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Descriptive Analytical Investigation of the Phenomenon of the Psyche from the View of Origin, Roots and Essence

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ABSTRACT

Objective: Lacking a thorough comprehension of the psychological phenomenon, professionals engage in psychotherapy. Throughout history, humanity has been exploring the essential question: What are the origins, roots, and essence of the psychological phenomenon? The primary goal of this study is to elucidate these enigmas. Despite notable progress in the realm of psychology, the psychological phenomenon remains a paramount unanswered query, still enigmatic.

Methods: The research methodology utilized Grounded Theory for fundamental concept formation and content analysis. Within the "understanding-based content analysis" approach, 32 analytical units within the content units (texts and well-documented sources in the theoretical foundations of the research) linked to the psychological phenomenon were scrutinized across 14 eras (Era1 to Era14).

Results: The results indicate that psychology emerges as an unparalleled consequence of the creative progression of life in organisms, particularly evolving from two nested evolutionary shifts. Initially in all primates, a type of consciousness, specifically heightened momentary awareness, developed as a means of communication. This mechanism, involving the prefrontal cortex and long-range circuits, facilitates the transmission of neural information throughout the brain in ascending and descending (feedback) patterns. Subsequently, this communicative capacity was exclusive to the reflective Homo sapiens, along with a secondary genetic alteration around the conclusion of the previous Ice Age (between 40,000 to 100,000 years ago). This was notably enabled by a mutation in the FOXP2 gene, fostering functional coordination among the lungs, larynx, throat, tongue, and other components.

Conclusions: The outcomes aid in broadening the understanding of the nature of the psychological phenomenon.

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Introduction

A Comprehensive Descriptive and Analytical Study on the Phenomenon of Consciousness: Tracing its Origins, Foundations, and Essence (Pre and Post the Neuroscientific Renaissance)

Owing to the intricate nature and intangible aspects of consciousness that render it elusive for empirical and experimental probing, it has, since antiquity, been the focus of diverse viewpoints, perspectives, and terminologies within the various conceptual frameworks spanning different epochs. Progressing with time, and shaped by the cultural metamorphosis and the advent of multifaceted paradigms, this cognitive matrix has undergone a transformation — transitioning from mystical intuitions and interpretations to mythological narratives, transcendent contemplations, onto philosophical deliberations, further evolving into the realms of theo-philosophical discourses, and ultimately gravitating towards a scientific paradigm, all in a bid to demystify and encapsulate the enigma of consciousness.

Each of these registered and articulated units of the psychological phenomenon has been a focal point in its era. The very term "psyche" in ancient Greece, during the mythological period, was presented as a beautiful and undeniable goddess whom Eros, the god of love and desire in Greek mythology, fell in love with. The word " Psychè " (meaning "flowing") itself implies dynamism and vitality.

Amidst these considerations, certain synonymous interpretations of "psyche" have been more prominently scrutinized across varied eras, encompassing: psychography from a mystical stance, the soul from a transcendental perspective, the mind through a philosophical lens, consciousness from a philosophical-scientific vantage, and memory viewed scientifically, among others.

Illustratively, within the neuroscientific paradigm, an elucidative exposition integrating electroencephalogram (EEG) patterns with the psychoanalytic models proposed by Sigmund Freud and Carl Gustav Jung emerges:

"An intricate theoretical delineation grounded in the electroencephalogram (EEG) serves as a conduit, bridging the psychoanalytic frameworks of Sigmund Freud and Carl Gustav Jung with electroencephalographic manifestations, neural structural intricacies, and neurodevelopmental discoveries. Fundamentally, the EEG spectrum encapsulates diverse conscious realms, extending from profound unconscious depths (represented by delta waves), traversing personal unconscious

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realms (theta waves), states of immersive flow, altered trance, and contemplative meditation (alpha/theta waves), culminating in ego-conscious states (beta waves). Within this psychoanalytic paradigm, the psyche is structured upon these very elements in a congruent sequence: the collective unconscious, the individual's unconscious, the pinnacle of unconscious awareness, transitioning to consciousness. When harmoniously integrated, these realms culminate into the quintessential Self, signifying the fully actualized individual. This exposition elucidates the symbiotic interplay between the brain and psyche, articulated through a psycho-navigational methodology" (Thompson, 2023, p. 161).

Furthermore, due to these synonymous and complementary terms, each from its perspective, terms like mind, consciousness, and memory have become subjects of research and examination in various scientific fields, including psychology.

To enhance clarity in the theoretical foundations of this research, a descriptive-analytical investigation of psychological phenomena from the perspective of their origins, roots, and nature is undertaken. This examination includes summarizing the views of prominent thinkers during two distinct periods:

A: From ancient times to 1990 AD (Before the Renaissance of Neurosciences).

B: From 1990 AD to the present era (After the Renaissance of Neurosciences).

Theoretical Foundations of Research:

Historically, up to the mid-20th century, inquiries into the origins, underpinnings, and essence of psychological phenomena predominantly originated from philosophical or philo-scientific endeavors. Notwithstanding, luminaries like Ramón y Cajal, renowned for discovering neurons, and Donald Olding Hebb, who introduced the concept of neural circuits, have drawn intrinsic connections between cerebral functionalities and corresponding psychological constructs, such as memory and consciousness. Yet, pivotal research contributions from intellects like Crick and Koch, particularly their doctrine of neural ensemble correlations, and the portrayal of active neural correlations as they pertain to memory, cognition, and psychological processes, heralded a renaissance in modern neuroscientific thought. In their epistemological construct, we are essentially the manifestations of cerebral neuronal outputs. This characteristic processing, according to their school of thought, is a uniquely human attribute, but its echoes reverberate across the entirety of living systems globally. To elucidate, "The neural coalitions that shape our very

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essence are inherently dynamic, undergoing perpetual evolution. The brain crafts fleeting, restless visualizations at such an unparalleled velocity that our perception aligns with a ceaseless continuum of cognizance" (Cavanna & Nani, 2014, p. 128).

For example: "The hippocampus serves as a foundation for organized representations. Studies indicate that the formation of holistic memory representations is a function of the hippocampus and its initial inputs. These all indicate that information processing by the brain serves various spatial and episodic domains" (Poepple, Mangun & Gazzaniga, 2020, p. 217).

However, attempts to provide a reductionist physicalist model of mental processes initially focused on aspects related to sensations and perceptions, such as interactive connections (especially the LGB thalamus nucleus), awareness, and short-term memory in active and correlated neural circuits. These aspects, when considering higher-level organizational units like memory, consciousness, vigilance, semi-consciousness, unconsciousness, individual Freudian unconscious, and Jungian collective unconscious, tend to present significant theoretical challenges within a physicalist (eliminativist or reductionist) framework. Nevertheless, "Today, most philosophers studying the mind have accepted that consciousness derives from the material brain, but unlike Crick, some doubt that it can be fundamentally reduced to brain function. Philosophers such as John Searle and Thomas Nagel also take middle positions. They believe that consciousness (the mind and other synonyms) is a unique and distinct entity in the biological cognitive processes of the brain. These unique processes are accessible for analysis, but we have made little progress in understanding them because they are very complicated, which means that consciousness is much more complex than the brain features that we can understand" (Kendall, 2021, pp. 411-412).

As entropy is an inherent and inevitable fate of any system, awareness, in the course of evolution, has developed to allow living systems to cope maximally with the inevitable entropy of their systems. Thus, the necessity of anti-entropy awareness versus entropy awareness in the dialectical process of life is emphasized.

Antonio Damasio, born in Lisbon, Portugal, in 1944, is one of the leading neuroscientists and thinkers in consciousness research. What distinguishes Damasio's neuro studies is his focus on the complex interaction between the organism and the environment. This involves the intricate and

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reciprocal interaction of the body, mind, and environment, leading to the representation of the world in dynamically encoded maps in the brain.

According to Damasio, consciousness in humans is not unified and has two types: Core Consciousness and Extended Consciousness.

The simplest form of consciousness, which I refer to as Core Consciousness, provides an immediate and present moment feeling to the being, regarding an instantaneous and here (in this place) sensation. For the complex type of consciousness, which I term Extended Consciousness, there exist numerous levels and degrees. This consciousness constructs an elaborate sense of self, i.e., identity and individuality (self) over time. In summary, Core Consciousness is a simple biological phenomenon, comprising only one level of organization. It remains constant and enduring throughout an organism's life, is not exclusive to humans, and is independent of regular memory, working memory, reasoning, and language. In contrast, Extended Consciousness is a highly complex biological phenomenon with multiple levels of organization, evolving throughout an organism's lifetime" (Damasio, 2020, pp. 98-99).

This categorization of levels of consciousness has implications for psychological pathology and psychotherapy because it demonstrates the relationship between disassociative disorders (such as personality disorders, depersonalization, and dissociative identity) and disturbances in Extended Self (self-narrative) or Extended Consciousness (narrative awareness).

Regarding the distinction between consciousness and its synonyms and homonyms as more covert analytical units in the units of text: "It is now evident that throughout history, in human culture, instead of the term 'consciousness,' words such as spirit, conscience, wisdom, nous, soul, mind, and psyche have been used" (Damasio, 2020, p. 340).

Mental and psychological images that manifest in our mind and psyche are not exact copies of the original object or phenomenon. This is because mental and psychological images are products influenced by our brain's perception of internal bodily sensations, external sensory experiences, or imaginative constructs independent of these factors. In other words, our mental and psychological images, our perceptions, are not identical replications of the object or phenomenon in question; rather, they are neural patterns arising from the interactions (actions and reactions) between the reflection and representation of the object within our nervous system (the physical features of the

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object) and our response styles that, based on all these mental and psychological images, reconstruct our internal perceptions.

These mental and psychological images, which are products of neural activities responding to various physical, biological, social, environmental, and temporal contexts, converge as mirror-like, reflection, and representation structures of mental and psychological images within the labyrinthine matrix of the mind. To elucidate the nature of this emergence and representation, it necessitates convergence between various contemporary disciplines such as quantum physics (entanglement, quantum superposition, quantum fields), neuro biochemistry of the brain, neurophysiology, neuroscience, cellular and molecular biology, and more, in conjunction with the application of modern technologies like functional Magnetic Resonance Imaging (fMRI).

Recent breakthroughs in neuroscience owe much to advancements in brain imaging modalities. To address questions like: 'How are emotions generated?' or 'How can one correlate the internal psychological world to patterns of activity in the Central Nervous System (CNS)?', historically, our insights have been principally facilitated by brain imaging. Techniques such as CT-SCAN, PET, MRI, and, notably, Functional Magnetic Resonance Imaging (fMRI) have paved the way" (Zeise, 2021, p. 293).

In the evolving paradigm of neuroscience's renaissance, a foundational, transformative bridge has been established between neurobiology, neurology, neuroanatomy, and psychology. Through this transition, psychological topics, as opposed to their predominantly descriptive nature in pre-renaissance times rooted in various theoretical schools, are now dissected in the light of empirical data drawn from neurological studies. To illustrate:

"The enigma of creativity—its genesis and potential locus in the brain—has become a focal point of modern neuroscience, employing tools such as functional Magnetic Resonance Imaging (fMRI) for insight. Not too distantly in the past, scientists could only postulate on brain functions implicated in artistic and creative endeavors. With the advent of contemporary technologies, it's now discerned that processes like metaphorical thinking, visualization, imagination, and conceptualization—cornerstones of inventive cognition—are predominantly associated with the brain's right hemisphere. Conversely, the comprehension of musical artistry, proficiency, and

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expertise necessitates the integrated functionality of both cerebral hemispheres" (Demarin, 2020, p. 13).

In all the different hierarchical levels of life, from single-celled organisms to plants and higher animals, processes of sensing, awareness, and consciousness are observable. So much so that:

It's acknowledged that within the realm of sensing, components like detection and response transcend mere sensory perception. When confronted with perceived stimuli, an alert organism consciously reacts, thereby ushering in the possibility of deliberate actions through its heightened state of consciousness and awareness. The intriguing query here revolves around the neurobiological facet: despite plants being devoid of neural configurations, they exhibit action potentials reminiscent of animals. They also harbor mechanisms akin to depolarization and hyperpolarization, resting potentials, and even propagation, though manifested differently. Intriguingly, molecular constituents exploited by the animal nervous framework are discernible within plants, encapsulating compounds like acetylcholine, dopamine, histamine, norepinephrine, serotonin, and GABA. Notwithstanding the absence of a structured nervous system in plants, complete with its central and peripheral elements, neurons, circuits, synapses, and nuclei, this disparity doesn't necessarily negate the possibility of a distinct mode of sensation, alertness, or even consciousness at the botanical level" (Damasio & Damasio, 2023, p. 2).

Additionally, in the light of the scientific paradigm of the era of neuroscience:

"It has been clarified that our body and central nervous system are part of the physical world, composed of the same elements as other things, and, according to recent interpretations, are entirely describable in terms of secondary qualities—more complex but still mathematical and spatiotemporal. Molecular biology consistently augments our comprehension of life's structure, functionality, and physical evolution. From what I discern, our psychological landscape, inclusive of our cognitive experiences and the intricate lives of fellow humans, is intrinsically tied to the physical occurrences within our brains. Furthermore, this bond strengthens given the reciprocal influence between our physiological being and the broader physical universe, signifying a profound brain-body-environment interplay" (Nigel, 2013, p. 58).

Present-day investigations, anchored in neuroscience insights, have to a certain degree elucidated that consciousness correlates with the operations spanning diverse brain domains. Such that:

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"The body of evidence indicates a relationship between consciousness and the concurrent activities within the cortical and thalamic zones. This interplay entails both intra-cortical interactions and engagements with subcortical entities. From a speculative standpoint, the inception of primal consciousness likely transpired when the thalamo cortical system underwent substantial enlargement, coupled with a surge in specialized thalamic nuclei, leading to the expansive evolution of the cerebral cortex" (Edelman, 2015, p. 81).

Today, through research resulting from the knowledge of neuroscience, it has been somewhat established that consciousness is associated with the activities of various brain regions. In such a way that: "Evidence suggests that consciousness is associated with the activity of the cortical and thalamic regions, and the interaction between the cortex and itself, as well as with subcortical structures. Therefore, primary consciousness evolved, in which the thalamo cortical system expanded considerably, the number of dedicated thalamic nuclei increased, and the brain cortex expanded" (Edelman, 2015, p. 81).

Consciousness, awareness, psyche, and similar concepts belong to the qualitative domain of information. Existence comprises matter, energy, and information. Matter, energy, fields, etc., have quantitative aspects, while information is qualitative. In this complete unity of the universe, mathematical and physical laws govern with extraordinary precision.

In the anthropomorphic model of the universe, throughout the history of philosophy and science, many philosophers and scientists, whether empirically or logically, believed that consciousness is a fundamental aspect of existence. Figures like Spinoza (1677), William James, Whitehead, and Henri Bergson have held this view.

Franco Vazza, an Italian astrophysicist at the University of Bologna, and Alberto Feletti, a brain and nervous system surgeon at the University of Verona, conducted a comparison between the neuronal networks of the human brain and the networks of galaxies in an article published in the Frontier Physics journal in 2020. They highlighted striking similarities between these two systems. "We applied homogeneous statistical approaches and sections of the simulated dark and ordinary matter distribution in the cosmic network, spectral analysis, as well as network parameters from graph theory to compare both networks (neuronal brain network and cosmic network). Our findings suggest that, despite dramatic inequalities in spatial scales (10^{27}) between these two

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systems, about the 3D distribution of dendrites and synapses, the total memory capacity of the human brain's network averages around 7.4 bits of information per neuronal cell and around $2*10^{16}$ bits, approximately 2.5 petabytes, for the entire network of the brain. Conversely, for the cosmic network, through statistical complexity calculation and simulated dynamic evolution, approximately $3.5*10^{16}$ bits, about 7.5 petabytes of memory capacity in the structure of the universe within the observable universe, was obtained" (Vazza & Feletti, 2020).

These remarkable findings demonstrate the interconnectedness of consciousness, information, and the universe on both micro and macro scales. Such striking resemblances lead to the identification of powerful algorithms in comparing these two magnificent structures" (Vazza & Feletti, 2020, pp. 6-7).

In the article by Vazza and Feletti, through a comparison of structural parameters, it has been demonstrated that degrees of compatibility and unexpected similarities exist between the connections of both networks (brain neurons and cosmic galaxies), by mathematical and physical principles. These findings are employed to support the analogy that the human brain, existence, and the cosmos share attributes of consciousness, awareness, and psyche.

The intricate tree of life, formed through interconnected and multifaceted relationships, especially within the brain-body-dependent structure of living organisms, serves as a manifesting canvas of the psyche.

Table 1. The structure of psyche formation is based on the theory of developmental levels:

Psyche
Mind
Awareness
Learning and Memory
Perceptions
Emotions
Organized Brain Regions for Specialized Functions
Neuronal Networks (Interconnected and Multifaceted)
Interconnected, Multilayered, and Multifaceted Neuronal Circuits
Neuronal Circuits
Synapses, Neurotransmitters, Ion Channels, and Excitable Membranes
Microtubules
Fractals
Dynamic Proteins (Frolic Effect)
Biological Molecules
Genes
Molecules
Atoms
Fundamental Particles (Quarks, Fermions, Leptons)
Quantum Vibrations

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In the grand schema of neuroscience, an intricate issue remains inadequately elucidated: how do psychic-mental images and neural schemes materialize from conglomerates of neuronal cells, circuits, and neural networks? Despite the advancements and comprehensive understanding rendered by disciplines like neurology, neuroanatomy, and neurophysiology concerning these emergent phenomena, an explicative void persists. This void lies between the granular quantum-atomic-molecular processes and the biochemical reactions, the neuronal cellular interactions and complex neuronal circuitry, and the resultant mental constructs and cognitive patterns that cultivate the psyche and cognition.

The research at hand embodies an interdisciplinary endeavor spanning several decades, striving to offer a descriptive-analytical portrayal of the psyche. It delves into understanding its genesis, foundational roots, and intrinsic nature, especially in the context of the pre and post-renaissance of neuroscience. How does the psyche, a profound phenomenon, manifest from intricate assemblies of neuronal cells and their networks? Even though substantial insights have been amassed from domains like neurology, neuroanatomy, and neurophysiology, a chasm remains. This rift distinguishes the micro-level quantum-atomic-molecular-biochemical interactions and the intricate neuronal circuitry of the brain from the macro-level cognitive patterns and mental representations that engender the emergence of the psyche and cognitive consciousness.

Materials and Methods

The research method employed in this study is mixed, combining two approaches: Grounded Theory (GT) and content analysis. These two approaches are further divided into two types of content analysis: Conventional Content Analysis and Categorical Content Analysis. In the process, 32 units of analysis were identified in the text units (documents and well-documented relevant documents in the theoretical foundations of the research), which were then examined and coded in 14 eras (Era1 to Era14). The extracted data were analyzed using SPSS 26 for frequency and synonym comparison, employing the chi-square test. To classify the 32 units of analysis, both Grounded Theory (GT) and Categorical Content Analysis methods were used, as they share certain similarities. Grounded Theory involves continuous data collection, data conceptualization, and data analysis through the following steps: Data -> Codes -> Concepts -> Categories -> Theory.

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Similarly, in content analysis: Definition and determination of variables -> Classification and coding -> Sampling from the document set (or population) -> Applying and counting the codes -> Data analysis.

Overall, both of these methods complement each other, with simultaneous data collection, continuous analysis, and logical connections between the data, resulting in a structured collection of data and inductive analysis. To achieve more scientific and practical results, the focus in the preparation and organization of Chapter Four of this research has been on the statistical analysis of content analysis.

To be more precise, the texts that have been presented regarding the subject of this research, both before and after the Renaissance of neuroscience, about the origins, roots, and essence of the psychological phenomenon, will be examined and presented. After a descriptive-analytical investigation, conclusions will be drawn regarding the cases that have been raised in conjunction with each other, whether in agreement or disagreement. In this research, the content analysis method has been employed as one of the descriptive-analytical methods to analyze the data (analysis units) collected from the text units (documented texts). The aim is to avoid any type of preconceptions and personal interventions and to present the psychological phenomenon as it is, just as it has been discussed in philosophical and scientific theories by theorists and proponents.

Content Analysis Stages:

1. Topic Determination:

The current research delves into a Descriptive-Analytical Study of the Psyche Phenomenon, investigating its roots, origins, and very nature, both pre and post the Neuroscience Renaissance.

2. Variable Definition and Clarification:

Variables in content analysis research typically fall under nominal or ordinal categories. In this particular study, 33 analytical units (or recording units) have been recognized, titled :

(1) Universal Animism, (2) Soul, (3) Breath of Life, (4) Vital Forces, (5) Mind, (6) Psyche, (7) Reasoning, (8) Feelings, (9) Sensing, (10) Recollection, (11) Consciousness, (12) Alertness, (13) Semi-aware state, (14) Non-aware state, (15) Self, (16) Identity, (17) Conscious self, (18) Semi-conscious self, (19) Non-conscious self, (20) Freud's Subconscious, (21) Jung's Collective Unconscious, (22) Freud's Principle of Emergence, (23) Neurons, (24) Neuronic Pathways, (25) Synaptic Connections, (26) Brain Territories, (27) Cerebral Cortex, (28) The limbic System

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(Hippocampus, Amygdala, Thalamus, and Hypothalamus), (29) Forebrain, (30) Anterior Forebrain, (31) Insular Cortex, (32) Central Nervous System, (33) Brain-Body-Humanity Nexus. From these 33 variables (analytical or recording units), an extensive comparison has been executed across 14 distinctive periods (from Era 1 through Era 14), juxtaposing the 'Psyche' with the other 32 analytical units in terms of frequency and synonymity. Detailed examinations of these instances are elaborately discussed in the fourth chapter of this research, applying the methodology of content analysis.

Main Research Question:

How is the phenomenon of Psyche viewed from the perspective of its origins, roots, and essence (before and after the Renaissance of Neuroscience)?

Specific Research Questions:

How is the phenomenon of Psyche viewed from the perspective of its origins (before and after the Renaissance of Neuroscience)?

How is the phenomenon of Psyche viewed from the perspective of its roots (before and after the Renaissance of Neuroscience)?

How is the phenomenon of Psyche viewed from the perspective of its essence (before and after the Renaissance of Neuroscience)?

Regarding the main research question and specific research questions, the variables of this research are presented in the table 2.

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Table 2. Research Variables

Variable	Categories (Unit of Analysis)	Unit of Analysis
Topic	Philosophical-Scientific Theories in Four Matrices of Thought (Magical-Mythical; Transcendental; Philosophical; Scientific) in Fourteen Eras (Era-1 to Era-14) (Before and After the Renaissance of Neuroscience)	Body Animism Soul Breath Faculties of Breath Mind Psyche Intellect Feeling Perception Memory Awareness Self Conscious Unconscious Conscious Mind Unconscious Mind Freudian Personal Unconscious Jungian Collective Unconscious Freudian Type of Emergence Neural Neuron Neuronal Circuits Synapses Brain and Brain Regions Cerebral Ventricles Cortex (Brain) The limbic system, Hippocampus, Amygdala, Thalamus, and Hypothalamus Frontal Lobe Prefrontal Lobe Insula Gland Autonomous and Extended Self (Autobiography) Brain-Centered Brain-Body Interaction Brain-Body-Mind Interaction
Format	Documented Texts (Scientific and Philosophical Works)	In the Likert Spectrum
Presentation and Citation Rate	In Scientific Theories, the Views of Scholars and Philosophers, Magical-Mythical-Transcendental Beliefs Before and After the Renaissance of Neuroscience	1.Not Presented and Cited 2.Presented and Cited 3.Minimally Presented and Cited 4.Moderately Presented and Cited 5.Highly Presented and Cited

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Subject to scrutiny and critical examination

Table 3. A chronological table (Era-1 until Era 14) in which registration units (mind, consciousness, awareness, etc.) are presented in credible and documented texts

Era	Period	Units of Content	Registration Units
Era 1: The era of magical, mythological, and fantastical beliefs.	Before the First Millennium AD: The period before the Iliad and the Odyssey of Homer.	All valid and documented texts by theorists before and after the Renaissance in the field of neuroscience, psychology (all orientations), cognitive psychology, cognitive neuroscience, neuroscience, and philosophical views of philosophers (before and after the Renaissance in neuroscience), as well as beliefs in magic, mythology, and escapism (before the Renaissance in neuroscience).	Body All living beings Soul Spirit Powers of the Spirit Mind Mental Intellect Feeling Perception Memory Awareness Ego Self Conscious Unconscious Subconscious The collective unconscious, Jungian Freudian unconscious mind Neuronal cell, Neuron Neuronal circuits Synapses Brain and brain regions Brain ventricles Cortex (Brain) Limbic system, Hippocampus, Amygdala, Thalamus, and Hypothalamus Frontal lobe Prefrontal lobe Insular gland Autobiographical and self-expansive Brain-centric Brain-body interaction Brain-body-consciousness interaction
Era 2: The era of magical, mythological, and fantastical beliefs, along with philosophical thought.	First Millennium BC: The period after the Iliad and the Odyssey of Homer. (Pre-Socratic Philosophers)		
Era 3: The era of magical, mythological, and fantastical beliefs, as well as philosophical thought.	The era of Socrates, Plato, Aristotle, and post-Socratic philosophers until the end of the First Millennium AD.		
Era 4: The era of the maturity and formation of fantastical beliefs, along with theological philosophy (Scholastic philosophers).	First Millennium AD: Ancient Rome. Saint Augustine, Thomas Aquinas. Saint Anselm (Ontological and Christian metaphysics). The beginning of Islam and the development of Islamic philosophy and wisdom. (A synthesis of Greek, Roman, and ancient Iranian philosophy with Islamic texts).		
Era 5: The era of fantastical beliefs and theological philosophy (Scholastic philosophers).	The peak of Iranian-Islamic and Islamic philosophy and wisdom, especially from the 9th to the 14th centuries AD.		
Era 6: The era of Bacon and the emergence, growth, and expansion of the Renaissance.	Renaissance: The 14th and 15th centuries AD.		
Era 7: The era of Descartes: the duality of mind and body.	The Age of Enlightenment and Reason: 16th, 17th, and 18th centuries AD.		
Era 8: The era of the founders of scientific psychological thought.	The 19th century. The era of William James, Freud, and other pioneers of scientific psychology. The era of Ramón y Cajal (neuron discovery).		
Era 9: The era of psychoanalysis, behaviorism, the rise of experimental research, neuropsychology, and the discovery of neurons.	The first half of the 20th century: Psychoanalysis (Freud, Jung, etc.); Behaviorism (Pavlov, Watson, Skinner, Thorndike); Emergence of		

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	experimental research in neurophysiology (neurology, neuroanatomy, and neurophysiology) (Ramón y Cajal, Lashley, etc.); Discovery of the neuron (basic unit of the brain and nervous system).		
Era 10: The era of the third force in psychology (cognitive psychology) and the period of fundamental research on memory, laid the groundwork for the introduction of Renaissance neuroscience.	The late 20th century, the decades of the 1960s, 70s, and 80s: A period of fundamental research on memory.		
Era 11: The era of the emergence of the Renaissance of neuroscience (post-Renaissance neuroscience).	The last decade of the 20th century, the 1990s: The era of the brain.		
Era 12: The era of the brilliant rise of Renaissance neuroscience.	The first decade of the 21st century: The period of maturation and growth of neuroscience.		
Era 13: The era of the expansion of explanations in various fields of psychology by neuroscience.	The second decade of the 21st century: Rapid growth in the neurosciences.		
Era 14: The present era of the expansion and dominance of Renaissance neuroscience in the innovation of related areas.	Present Era: The period of maturity in the field of neuroscience (neuroscience).		

Results

In table 4 the types of Analytical Units (Registration Units and Content Units) Based on Referenced Material in Theoretical Foundations of Research: From the Millennium BC (Before Homer's Iliad and Odyssey), (Before the Renaissance of Neuroscience) to the Present Age (After the Renaissance of Neuroscience) - (Over Time, Registration and Content Units Gradually Provided) is presented.

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Table 4. The Origin, Roots, and Nature of the Psyche Phenomenon (Before and After the Renaissance of Neuroscience) (With time, the registration units that have been gradually provided):

Time Variable Classification	Coding	Variables (Registration Units and Values)	1.Not provided	2.Much less provided	3.Less provided	4.Average provided	5.More provided
Eras: From the 2nd millennium BC (Before Homer's Iliad and Odyssey) to the present, the 3rd millennium (After the Renaissance of Neuroscience), is about the origin, roots, and nature of the phenomenon of the psyche. (As time has passed, the registration units have been progressively introduced.)	1	Body					*
	2	Animism		*			
	3	Spirit			*		
	4	Soul			*		
	5	Powers of the Soul		*			
	6	Mind				*	
	7	Psyche					*
	8	Wisdom			*		
	9	Sensation					*
	10	Perception					*
	11	Memory					*
	12	Awareness				*	
	13	Consciousness			*		
	14	Semi-Consciousness			*		
	15	Unconsciousness			*		
	16	Ego			*	*	
	17	Self			*		
	18	Conscious Mind			*		
	19	Semi-Conscious			*		
	20	Unconscious			*		
	21	Individual Unconscious Mind (Freudian)			*		
	22	Collective Unconscious Mind (Jungian)			*		
	23	The Principle of the Emergence of a Type (Freudian)		*			
	24	Neuron (Cajal, etc.)					*
	25	Neuronal Circuits (Hebb, etc.)					*
	26	Synapses (Lashley, etc.)					*
	27	Brain Areas (Penfield, etc.)					*
	28	Ventricles of the Brain		*			
	29	Cortex (Pavlov, etc.)					*
	30	Limbic System (Hippocampus, Amygdala, Thalamus, and Hypothalamus)					*
	31	Frontal Lobe (Planning and Foresight)					*
	32	Prefrontal Lobe (High Processes of the Human Psyche)					*

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	33	Socket of Frontal Lobe (Superlative Processes of the Human Psyche)					*
	34	Insula (An Important Center for Self-Awareness)					*
	35	Core-Self and Self-Extended (Autobiography)				*	
	36	Brain-Centered				*	
	37	Brain-Body (Body-Brain-Psyche Interaction)				*	
	38	Brain-Body-Being (Brain-Body-Being Interactions)				*	

The Origin, Roots, and Nature of the Psyche Phenomenon (Before and After the Renaissance of Neuroscience).

Eras

From the millennium BC (before Homer's Iliad and Odyssey) to the present age, the third millennium (after the Renaissance of Neuroscience), is about the origin, roots, and nature of the psyche phenomenon.

Calculation and Interpretation of Chi-Square for Comparing the Frequency and Synonymy of the Term "Psyche" with Analytical Units (Registration) and Mind Units, Using Synonymous Units from Texts in Theoretical Foundations:

Out of 31 Chi-Square tests comparing the frequency and synonymy of the term "Psyche" with 32 analytical units in four comparisons with Mind units in the table; Freudian Unconscious Mind in the table, Jungian Collective Unconscious Mind, and Brain Ventricles in the table, in comparison with the frequency and synonymy of the psychological analysis unit, did not show a significant difference, considering the units of text in theoretical foundations of research. However, in the remaining 28 cases of analytical units, a significant difference in meaning was demonstrated between the concept of "Psyche" and the other cases in the units of text. In Table 5, the calculation of Chi-Square between Psyche and Mind analytical units in periods Era1 to Era14 is presented:

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Table 5. Chi-Square between Psyche and Mind analytical units in periods Era1 to Era14

Tests	Value	DF	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.333[a]	9	.044
Likelihood Ratio	15.419	9	.080
N of Valid Cases	14		

In the table 5 comparing the frequency and synonymy (Chi-square) of Psyche and Mind, the ratio between the two is (sig=.080) and (p-value=15.419). Because (sig>0.05), there is no significant difference in meaning between Psyche and Mind in the texts of registration units (theoretical foundations) in content analysis.

Table 6. Calculation of Chi-square between Psyche and Personal Unconscious Mind Freudian in periods Era1 to Era14

Tests	Value	DF	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.000[a]	12	.301
Likelihood Ratio	19.408	12	.079
N of Valid Cases	14		

In the table 6, comparing the frequency and synonymity (Chi-square) of Psyche with the Unconscious Mind Freudian, the ratio between these two variables is (sig=0.079) and (P-value=19.408). Since (sig>0.05), it indicates that there is no significant difference in meaning between the Psyche and the Unconscious Mind in the texts of registration units (theoretical foundations) when analyzing content.

Table 7. Calculation of Chi-square between Psyche and the Collective Unconscious Mind Jungian in periods Era1 to Era14

Tests	Value	DF	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.000[a]	12	.301
Likelihood Ratio	19.408	12	.079
N of Valid Cases	14		

In the table 7 comparing the frequency and synonymity using Chi-square analysis, Psyche with the Jungian Collective Unconscious Mind, the ratio between these two variables is (sig=0.079) and (P-value=19.408). Since (sig>0.05), it indicates that there is no significant difference in meaning

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between the Psyche and the Collective Unconscious Mind in the texts of registration units (theoretical foundations) when analyzing content.

Table 8. Calculation of Chi-square between Psyche and Brain Ventricles in periods Era1 to Era14

Tests	Value	DF	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.400[a]	12	.174
Likelihood Ratio	13.921	12	.306
N of Valid Cases	14		

In the table 8 comparing the frequency and synonymy (Chi-square) of "Psyche" with the unit of analysis "Brain-Brain Regions," the ratio between them is (sig=.306) and (P-value=13.921). Since (sig>0.05), it means that there is no significant difference in meaning between "Psyche" and "Brain-Brain Regions" in the texts of a unit of analysis (theoretical foundations). The reason for this lack of significance is that in certain periods of the history of psychology (Era=1 to Era=14), many philosophers and thinkers in this field considered brain regions as the locus of the psyche.

Based on the data and findings obtained from the content analysis of 31 registration units in tables, utilizing texts from unit contents (theoretical foundations), four units of analysis, including "Mind" in Table 5, "Unconscious Mind Freudian" in Table 6, "Jungian Collective Unconscious Mind" in Table 7, and "Brain Ventricles" in Table 8, did not show a significant difference in meaning compared to the frequency and synonymy of the unit of analysis "Psyche." However, the remaining 27 cases showed a significant difference in meaning between "Psyche" and the other units in the texts of unit contents (theoretical foundations) in content analysis.

Discussion

The paramount distinction between consciousness-psyche-mind and the brain is that while the brain constitutes a foundational physical system (that is, something distinct), consciousness-psyche-mind originates from the intricate interplay of neural circuit activities and synaptic connections. Neurons, the structural units of the brain, not only respond to excitatory and inhibitory stimuli but also exhibit a characteristic self-regulation or inherent activity, commonly referred to in neurobiology as the reflex arc. Emanating from the aggregated attributes of these interconnected neuronal assemblies, we discern active, dynamic, and inventive qualities such as emotion,

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perception, memory, awareness, cognition, and psyche. Thus, endowed with its neuronal architecture, the brain isn't merely a reactive entity; it perpetually engenders innovative and stochastic patterns of its own volition.

This inherent excitability in neurons is an intrinsic physical trait of these nerve cells. Continuous undulations in the neurons' membrane potential, due to variations in neurotransmitter release (neural messengers) at the synaptic junctions or the thermal noises from molecular motions, consistently toggle the neuronal membrane from a resting potential state to an activated one. Every such localized disturbance within a neuron culminates in the activation and synchrony of vast neural networks and innumerable synaptic connections, crafting the very thoughts, objectives, and consciousness continuum that incessantly flow through our memory, awareness, mind, and psyche. Our psyche system serves as an evolutionary and developmental product, both individual and collective, towards the preservation of living entities (individuals) and societies (collective). The psyche, as a repository (I) of memories, past learnings, and teachings, preserves them, allowing us to use them in managing the challenges and issues of our present time and plan for our future.

With the help of our psyche, we recognize the nature of others as self-extensive. This psyche manifests within the complex neural circuits of about ten to one hundred billion nerve cells (neurons).

Various theories throughout the history of science and philosophy have been proposed regarding the mind-body duality, but the approach that is currently more clinically relevant in the era of neuroscience is the unity, or more precisely, the psychosomatic unity of mind (psyche)-body. It is believed that:

"Through a historical recontextualization, the relationship between the mind (psyche)-body has undergone long-term relationships through various cultural approaches in different eras, including esoteric, philosophical, and medical ones, depending on the prevalence of cultural orientations. Nevertheless, both models, the mind-body duality and the psychosomatic unity, have been clinically relevant to date. However, in the era of neuroscience, to overcome the therapeutic failures of somatic and psychic diseases, the consideration of all biological, psychological, and social aspects of these diseases as a common pathogenic factor seems to be the most appropriate

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recommendation, and the approach of the psychosomatic unity of mind (psyche)-body is advocated" (Torta, Botto, Giorgi & Puttini, 2023, P. 1342).

A common problem in the Renaissance neuroscience paradigm is the lack of a unified comprehensive theory.

"The problem we face with formulating new models is related to the qualitative differences between cognitive and emotional states. It seems that thoughts are mentally neutral and lend themselves well to symbolic representation and computation. Although our emotions are quite different from those of animals, it seems that feelings of anger and distress are far from conscious thought, and in terms of quality, they have a long way to go (in terms of quality). That is, emotions have not been well expressed in mental methods, such as statements, images, comparisons, etc. This challenge poses the construction of a model" (Friedenberg & Silverman, 2006, P. 552).

For example, it should be noted that fear is an adaptive emotional response that keeps us away from dangerous situations. Emotions such as fear, although they interact and influence each other, are different. However, a unified model or comprehensive theory for explaining all of this does not exist within the Renaissance neuroscience paradigm. In this regard, the model presented in this study, "The Theory of Creative and Transcendent Hierarchical Levels of the Psyche," has been proposed to address this research gap.

Conclusion and Presentation of the Theoretical Model: (The Theory of Organizational-Level Reflection - The Creative and Transcendental Emergence of the Interacting Psyche from Brain-Body-Existence) by Seyyed Valilou:

The Theory of Organizational-Level Reflection - Creative and Transcendental Psyche

According to this theory, the psyche, reflecting organizational levels, emerges from complex combinations and processes: neuronal (quantum vibrations - string theory in quantum physics), protein oscillations (Frohlich effect), fractals, microtubules, synapses, neuronal circuits, neural network perceptron's, interacting with sensory inputs, as neural impulses and innate thought patterns, ultimately create a specific organizational level environment in the form of a mirror-like inner representation as the highest existential process. Internal mirror-like creative patterns, based on structure and changes arising from genetics, gender, changes from experiences, learning, and environmental effects on the entirety of the organism (body-brain-psyche) in an individual, manifest themselves. This is because the neural representation patterns in each person are associated with interactions based on the specific rules of their brain, constructed, processed, and ultimately reflected.

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In the context of explaining the origin, roots, and nature of the psychological phenomenon, it can be asserted as follows: Reflective creative representation manifests within the interconnected neural circuits of the brain. This manifestation is influenced by the coalition of neural complexes, especially those under the control of certain brain regions, such as the prefrontal cortex for planning, and the limbic system, including the amygdala, for emotional sensing and processing of emotional, and mental states, and conscious, semi-conscious, and unconscious patterns. These regions play a role in the internal reflective creative representation.

Each of our sensory inputs (namely, vision, hearing, taste, smell, and tactile perception) are routed through interwoven neural pathways within their respective cerebral zones (e.g., visual stimuli mainly navigate the occipital region, whereas auditory stimuli predominantly engage the left hemisphere, specifically in linguistic zones like Broca's, Wernicke's, and other related areas). These sensory signals undergo processing, representation, and subsequent storage within these dedicated cerebral domains.

Moreover, data stemming from these intricate neural networks within the brain are orchestrated by particular regions, such as the anterior frontal lobe, prefrontal gyrus, and insular layer, among others. They're subsequently managed and emotionally charged by systems, notably the limbic framework, culminating in the emergence of diverse emotional states like elation, melancholy, lament, despondency, hopefulness, cynicism, jealousy, and several others.

During these recursive cycles of interconnected neural activity, information is creatively processed, resulting in the formation of an inner conscious world in the neural web of the brain. This inner world includes states of awareness, mental imagery, and psychological states.

Although these interconnected neural complexes serve as storage units for information and sensory inputs, specific brain regions like the frontal lobe, prefrontal cortex, and insular cortex play a crucial role in governing various higher cognitive functions and evolved in humans, particularly Homo sapiens sapiens. These regions are involved in activities such as self-awareness and executive functions.

It is noteworthy that even though diverse information is encoded in different interconnected neural complexes, only one coherent representation of reality (an event from the world) is centered in the focus of the brain's attention at any given moment. This feature allows different thoughts in the

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brain to be stored without interference in different interconnected neural complexes and be recalled when needed by structures such as the prefrontal cortex, anterior cingulate cortex, and insular cortex, facilitating self-awareness, and more.

Amid these connections and recursive neural circuit cycles, information is creatively processed, leading to the emergence of conscious encounters with the world internally. In this process, structures related to the emergence of emotional components (such as the limbic system, especially the amygdala) play a role in imparting emotional significance (qualia) during the process of representing information from interconnected neural complexes and managing it in more evolved brain regions specialized for human thought.

These structures did not come into existence all at once but gradually evolved during the formation of the nervous system to ensure the survival of living beings in response to internal (physiological) and external (environmental) changes. These concepts fall under the purview of evolutionary neurobiology and evolutionary psychology.

Amid these processes, the brain is not merely a passive reflector and mirror of external realities, events, and phenomena. Instead, the brain, through creative reflections, engages in the construction of neural patterns that correspond to rules of educational and training levels and, more importantly, constructs an active, creative, and pattern-based representation of the world. These representations, derived from external realities, are not mere physical reflections like light, sound, or smell but interconnected neural patterns with quantum foundations, protein vibrations (frolic effect), microtubules, fractals, synaptic facilitation, and neuronal circuits. These representations manifest as the highest process of consciousness, including memory, awareness, intelligence, and the philosophical mind, resulting from interactions with sensory inputs such as neural impulses and internal thought processes.

In summary, the Theory of Levels of Organized Psychology: Origin, Roots, and Nature of the Psychological Phenomenon can be summarized in the following table:

Theory of Reflective Levels: Creative and Transcendental Psychology – Seyyed Valilou

Table 5-1. Table of the Reflective Levels of Creative and Transcendent Psychological Formation – Seyyed Valilou

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13.The manifestation of the myriad and labyrinthine phenomenon of the psyche in the model of creative and transcendent internal reflective levels within the interactions of the brain, body, and existence.
12. The pinnacle of processes encapsulating transcendent memory, alertness, cognizance, the mental realm (philosophical construct), and the psyche (scientific and psychometric construct) is evidenced during the comprehensive cerebral interactions in a holistic paradigm, materializing as an inner innovative reflective paradigm.
11. Operations across the cortical, cortico-thalamic, thalamocortical, and cortico-subcortical strata, within brain-to-body and brain-body-to-environment dynamics, embody emotional, cognitive, and other representations at the planes of conscious realization, sub-conscious insight, and perceptual awareness.
10. Undertakings concerning cortical loop layers span the sextet layers I, II, III, IV, V, and VI within the domain of conscious recognition.
9.Activities in circuits and subcortical structures and organs in communication with each other at the unconscious level.
8.Complex neural networks emerge from a vast collection of interconnected neuronal circuits, forming the basis of brain nuclei.
7.Neuronal circuits that constitute active neuronal nuclei and the formation, storage, and learning of working, short-term, and long-term memories in them, and their representation through recalls (each neuronal pyramid as a gateway to the conscious psyche).
6.Synapses between pre- and post-synaptic neurons, where the foundations of memory are formed through facilitation mechanisms.
5.Neurons as structures that organize and coordinate lower-level elements within them and interact with each other in a harmonious, dynamic, and synchronous system through actions and reactions.
4.Microtubules and their interconnected networks in the structure of brain nerve cells and neurons.
3.Fractals, particles, and vital molecules that make up the nerve cells of the brain.
2.Protein vibrations (follicle effect) in the structure of nerve cells.
1.Quantum fields, fundamental particles, and quantum vibrations.

In fact, according to the theory of organizational levels and emergences of creative and transcendent psyche (Seyyed Valilou, 1402), it is proposed that the oscillations arising from the lowest quantum levels, during which oscillations occur at 10 to the power of minus 11 to 10 to the power of positive 11 times per second in a 10-dimensional space, give rise to various fundamental particles (such as strings >>> quarks >>> fundamental particles like electrons and leptons, and so on >>> atoms >>> molecules >>> and more). These oscillations also extend to the microtubule

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structures within nerve cells, as well as the vibrations and oscillations of vital proteins within them, all within the structure of neuronal cells and the layered neural circuits of the cortex and the limbic system. Collectively, they manifest various abstract and qualitative perceptual experiences, each of these modules at different organizational levels, representing specific functions through their interconnected oscillations and representations.

Psychological Phenomenon

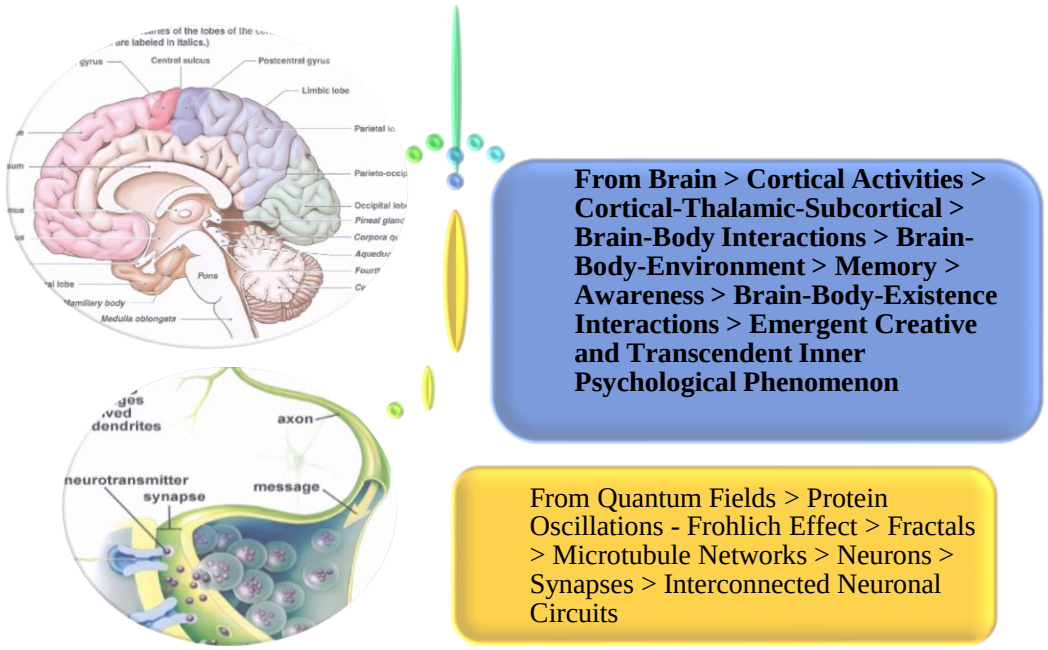


Figure 1. Theoretical Model: (Organizational Levels Emergent Creative and Transcendent Inner Psychological Phenomenon Theory - Seyyed Valilou)

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Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. The author contributed to the article and approved the submitted version.

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