. Some miracles attributed to divine prophets exemplify psychokinesis. Additionally, ordinary individuals, including ascetics and jockeys, have demonstrated extraordinary actions. Classical physics, with its rigid structure, has historically overlooked the mind and its properties, neglecting the potential for mental involvement in external events. In contrast, the randomness of particle movements in quantum physics and the observer's position suggest the possibility of free will.

In the 20th century, physicists introduced theories such as the role of the quantum observer (W. Heisenberg, 1959, p. 52-58), the quantum xenon effect (Henry Staap, 2011, p. 35), the unity of the universe (wholeness) (David Bohm, 1980, p. 189), and quantum entanglement (Roger Penrose, 1989, p. 356), paving the way for understanding the connection between the human mind and brain.

David Bohm's (1917-1990) quantum interpretation is realistic and based on the principle of causality, and for this reason, it is similar to Mulla Sadra's philosophy. Therefore, this paper aims to compare Mulla Sadra's philosophy with Bohm's views and address the following questions:

1. What is the origin of the psychokinesis phenomenon in Mulla Sadra's philosophy?

2. How can we interpret psychokinesis according to Bohmian interpretation of quantum physics?

3. Is it possible to explain miracles using philosophical and physical concepts?

4. What are the similarities and alignments between these two approaches in interpreting psychokinesis?

2. Soul's Imagination in Mulla Sadra's philosophy

In Islamic philosophy, the source of all human actions, both normal and extraordinary, is the soul. Philosophers refer to the immaterial essence of human existence as the soul. The will of the human soul can be the source of all actions. The power of the human soul can sometimes manifest actions without physical organs or tools. Mulla Sadra posits that the imagination of the self can be the origin of objects (Mulla Sadra, 2008, vol. 2, p. 151). Strong imaginations can lead to bodily occurrences without physical interactions; for instance, human souls can generate heat or cold without external sources (Mulla Sadra, 2008, vol. 2, pp. 182-184).

The influence of possessions on object occurrence relates to when a single form becomes the cause of a material being, indicating the causality of scientific existence concerning material beings. Here, imagination refers not to mental existence but to a scientific existence and a singular truth. Mental existence cannot be the source of effect, as it is a shadow existence (Javadi Amoli, 1997, vol. 8, pp. 228-229). The imagination of the self can lead to the creation of beings and things outside the mind (Mulla Sadra, 2008, vol. 1, p. 275). The ability to influence and physically move objects is documented by the strong and compelling imaginations of humans (Ibid., vol. 2, pp. 182-184).

In Islamic philosophy, the influence of one physical being on another depends on the establishment of specific conditions and alignments between the influencing and affected entities. The connection between the individual soul and the material body cannot exist without such alignment. Therefore, how can the soul, as a singular entity without spatial attributes or alignments, affect the body? Mulla Sadra argues that the proof of imaginary images must be separate from this world, as the sensible cannot master the sensible; rather, reason surpasses all senses (Mulla Sadra, 2008, vol. 3, p. 372).

Contrary to earlier philosophers who viewed the human brain as the site of sensation perception, Mulla Sadra asserts that the soul is the basis for all intellectual, imaginary, and sensory perceptions, with understanding of abstract forms possible only through the soul (Ibid., p. 384). Mulla Sadra's view of the soul as both a physical occurrence and a spiritual survival challenges previous notions of the soul's separation from matter. He posits that the soul's attachment to the body is for achieving perfection.

3. Explanation of Miracles in Mulla Sadra's Philosophy

In Mulla Sadra's philosophical framework, the human soul serves as the immediate agent of extraordinary actions and occupies a hierarchical position in God's manifestation. Causality is presented as manifestation, with the Most High as the doer of manifestation (Mulla Sadra, 2008, vol. 2, p. 357). The soul's influence manifests by separating or imposing its essence on matter. Mulla Sadra asserts that the prophet's soul can reach a level of honor and strength capable of healing the sick and transforming elements (Ibid., vol. 2, p. 152).

The prophet conveys meanings from God appropriate to his guardianship level, with or without mediation (Mulla Sadra, 2005, p. 631). Mulla Sadra believes that the perfect human being embodies the truth of Muhammadiyah and the existence of the Prophet and pure imams (Mulla Sadra, 1988, vol. 2, pp. 487-440). This being represents the culmination of creation, exhibiting three types of miracles:

1. Practical soul power, affecting the world by creating or removing forms (e.g., transforming air into clouds).

2. Imaginative power, connecting to the unseen world in a waking state.

3. Theoretical reason, where the essence of theoretical reason connects to active reason, imparting knowledge to rational souls by divine permission (Ibid., pp. 440-443).

Regarding the virtues of infallible imams, Mulla Sadra asserts that their complete mastery of feeling, imagination, and intellect grants them the position of divine caliphate. Imams can influence the world by separating or adding forms to matter, creating storms or healing the sick. They embody God's names and possess infinite knowledge, bringing souls to perfection and mediating between God and humanity in distributing blessings.

4. The role of the Physical Observer

In the established framework of classical physics, the mind and its properties are largely overlooked. In contrast, quantum physics posits that the observer and the phenomenon are fundamentally intertwined. An observer is an integral part of the world, influencing phenomena through the acts of observation and measurement (Golshani, 2015, pp. 35-37). In quantum physics, the existence of reality without

human observation lacks originality. Each system possesses potential states that are not realized until the act of observation compels the system to select one of these states. Thus, reality is generated through the act of observation. Young's double-slit experiment serves as a compelling illustration of the observer's role in the behavior of material particles. In this experiment, a beam of light is directed at a screen with two narrow slits. After passing through the slits, the light strikes a curtain behind, where its wave nature causes interference, resulting in a pattern of alternating dark and light bands. However, when the light is measured with a detector, it is observed as being absorbed in the form of particles (photons) (Feynman, 1965, pp. 1-8).

This suggests that the observer's influence on elementary particles (in this case, photons) causes them to exhibit particle-like behavior rather than wave-like behavior.

From Heisenberg's perspective, the world is filled with potential elements that are actualized through observation (Stapp, 2011, p. 6). The universe is replete with objective tendencies known as potential, from which all natural events arise. The act of observation selects a real event from the myriad possibilities connected to that event. During observation, potential is transformed into action. The transition from potential to action—such as a photon adopting particle behavior—occurs as soon as an atomic particle interacts with measuring devices. For instance, in Young's double-slit experiment, an electron can exist in both particle and wave forms. However, upon observation, one of these states is determined. Particles are dispersed in wave-like patterns, and until the observer makes a choice, it remains uncertain which characteristic of the atom will manifest. According to Yordan, the observer compels the electron to select a specific location, thereby creating the outcome of the observation. In the absence of human observation, reality does not exist; it is only upon observation that reality is formed (Jammer, 1974, p. 161). Wheeler posits that just as events in the quantum realm depend on whether the observer sees them, the macroscopic

world is similarly shaped by observers. Atoms become reality when they are observed (Wheeler, 1982, p. 383). Thus, the observer's role in creating the world and its components is a fundamental aspect of modern physics.
Some physicists argue that the observer's role is relevant only in the realm of microscopic objects and not in macroscopic ones. They contend that the epistemological implications of subatomic physics cannot be generalized to all of physics (Jammer, 1974, p. 162). However, physicists such as Russell Targ and Harold Poteff at Stanford University have claimed that displacement in macroscopic dimensions can also be verified through advanced magnetometer experiments (Targ and Puthoff, 1975, p.p. 602-607).
Henry Stapp, a contemporary American physicist, asserts that quantum mechanics becomes more comprehensible through Heisenberg's notion of a world filled with potential elements that are actualized by observation (Stapp, 2011, p. 6). Stapp believes that the reduction of the wave function, which pertains to the material world, occurs through the observer's observation, which is linked to the mental realm. He argues that in the traditional interpretations of Bohr's quantum mechanics and Heisenberg's framework, a sudden intervention in the mathematical description of the system is necessary to connect the mathematical representation of the physical state with human experiments. In this context, a human agent can intervene and freely choose one of the possible actions (Ibid., p. 22). Therefore, the role of the observer as an influential entity in events has been accepted by Copenhagen physicists, although the extent of this acceptance varies between the microscopic (subatomic) and macroscopic realms. In addition to the Copenhagen interpretation, David Bohm has also endeavored to clarify the role of the observer.

In classical physics, the observer's role is limited to observation and reporting. However, in quantum physics, the observer is intrinsically linked to the physical

phenomenon, and their observation and measurement can induce changes in these phenomena. In this context, the observer's observation actualizes potential elements. Young's double-slit experiment can be employed to confirm the role of the observer in the movement of material particles.

At the beginning of the 20th century, renowned physicist Niels Bohr discussed the significance of the observing mind in quantum physics. According to Bohr, in quantum mechanics, unlike classical physics, a clear distinction cannot be made between the measuring device and the object being tested; thus, there exists a unity between the two. Bohr's principle of the indecomposability of quantum systems posits that quantum systems do not possess intrinsic properties independent of observation. Consequently, the quantum system and the studied object form an indivisible unit, and the properties attributed to the system belong to the entire system (Golshani, ibid., p. 104). Quantum theory suggests that the world is an indivisible whole, where all components—including the observer and their measurement tools—are interconnected. This totality represents a layer of the hidden order of the universe. In this framework, the observer or measuring device is not separate from the observed object (Golshani, 2015, p. 205-211). In other words, reality does not exist in the absence of observation; it is observation that creates reality. We compel the electron to select a specific location, thereby producing the result of observation (Jammer, 1974, p. 161).

In the most extreme interpretations of the observer's role, figures such as Wigner and von Neumann argue that only an intelligent observer can bring the world to a specific state. In this view, only intelligent observers create reality (Golshani, ibid., p. 293). John Wheeler posits that events in the quantum world depend on whether an observer perceives them. In the macroscopic realm, the world is shaped by the observer. The act of observing induces changes in the external environment. The existence of atoms is contingent upon observation; their reality is established only when they are observed. Prior to observation, atoms may engage in chemical reactions with a degree of independence (Wheeler, 1982, p. 383).

Thus, the observer's role in creating the world is a philosophical aspect of this interpretation of quantum theory.
In light of these physicists' efforts, the foundations of quantum physics reject the independent role of the observer as posited in classical physics. Here, the observer and the observed system are interconnected. The results of each observation are confined to the actual choices made by the observer. This has led to studies on

telemetry, such as the effect of a human observer on the quantum phenomenon of radioactive decay.
Modern physics asserts that an observer not only influences a phenomenon but can also create different aspects of it. In fact, the observable and the observed are inseparable. Consequently, quantum physics regards the observer as part of the world, whose observation and measurement can change or even create a phenomenon. Therefore, in quantum physics, the observer is the true influencer. This contrasts with classical physics, where a clear separation exists between the mind and the object, and the observer merely describes external reality, with the existence and behavior of physical processes independent of observation (Golshani, 2015, p. 35-37).
Heisenberg demonstrated that classical interpretations of phenomena, observation, and measurement are incomplete and require fundamental revisions. From Heisenberg's perspective, the science of nature is a product of our interaction with it. What we observe is not nature itself; rather, it is nature as interpreted by us. Heisenberg argued that the act of observation alters the probability function, selecting a real event from all possible events. During observation, potentiality transforms into actuality. The interpretation of occurrence pertains solely to observation, not to the state of affairs between two observations. The transition from potential to action occurs as soon as an atomic particle interacts with measuring devices, resulting in a diverse reality. According to Heisenberg, the universe is filled with unrealized potentials that become actualized through measurements. He contended that natural science does not engage with nature itself but rather with nature as described and understood by humans (Heisenberg, 1959, p. 52-58).

5. **Quantum Entanglement**

Schrödinger first discovered the possibility of quantum entanglement, positing that the quantum state of a multi-particle system can be entangled. Einstein and his colleagues also addressed this phenomenon in the well-known EPR article. Quantum entanglement refers to the strong correlation between two or more particles in their physical characteristics, regardless of the distance separating them.
David Bohm was particularly interested in entanglement, which led to the proposal of Non-Locality within the Copenhagen interpretation. However, in contrast to the conventional interpretation of Copenhagen, Bohm sought to present a causal interpretation of quantum theory. He posited the existence of a hidden quantum field that, akin to Earth's gravitational field, permeates all of space-time. Unlike the

gravitational field, however, the influence of this quantum field does not diminish with distance, providing a unified coverage of the entire universe.
The causal activity of this imperceptible field serves as the origin of hidden variables in quantum mechanics. According to Bohm, and contrary to the assertions of Heisenberg and Bohr, the principle of causality governs subatomic systems. Bohm aimed to reinforce the role of the physical observer by proposing the hidden quantum field theory, suggesting that the mind of the physical observer is analogous to the inner kinetic layer he proposed.

6. Bohmian Interpretation and the Explanation of Psychokinesis

To explain psychokinesis within the framework of modern physics, we can utilize the concept of the observer's position and the role of the mind. Both the Copenhagen and Bohmian interpretations highlight that the origin of human actions—whether normal or parapsychological—stems from mental processes. However, the notion of the observer's position has not been universally accepted; notable physicists like Einstein have rejected it. Einstein posited that the true state of a physical system exists objectively, independent of any observation or measurement, and can be described using physical concepts. The aim of physical research is to understand this reality as it exists, which involves recognizing objects that are independent of the human mind (Golshani, 2015, p.199).
Schrödinger's cat experiment was designed to critique the role of the observer in the creation of objects. In this paradox, until the observer opens the box, the probability of the cat being alive or dead is 50%. However, the observer's action ultimately determines the cat's fate with certainty. The cat's life or death, according to this experiment, is also contingent upon the radioactivity of the uranium in the device (Schrödinger, 1983, p.159-167). Thus, both Einstein's and Schrödinger's principles suggest that the observer's position is not a universally accepted concept.
In contrast, David Bohm proposed that the universe functions as a hologram, where every part reflects the characteristics of the whole. Accepting the holographic theory fosters a belief in unity and completeness when investigating quantum phenomena. Bohm argued that analyzing individual parts without considering the totality derived from a hidden order is inadequate. He asserted that all components of the universe—including the observer and their measurement tools—are interconnected and form a unified whole (Bohm, 1992, p.6).
In Bohmian quantum interpretation, mind and matter are interwoven, existing within the totality of the universe's hidden movement. His holistic approach blurs the

distinction between the observer and the observed (Bohm, 1985, vol.20, p.127-129). This perspective reinforces the theory of the observer's role in the common interpretation of quantum physics. While Einstein initially proposed the existence of hidden variables in the universe, Bohm expanded on this by accepting Non-Locality and introducing a pervasive quantum field as the hidden variable. Bohm sought to bolster the role of the physical observer through his hidden quantum field theory. He argued that external objects and entities, situated in the non-hidden layer of the universe's order, possess original existence. In Bohm's framework, changes in the inner layers of reality manifest in the outer layer due to their interdependence. Given the unity of these layers and the connection between the mind and the inner level, any mental influence (such as Psychokinesis) can lead to changes in the outer layer. Thus, the mind can effect transformations in the outer layer while adhering to the governing physical laws. According to Bohm's theory, the human mind, as part of the inner level of existence, is connected to the inner layers of the universe. Consequently, human thoughts and imaginations reside within this inner level and are integral to it. By influencing this inner layer, an individual's ideas can alter the outer surface of reality. Importantly, the physical laws governing the outer layer remain intact; thus, Bohm's interpretation offers a framework for understanding how the mind can affect matter without contravening these laws. Bohm delineates two aspects of the world: the external and the internal. The entities and objects that appear in the external layer, within the realm of time and space, are reflections of the hidden order present in the inner layer. By considering the totality of both layers and the interconnectedness of the mind with the inner level, any mental influence can lead to observable changes in the outer layer. In this manner, the mind can transform the outer layer by engaging with the inner layer while remaining consistent with the physical laws that govern it.

6. Physics and the possibility of explaining Miracles

God's prophets sometimes used miracles as signs of their prophecy, so that people will realize the truth of their prophet hood. These miracles cannot be replicated by non-prophets and cannot be explained solely by material laws. *Tahaddi* refers to the challenge posed by the prophets, rendering others incapable of replicating their miracles. A defining characteristic of miracles is that they cannot be repeated by ordinary individuals. Consequently, even if a physical mechanism for a miracle can be conceived, it does not reach a practical or actual stage.

Furthermore, the indeterminacy inherent in experimental sciences, along with the rejection and validation of numerous physical theories, prevents us from using these theories to explain miracles with certainty. The dismissal of classical physics laws at subatomic levels in the 20th century and the introduction of quantum physics exemplify this indeterminacy. In this section, we talk about the possibility of a physical explanation of some miracles

The Holy Quran describes the sleep of the Companions of the Cave with the following features:
1. "**And they stayed in their cave for three hundred and nine years.**" (Kahf, 25)
2. "**And when the sun rises, it is to the right of their cave, and when it sets, it is to the left**." (Kahf, 17)
3. "**If you saw them, you would run away from them and be filled with fear.**" (Kahf, 18)
One might argue that if a strong gravitational field is applied in a location, time would slow down, causing all objects (such as the sleeping individuals in the cave) to align with the direction of this field. In such an intense field, sunlight would also bend. However, creating a specific area with strong gravitational field on top of a mountain is not a simple task and may even be impossible. Moreover, the long sleep lasted approximately 300 years, during which time passed normally rather than slowing down. The statement made by the Companions of the Cave upon waking, "**We stayed for a day or part of a day**," is interpreted differently in Islamic philosophy, suggesting that their sleep refers to a state of existence detached from time.

Another point is that the vastness and limitless nature of miracles often make proposing a physical mechanism for them challenging. A prominent example of this is the parting of the sea by the staff of Prophet Moses (PBUH). The Holy Quran says:
So when the two hosts saw each other, the companions of Musa cried out: 'they will surely reach us (and destroy us).' He said: 'By no means; surely my Lord is with me: He will show me a way out.' Then We revealed to Musa: 'Strike the sea with your staff.' So it had cloven asunder, and each part was like a huge mound. There, we brought the others near, and We delivered Moses and all those who were with him. Then We drowned the rest. There is indeed a sign in that, but most of them do not have faith (Shoara, 61-68).
In the *Noor al-Saqlain Tafsir*, it is narrated that the Israelites requested Moses to open twelve separate paths in the water for their twelve clans, allowing each group to see the others crossing simultaneously (Al-Hawizi, 1412, vol. 4, p. 54). From a

physical perspective, one proposed explanation is to envision waves that exist eternally, with the water level at the crest of the waves (Like a great mountain) and the sea bottom in the troughs. However, in practice, the range of water waves always diminishes, making it impossible to create steady waves. Thus, it is difficult to conceive a physical mechanism for such a miracle.
Additionally, the limitations of some modern physics theories in explaining miracles are noteworthy, such as the miracle of transferring the throne of the Queen of Sheba to the presence of Prophet Solomon. This miracle is described in Surah Naml (verses 38-40):

He said: O eminent people! Which of you can bring to me her throne before they come to me in submission? One audacious among the jinn said: I will bring it to you before you rise from your place; and most surely I am strong and trustworthy for it. One who had the knowledge of the Book said: I will bring it to you in the twinkling of an eye. Then when he saw it settled beside him, he said: 'This is of the grace of my Lord that He may try me whether I am grateful or ungrateful; and whoever is grateful, he is grateful only for his own soul, and whoever is ungrateful, then surely my Lord is Self-sufficient, Honored.

One proposed explanation for this miracle involves the theory of special relativity. According to Einstein's equivalence relation of mass and energy ($E=mc^2$), the components of the throne could be separated and converted into energy, which would then travel from Yemen to Palestine in a fraction of a second before reconstituting as matter at Solomon's location. However, for this to occur, the parts of the throne must first be separated, converted into energy, and then transferred at the speed of light to Solomon's location, where they would reassemble. The time required for this process would exceed what was suggested by Asif bin Barkhia, Suleiman's heir. Another proposed explanation involves the concept of Quantum State Teleportation. In the subatomic realm, to create a complete version of an object, one must determine the states of its molecules, atoms, and electrons (quantum properties). However, according to Heisenberg's uncertainty principle, achieving this with the desired accuracy is not feasible. Consequently, the error renders this approach impractical, and it appears that the laws of quantum mechanics prohibit it. Nevertheless, a group led by Charles Bennett in 1993 proposed that the unknown quantum state of a particle could be transferred to another particle without the receiver gaining any information about the received state. Utilizing pairs of entangled particles could potentially bypass existing limitations at the quantum level. (Bennett, G. et al., 1993, Lett.70)
According to this quantum method, it is conceivable that the particles of the Queen's throne were first disintegrated, their quantum coordinates sent to the region of Sham, and then new particles with identical quantum coordinates reassembled in Solomon's domain to form a throne identical to that of Bilqis. However, two significant issues

arise:
1. Quantum transference requires a source to produce entangled particles, which is absent in this scenario, thus precluding the use of transference in this event.
2. This process results in a three-dimensional copy of the object rather than the transfer of the object itself; it is merely a replica.
Therefore, employing the concept of quantum transfer to explain this miracle does not appear to be a valid approach.

7. Comparing the origin of Psychokinesis in Mulla Sadra's philosophy and Bohmian quantum physics.

In Mulla Sadra's philosophy, the strong soul of a human being serves as an active cause, capable not only of controlling the body but also of influencing other beings and external objects. This ability to affect objects and physically move them is rooted in the powerful and compelling imaginations of humans. In any endeavor, there are two opposing actions: action or omission and human imagination can favor one over the other.
In quantum physics—specifically in both the Copenhagen and Bohmian interpretations—the concept of the observer's position and the role of the mind are utilized to explain remoteness. The human observer's mind forms a unified whole with natural systems, and this observation has a tangible effect on matter. In Bohmian quantum physics, the human mind simultaneously interacts with the inner aspects of the universe (the layer of hidden order) and influences the outer layers without violating physical laws. By considering the observer's role and the entanglement of the observer's mind with the internal kinetic level of phenomena (as posited in Bohm's quantum theory), the possibility of psychokinesis emerges. Bohm's model emphasizes causality and the unity of the world by accepting the concept of Non-Locality, which can elucidate the Non-Local and rapid effects of the soul's light on matter, such as the influence of the ego in the manifestation of narcissism.
Based on the principle of Non-Locality, Bohm sought to articulate the relationship between mind and matter. In this context, the effects of Bohm's quantum field are independent of increasing or decreasing distances. His theory serves as a conceptual framework, albeit without providing clear details. However, in some of Bohm's positions, the assumption of a hidden order takes on a material aspect, which cannot be equated with the philosophical notion of a singular ego. To avoid Platonic

dualism, Bohm likened his theory to Aristotle's (Bohm, 1980, p. 12). Although Aristotle's explanation of the duality of soul and body differs significantly from that of dualists like Plato, ambiguity arises from Aristotle's lack of discussion regarding the relationship between the abstract soul and the material body. This ambiguity also permeates Bohm's theories; while he speaks of mutual participation as a means of communication between mind and matter, the question remains: how can there be a partnership between two levels, one abstract and the other material, that can align with each other? This issue remains unresolved in Bohm's interpretation unless we assume that Bohm's mind is entirely material and consider his proposed quantum field as another realm of matter.
Bohm believes that mind and matter are abstracted from a single whole (Bohm, 1980, p. 68), perhaps believing this to be the basis for their alignment. However, this perspective is flawed, as one is material while the other is immaterial. But Bohm's comprehensive view and his attempt to establish a single origin for the mind and brain, negating the real duality between them, merit attention.
In Mulla Sadra's philosophy, existence is regarded as a singular truth, and the unity of the universe is accepted based on the system of manifestation. According to Allah, the affairs and manifestations of truth are His manifestations. What is termed the cause is the original, while the effect is considered one of His affairs. In explaining the causality of Tashauni, he views the origin of external multiplicities as a single matter, referring to it as expanded existence. The external multiplicities possess a contingent existence, while true existence is specific to Wajib Ta'ala. The cause is the principle, and every effect is a manifestation of His affairs.

8. Conclusion

Just as in Mulla Sadra's philosophy, the imagination of the self can bring about changes in the human body and the external world, in Bohm's view, the human mind generates changes in the outer layer of reality. Bohm perceives the mental aspect of all objects as interconnected and considers changes in the inner and mental layers of the world to be the cause of external changes.

In Mulla Sadra's theory of causality, mind, matter, and the entirety of existence share the same origin and are manifestations of an authentic being. Mulla Sadra asserts that, according to the system of manifestation and majesty, the affairs and manifestations of truth, as well as the occasions of His manifestations, constitute the totality of the one world. Although Bohm acknowledges that consciousness and

matter arise from the same source, he characterizes this origin as the totality of the unknown and uncharted movement of the world. The vagueness surrounding the origin of this movement presents a limitation in Bohm's model.

References

- Bennett, C. H., Brassard, G., Crepeau, C., Jozsa, R., Peres, A. and Wooters, W.K. (1993). Teleporting an unknown quantum state via dual classical and Einstein-Podolsky-Rosen channels, *Phys. Rev,* 70 (13), 1895-1899.

- Bohm, D. (1985). Hidden variables and the Implicate Order, *Zygon journal of Religion and Science,* 20 (2), 111-124.

- Bohm, D. (1992). *Thought as a system,* first published by Routledge, London and New York,

- Bohm, D. (1980) *Wholeness and the Implicate Order*, first published, London and New York, in Routledge Classics.

- Feynman, R. (1965) *The Character of Physical Law*, The MIT Press, Cambridge.

- Golshani, M., (2006) *An Analysis of the Philosophical Views of Contemporary Physicists,* 4th Edition, Tehran: Research Institute of Human Sciences and Cultural Studies.

- Heisenberg, W. (1959). *Planck s Quantum Theory and the Philosophical Problems of atomic Physics*, p. 52-58.

- Jammer, MM. (1974), *The Philosophy of Quantum Mechanics*, Wiley-Interscience.

- Javadi Amoli, A. (1997), *Raheeq Makhtoum*, first edition, Qom: Israa.

- Juma't al-Arosi al-Hawzi, A. (1991), *Tafsir Noor al-Saqlain*, Qom: Dar al-Kitab al-Alamiya Ismailian.

- Mulla Sadra, (2008), *Al-Asfar al-Araba,* Beirut, Daro Ehya al-Trath al-Arabi.

- Mulla Sadra, (1988), *Description of Usul Kafi,* corrected by Mohammad Khajawi, first edition, Tehran: Institute of Cultural Studies and Research.

- Mulla Sadra (2014), *Mafatih al-Ghaib*, translated to Persian by Mohammad Khajawi, first edition, Tehran: Moli Publications.

- Penrose, R. (1989), *Shadows of the Mind:* A Search for the Missing Science of Consciousness, Oxford University Press.

- Schrodinger, E. (1983), *The Present Situation in Quantum Mechanics*, trans. John. D. Trimmer, Quantum Theory and Measurement, J. A, Wheeler and W. H. Zurek (eds), New Jersy: Princeton University.

- Stapp, H. (2011), *Mindful Universe: Quantum Mechanics and the Participating Observer,* 2nd Ed, Springer.

- Targ, R. and Puthoff, H. (1975) "Information transfer under conditions of sensory shielding, *Nature,* 251, 602-607.

- The Holy Quran (1999), calligraphy by Othman Taha, Paya Printing House, Tehran.

- Wheeler, J. (1982), *Bohr, Einstein, and the Strange Lesson of the Quantum*, Mind and Nature, Richard Elvee (ed), San Francisco, Harper & Row.