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The Hydrozoic Theory

Wolfgang Lederer*

Department of Anesthesiology and Critical Care Medicine, Medical University of Innsbruck, Fritz-Pregl-Str. 3, 6020 Innsbruck, Austria

Abstract

The properties of water and the emergence of life are interconnected phenomena. According to the hydrozoic theory of conscious perception, primordial forms of memory and awareness emerged during the early stages of biophysical evolution. The theory is based on the idea that membranes composed of phospholipid bilayer membranes and adhesive water molecules exhibit liquid crystalline properties, combining directional dependence with the mobility of the fluid mosaic model. These magnetic fields have the capacity to store and quickly release energy within the liquid crystalline construct of cell membranes and adhesive water. Clearly, awareness preceded biological evolution of cellular life and significantly influenced the development of the animate nature.

Keywords: Awareness; Cell Membrane; Consciousness; Hydrozoic Theory; Magnetic Fields; Marine Hydrobiology; Memory; Perception; Self-Concept; Socio-Hydrology

Introduction

The human perspective exerts a pervasive influence on all human investigations. As posited by the prevailing notion of human sensory dominance, perceptual distinctions are frequently ascribed through the medium of visual judgement. The preponderance of findings is rooted in well-founded assumptions, theorems and axioms. The limits of our understanding, however, lie in our capability of imagination and verbalization. The process of differentiation has a tendency towards restricting an object to its distinguishing characteristics, whereas the act of comparison frequently serves to obscure these differences. The most significant error, however, is the dismissal of that which is not recognized as non-existent [1]. In the study of anatomical relationships in conventional microscopic preparations of cells and tissues essential fluid contents may remain obscured through fixation. This explains to some extent why the importance of the water-membrane unit of the interstitial space has been disregarded until recently.

The influence of imagination and interpretation on observations is profound. Phylogeny (the evolutionary history of an entire species according to the theory of descent), for example, was previously regarded as a condensed reiteration of ontogeny (the individual development of a single organism from egg cell to adult) [2]. Moreover, the discriminatory categorization system of phylogeny pretends to clearly distinguish between plants and animals. The distinction between single-celled plants (e.g. algae) and single-celled animals (e.g. amoeba) is determined by contrasting their modes of nutrition, cellular structure, and motility [2]. Photosynthesis, the process of converting sunlight energy into chemical energy through the action of chloroplasts, has been traditionally considered a characteristic feature of autotrophic plant life. In contrast, phagocytosis, the process in which cells engulf through their cell membrane, was regarded as being exclusive to heterotrophic animal cells. However, there are also hybrid forms of plant and animal e.g. members of the genus *euglena*, which possess both photosynthesis and phagocytosis. A similar confusion arises when consciousness is attributed to only one regnum, or perhaps only one species. It was none other than Charles Darwin who formulated a hypothesis positing that plant root tips function as the brains of primitive animals [3]. In the book which he had written together with his son Francis, the root apex, regarded as kind of a "root-brain" was hypothesized to regulate sensory perception, memory functions, and environmental responses. Darwin's hypothesis suggests that plant awareness transpired considerably prior to the evolution of the nervous system in animals. Since awareness is already found in the early development of single-celled organisms, basic membrane-bound awareness must have developed earlier in the pre-cell stages (Table 1). That is the core statement of the hydrozoic theory.

During early cellular development both regna established motility, but with the formation of a rigid cell wall this property underwent atrophy in plants during their development. Under conditions of constrained opportunities for defence and escape, a diversified sensory system evolved

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Correspondence:
Wolfgang Lederer, Department of Anesthesiology and Critical Care Medicine, Medical University of Innsbruck, Fritz-Pregl-Str. 3, 6020 Innsbruck, Austria, Tel: +43 4852 62366;
E-mail: wolfgang.lederer@i-med.ac.at

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and an extensive root network for collective perception. In contrast, the increasing motility in animals required a rapid processing system and eventually led to the development of the nervous system. This escalated the significance of cerebral processing and conscious perception. Assuming that plant development has deviated less from its original forms than animal development, basic awareness is more closely aligned with plant awareness than with animal awareness. Apparently, the shared environment is perceived and experienced very differently by animals and plants. Since only a limited number of consciousness functions are accessible to human observation there remains a significant reluctance to attribute varying degrees of conscious experience to animals and plants. This is particularly evident in neuroscience, which focuses on cerebrally processed consciousness and ignores the fact that there are non-neuronal structures of awareness that preceded the development of brain-bound consciousness. The human-centric view of consciousness tends to disregard that awareness in animals and plants is optimally adapted to their current needs. Animals and plants can think despite lack of conceptualization.

In the quantum theory of consciousness, it was hypothesized that neural microtubules enable quantum processes in the brain that give rise to consciousness [4]. This theory posits that, with each instance of a quantum wave function collapsing, a moment of conscious experience ensues. However, the emergence of consciousness could just as easily have followed rudimentary principles. According to the hydrozoic theory, basic awareness was generated by floating bio-membranes in the primeval sea [5]. From a socio-hydrological perspective, the pulsatile magnetic fields of the water-membrane unit correspond to the pulsating electrical activity of the brain, upon which conscious perception is built [6]. Ultimately, the sequence of cell-bound primary perception and receptor-bound sensory perception, culminated in the attainment of complex brain-bound conscious perception (Table 1). Thus, conscious experience in humans developed from basic awareness and is still influenced by bodily experience.

Methods

In this position paper, I present underlying hypotheses and postulates of the hydrozoic theory and contrast it with supporting and opposing arguments. The theory is simple and easy to understand. The facts are represented chronologically. The arguments against and in favour of this theory carry different weight. By referring to the research findings and positions of other scientists, my considerations are based on the current state of knowledge as far as available. Arguments were also developed through logical deductions and the combination of scientific and philosophical approaches. Wittgenstein postulated on this issue: "A hypothesis is a law for forming expectations" and elsewhere he wrote: "Only facets of the hypothesis are ever verified. That part of the hypothesis becomes a postulate" [7]. In the hydrozoic theory the central force underlying the genesis of awareness is electromagnetism (Figure 1).

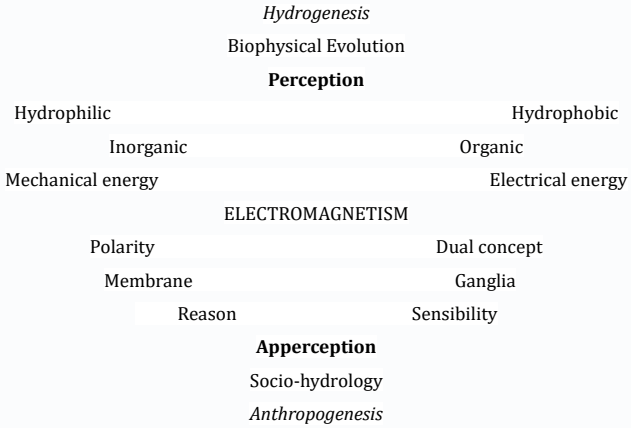

Figure 1: Fundamental events and principles in the development of membrane-bound basic awareness between the emergence of water (hydrogenesis) and the origin of mankind (anthropogenesis).

Fundamental events between hydrogenesis and anthropogenesis include the development of perception (superficial recognition based on contrasting stimuli from the physical environment) and apperception (abstract recognition based on current perception and assigned properties of previous experiences). Arguments for and against were supported by evidence such as research findings, empirical data, examples or logical conclusions, as available. However, evidence can take various forms. While a valid argument is proven, a plausible argument is just reasonable. Ideally, arguments should build upon one another in a logically consistent and coherent line of reasoning. Characteristics include consistency (coherence without internal contradictions), plausibility (subjective, qualitative judgment regarding believability and reasonableness) and probability (a measure of the quantitative likelihood of an event based on facts or evidence). The three properties are interconnected yet distinct concepts foundational to scientific reasoning and theory evaluation [8]. They indicate the relevance (a measure of the significance of an event based on expediency) and dictate how conclusions are drawn from incomplete information.

The hydrozoic theory

The hydrozoic theory [derived from *hydrozoikos* (ὑδροζωικός),

Table 1: Hypothetical steps in the transfer of energy to breed biophysical evolution on Earth, as well as the fundamental development from basic awareness to conscious perception according to the hydrozoic theory.

Science	Primary force	Secondary force	Effect	Property
Physical	Elemental force	Interaction	Gravitation	Baryogenesis
Physical	Thermodynamic	Enthalpy	Fusion	Nucleogenesis
Chemical	Activation energy	Reduction	Oxidation	Hydrogenesis
Chemical	External energy	Geothermic	Evolution	Abiogenesis
Biophysical	Mechanical	Electromagnetic	Membrane-bound	Basic awareness
Biochemical	Potential difference	Electrochemical	Cell-bound	Primary perception
Biological	Disintegrative	Bioelectrical	Receptor-bound	Sensory perception
Biological	Metabolic	Neurophysiological	Brain-bound	Conscious perception

a compound term referring to the dependency between water and life in natural philosophy] posits that water is a fundamental element for biochemical, biophysical and biological evolution. The hydrozoic theory is founded on the premise that the presence of water is indispensable for the progression of life in its various forms. This theory is rooted in the early philosophical inquiries of Thales of Miletus (ancient Greek philosopher, 624-547 BC), who postulated that water is the origin of everything [9]. From a scientific perspective the hydrozoic theory posits a synthesis of inanimate (water) and animate (bio-membrane) elements in the genesis of basic awareness. The inanimate share comprises the diverse and unique properties of water in the electromagnetic field. The animate share is constituted by the spontaneous formation of phospholipid membranes in the primordial soup. The fundamental principle underlying this phenomenon pertains to the sensitivity of liquid crystals to electromagnetic fields, which enables them to retain their polarization. This property, in turn, facilitates the storage and subsequent release of information. The basic concept of stimulus and memory arises from the rhythmic sequence of electromagnetic signals. Hypothetically, in the waves of the primordial sea basic awareness arises as kind of a mechano-electrical background noise from the regular generation of flexoelectricity in floating bio-membranes [6].

According to the hydrozoic theory, the water-membrane unit is also suitable for the directed propagation of electrical excitations. This is particularly important when several cells in a network are to be coordinated. It emphasizes the relevance of the interstitial space between the cells as an important independent unit for the transmission of information, that even can receive and transmit electromagnetic waves from the near environment as a three-dimensional grid, like an antenna. The carrier frequency for the information through electromagnetic waves is generated from the rhythmic sequence of electrical and magnetic fields. In vertebrates, the water-membrane unit serves the modulation of signals along the dendrites in the cortex of the brain [5]. The recorded electromagnetic activity of the cortex corresponds to the prevailing level of alertness.

The hydrozoic theory describes the possible origin and function of basic awareness and memory in all living organisms. On the one hand, it lends support to the hypothesis that basic awareness was already present prior to the development of cells. On the other hand, it serves to bolster the notion of a shared socio-hydrological evolution, one that is propelled by complex interactions between water and organic matter during biophysical, biochemical and biological evolution. In this perspective water is regarded as the indispensable element that facilitates a myriad of environmental and biological processes. This also aligns with a postulate from Leonardo da Vinci (Florentine scientist and artist, 1452-1519), that water is the driving force of all nature (https://www.oprah.com/quote/leonardo-da-vinci-quote-about-water).

Discussion

The hydrozoic theory of conscious perception attempts to trace the emergence of awareness and memory during early biophysical evolution [4]. This already demonstrates the limited possibilities for argumentation without resorting to pure speculation. Moreover, the reconstruction of purported early Earth conditions in experimental settings is inadequate for providing definitive evidence that the emergence of basic awareness and life occurred in this particular mode. Despite the potential success in replicating some features of the process delineated in the hydrozoic theory, it would not serve as indisputable evidence that a historical event that occurred over four billion years ago had unfolded in a similar manner. Nevertheless, there are reasons that support the validity of the theory.

Postulate 1: The polarity of water molecules

In his review, Kontogeorgis reported that water possesses more than fifty unique chemical and physical properties and that its structure and dynamics are not yet fully understood [10]. From a chemical perspective, water is composed of one oxygen atom covalently bonded to two hydrogen atoms, forming a structure with a bond angle of approximately 105 degrees. Polarity is created as a result of the difference in electronegativity between oxygen and hydrogen. This is achieved through the donation of one electron from each of the two hydrogen atoms to the oxygen atom. The process thus results in a partial negative charge near the oxygen atom and a partial positive charge near the hydrogen atoms. The bipolar nature of water refers to the uneven distribution of electrical charge that creates a permanent dipole moment. It allows water to interact with other polar molecules and to form layers on the surface of solids. The positive charge and the weak attraction form the hydrogen ends that build open tetrahedral cage-like structuring. The formation of hydrogen bonds induces electrostatic polarization, accompanied by a quantum mechanical charge-transfer component [11]. Water molecules behave like miniature magnets. The polarity of water gives rise to a variety of key properties, including its amphoteric nature whereby it functions as both an acid and a base by donating or accepting protons; its substantial heat capacity; its high bonding readiness; its tendency to exist in multiple phases (gaseous, liquid, solid, and crystalline); and its role as a universal solvent for polar and ionic solutes [12]. Water appears stable, homogenous and inert when incorporated, despite its capacity for versatile molecular interactions [10]. In essence, the hydrophobic effect enables the spontaneous formation of phospholipid bilayers in the primordial soup. These bio-membranes, in conjunction with adhesive water molecules, possess the capacity to store and release information. The combination of bio-membranes with adherent water molecules provides properties of a fluid crystal. Hypothetically, in early multi-cellular organisms, membrane-bound awareness can also be communicated via the interstitial space between the cells [5, 6]. The interstitial space between the cell membranes filled with water and ions forms a separate functional unit. The three-dimensional framework may also function as an antenna by transmitting and receiving low-frequency electromagnetic waves as electrical signals. It may even facilitate relative spatial orientation [6].

Postulate 2: The formation of organic matter from inorganic

The Russian biochemist Aleksandr Oparin theorized that life emerged from coacervates, defined as microscopic, spontaneously formed, spherical aggregates of lipid molecules that are held together by electrostatic forces. The evolution of the animate nature in the primordial soup was hypothesized to occur in the presence of an external source of energy such as ultraviolet radiation, within an atmosphere comprising ammonia, water vapour, and low oxygen levels [13]. The famous Miller-Urey-experiment provided the first experimental evidence for the spontaneous formation of amino acids and fatty acids derived from carbon and hydrogen under conditions such as were thought to exist for early Earth [14]. The experiment demonstrated the potential of abiogenesis in the primordial soup, thus confirming the Oparin-Haldane theory. Despite the divergent speculations among experts regarding the composition of the primordial atmosphere, this experiment offers a compelling

illustration of the potential origin of organic molecules from inorganic molecules (abiogenesis). Self-organization of organic molecules into more complex polymers was assumed to be a consequence of this. The precise mechanisms and the sequence of events remain subject of active research. Ultimately, the Miller-Urey-experiment showed that it could have been possible but it did not provide definitive proof that it actually was.

Postulate 3: The hydrophilic properties of phospholipid membranes

The self-aggregation of lipid molecules to form bilayer membranes is a process that is fundamental to the biochemical evolution of life. Phospholipids are composed of a hydrophilic phosphate head and two hydrophobic hydrocarbon tails. The hydrophilic heads interact with the surrounding water molecules. The spontaneous formation is primarily driven by the hydrophobic effect which minimizes the interaction between the nonpolar tails of phospholipids and water. The arrangement of the bilayer is temperature-dependent, resulting in the formation of a spherical structure [15]. The Miller-Urey experiment supports the theory by elucidating the process by which bio-membranes were formed as an intermediate product of a series of reactions on the early Earth [14]. In the primordial soup, the electrical fields most likely exhibited a state of instability. They rather underwent dynamic changes by discharges and chemical reactions, thereby facilitating the self-organization of biomolecules. According to the hydrozoic theory the origin of awareness is not confined to a singular water-membrane unit from which all else emerged. This does not necessarily contradict the notion that the universality of the genetic code provides evidence of a single event that generated the common ancestry of all extant cellular life [16].

Postulate 4: The sensitivity of liquid crystals to electromagnetic fields

The fluid mosaic model of a phospholipid bilayer provides two outer surfaces with polar and hydrophilic properties, to which water could adhere. Lyotropic liquid crystal phases are known to be suitable for energy storage [17]. The sensitivity of liquid crystals to electromagnetic fields and the ability to maintain their polarization renders them useful for information storage applications. Liquid crystals exhibit high sensitivity to electric fields due to substantial dielectric anisotrophy, but are generally less sensitive to magnetic fields. Kopcanský et al. reported the influence of superposed electric and magnetic fields on the structural transition [17]. The nematic phase of liquid crystals is defined as a fluid state that is characterized by the alignment of molecules in a parallel orientation along their long axes. The direction of their alignment, and hence the overall optical response of the material, can be readily modified by the application of an electric field. Elastically relaxing back to a well-defined off-state when the field is removed is another of this material's characteristic. Liquid crystals can maintain their polarization, thereby enabling precise control over molecular orientation. Bobrovsky & Shibaev observed an anomalous "memory effect" during the process of reorientation under polarised light [18]. The authors reported that the capacity of liquid crystals in optical data storage indicated a memory effect in thin homogenous amorphous polymer films prepared from chloroform solutions. Liquid crystals can exhibit memory of their orientation in proximity to the surface of thin membranes. Accordingly, in the water-membrane unit the flow of ions and the movement and reconfiguration of molecules enable the processing of changing information. However, while memory effects in liquid crystals refer to the capacity to sustain a particular molecular orientation subsequent to an external stimulus (even subsequent to the removal of the stimulus), this phenomenon does not provide definitive evidence to substantiate that awareness was generated in water-membrane units.

Postulate 5: The interrelation between electrical and magnetic power in awareness

The hydrozoic theory posits that the application of mechanical force to phospholipid membranes results in the conversion of mechanical power (P=fv) into electrical power (P=U·I) and magnetic energy over time [5]. As the magnetic power represents the rate at which a magnetic field stores energy, the change of the magnetic flux ($\frac{d\Phi}{dt}$) corresponds to the induced voltage (U). Ultimately, the force (f) results from the change in magnetic energy over a specific path segment (1).

$$f = \frac{U.I}{v} = \frac{d\Phi.I}{dt.v} = \frac{d\Phi.I}{s} \quad (1)$$

The transition from mechanical energy to electrical energy in membranes occurs when physical deformation by bending, stretching, or tension of a membrane induces an electrical response and a voltage difference. This phenomenon is driven by molecular motions and the rearrangement of charged components, particularly within biological cell membranes and synthetic flexible materials. Khandagale et al. reported that even membrane fluctuations resulting from molecular motion and activity can generate electricity [19]. In their study model, mechanical strain in prebiotic membranes generates flexoelectricity by converting mechanical deformation into electrical signals. The researchers found that the transmembrane voltages may reach up to 90 millivolts and that voltage fluctuations can occur over milliseconds. These findings closely match the intensity, speed and shape of typical action potential curves seen in nerve cells. This phenomenon suggests that the same underlying physics explains electrical signal transmission in biological systems. The physiological background is that electric currents induce magnetic fields that have the capacity to penetrate the body with minimal effort. Consequently, changing magnetic fields induce changing voltages in the body. This enables synchronization.

Postulate 6: The dual concept of perception

The dual system is predominantly observed in nature and mirrors the human perspective. The dual concept of perception in the marine environment for instance refers to the integration of the accuracy-recognition relationship in monitoring the aquatic surroundings [20]. The comparison of only two opposite patterns enables rapid discrimination. According to the hydrozoic theory of conscious perception, intermittent mechanic forces acting on the water-membrane unit generate electric and perpendicular magnetic fields. The sequence of induced electric and magnetic fields causes the water molecules to align along the field lines and to exhibit diamagnetic repulsion. The electrical signal that ensues a mechanical stimulus does not yet constitute basic awareness. The retrievability of the induced magnetic signal is pivotal. The spatial and temporal entanglement of electrical and magnetic forces as complementary aspects of the same phenomenon result from the change in magnetic energy over a specific path segment. Hypothetically, basic awareness arises from this electromagnetic resonance in the bio-membranes [6]. Contrasting to this background noise, additional signals result in amplification (constructive interference) or attenuation (deconstructive interference) through the superposition of waves. Further transformation of spatial and temporal signal intensities into

frequencies enables simple pictorial discrimination. In unicellular organisms, sensory experiences are already mediated via senomic fields in the membrane [21]. This way, cell-bound primary perception emerges. The dual principle applies to the raw sensory data processing of perception and the subsequent conscious realization of that data in awareness. Perception accentuates the distinction between the underlying phenomenal content (perception) and the process that renders that content (awareness). Conscious perception, defined as the self-centred attention to a selected thought and its associated feelings was developed in advanced nervous systems [20]. Dual perception is a significant concept in the study of human understanding. It emphasizes the complexity of perceiving reality through the lens of observation which is influenced by the observer, the perceiver and the perceived in perception [22]. While consciousness is derivative, basic awareness appears fundamental. In accordance with the dual concept of perception, recognition is predicated on the recognition of opposites. The dual concept is further exemplified in instances of apparent ambivalence in emotional and rational thinking. On this Wittgenstein posted, that any phenomenon that can be described can be considered a cause of a deviation [23]. In a related context, he asserted: "Everything that can be described could also be different" [24]. The ambivalent description of our constructed reality invariably entails the possibility of contradiction. In his Viennese talks, Wittgenstein placed particular emphasis on the following point: "The contradiction must be contradictory, not contrary" [23].

Postulate 7: The association between electrical activity in the brain and consciousness

In the domain of neuroscience, the concept of consciousness is predominantly interpreted as a product of complex, synchronous electrical activity. The summation of synchronized neuronal activity in electroencephalogram and magnetoencephalogram is recorded from electromagnetic signals. The synchronous electrical patterns of brain waves correlate with varying levels of alertness. In principle, electromagnetic fields have the capacity to influence neuronal firing through a feedback loop between neighbouring cells (ephaptic coupling), with conscious experience emerging from large-scale synchronous electrical activity within a network of neurons [25]. Electromagnetic fields are generated by neurons that are connected by synapses and ephaptic connections. According to Susan Pockett electromagnetic field theories of mind/brain integration posit that current flow across neuronal membranes generates an electromagnetic field which, in turn, permits computation and integration of information, thereby producing a conscious mind. This theory posits that consciousness is identical with certain spatiotemporal patterns in the electromagnetic field [26]. In her electromagnetic field theory human consciousness is defined as a local, brain-generated, configuration of, or pattern within the electromagnetic field. According to the hydrozoic theory, interstitial water that adheres directly to the cell membranes is surrounding non-insulated dendrites in the cortex [5, 6]. Propagation of electric signals along the unmyelinated dendrites is modulated by changes in the magnetic field that induce a voltage that is opposite in direction of the signal current. The repeated depolarization and repolarization contribute to the generation of synchronous oscillating electrical fields that coordinate in specific bands. Metaphorically, the pulsating electrical activity of the neuronal network corresponds to the pulsatile magnetic field in the primeval sea.

Postulate 8: Responsiveness of awareness

In his critique of Kantian philosophy, Arthur Schopenhauer emphasized that the sensation perceived through the sense organs does neither accurately represent the object in itself (noumena) nor the individual perception (phenomena). He particularly distinguished between observational recognition from sensibility and abstract recognition from reason [22]. Consequently, when consciousness is analysed using a transitive approach, it is understood to directly refer to an object. The subjective perception of this object corresponds to sensibility. When consciousness is viewed intransitively, it is understood to refer to a fact. This, for instance, applies to apperception that is based on partial information and previous experiences. The property in question corresponds to reason and appears to be linked to cerebral processing. However, consciousness is not exclusively confined to brain functions. By distinguishing between a central and a peripheral nervous system, the intestine exhibits even a greater density of neurons compared to that observed in the entire spinal cord [27]. Neurons function largely independently of the central nervous system and play an important role in the modulation and transmission of signals and in the processing and interconnection of the spinal ganglia and the nuclei [28]. This phenomenon ("gut feeling") can be attributed to a multifaceted interaction between the brain and the body. The manifestation of intense emotional states, such as profound agony, gives rise to pronounced physical manifestations within the abdominal region. According to the hydrozoic theory, membrane-bound awareness basically facilitates unspecific "sensitivity of existence", while cell-bound primary perception provides for discrimination of the internal and external environment [21]. There is a gradual development from acting to reacting, from perceiving to recognizing, and eventually to consciously experiencing and reflecting.

Postulate 9: The role of basic awareness in socio-hydrology

The term socio-hydrology was coined by Sivapalan et al. to denote the scientific study of the interactions between humans and water, with a particular focus on the dynamics between these two entities [29]. In this interdisciplinary field, the human element constitutes an integral part of the hydrological cycle. In the broader sense, the co-evolution of living beings and water is a multidisciplinary field that integrates the findings of the natural sciences, social sciences, philosophy, and spirituality. The existence of life as we know it is contingent upon the presence of water. Water with its extraordinary and unique properties, plays a key role in the ontogenetic and phylogenetic development of terrestrial life. Water is a fundamental requirement for metabolism and bodily functions in all living beings. From a socio-hydrological perspective, the connecting element between membrane-bound awareness and complex brain-bound conscious perception is the interaction of electrical and magnetic fields along the water-membrane unit [6]. As a primary component of all living beings, membrane-bound awareness functions as a complementary agent, establishing a simultaneous connection between the awareness of the individual and that of other living beings. Awareness arises from matter. This follows the first tenet of Baruch de Spinoza, which states: substance is natural prior to its affections [30].

Postulate 10: The consistency of the hydrozoic theory

According to Kurt Gödel, a statement that is neither provable nor disprovable within the logical system in which it is formulated, is valid. The system has been extended to include this statement, and it remains consistent with the existing framework [31]. The hydrozoic theory of conscious perception offers a plausible explanation for the emergence of basic awareness without necessitating the re-evaluation

of biological principles such as the cell as the building block of life or the role of the central nervous system in mammalian conscious experience. The term "consistency" in this context does not imply that the development in question occurred precisely as described, rather, it signifies that it could have occurred in exactly that manner. While possibility resides within the domain of potential outcomes, probability is a metric that quantifies the frequency of an event [8]. Although the hydrozoic theory is consistent, in the final analysis it is merely one conceivable possibility. The hypothesis that basic awareness was generated from water-membrane units has not yet substantiated by empirical evidence.

Postulate 11: The plausibility of the hydrozoic theory

The concept of validity is contingent upon the existence of empirical evidence that substantiates objective accuracy and logical soundness. Plausibility is defined as the subjective, intuitive believability or reasonable likelihood that something is factual [8]. The concept of validity necessitates the presentation of substantiating evidence, whereas plausibility implies the possibility of future evidence that could support the theory. It is imperative to recognize that plausibility does not serve as a substitute for a rigorous verification. If we accept that scientific theorems and axioms are known to be only conditionally true, then it is also logically sound that compiled theories based on those theorems and axioms are of limited certainty. In either case, blind trust is inappropriate. A comparison of Kahneman's two systems reveals that the fast system exhibits a predilection for intuition [32]. Seeking causes for events and creating coherent interpretations corresponds to the subjective, intuitive reasoning of plausibility. This way the concept of plausibility is contingent on a prior probability distribution before evidence is taken into account. Although the hydrozoic theory is deemed to be scientifically plausible and philosophically reasonable, currently there is not sufficient evidence to substantiate the theory's validity.

Postulate 12: The probability and relevance of the hydrozoic theory

Probability is a quantitative, mathematical measure of the likelihood of an event occurring in relation to the total of all imaginable events [8]. Under conditions of numerous possibilities over billion years of biophysical evolution the probability that a single theory is true is practically zero. Fittingly, under these conditions a probability of zero also does not mean that the counter-probability is true. While probability focuses on the likelihood, relevance refers to the pertinence of applicability. Despite the fact that the probability of the hydrozoic theory is possibly low, its relevance is high. According to Wittgenstein, the proof of relevance is a representation of the general form of the solution method. Therefore, the theory is self-applicable [7]. In another section he provides further elaboration on this point: "We want to use the term proof in such a way that it is not simply defined by disjunction of proofs commonly used today, but rather we want to use it in cases of which we currently have no conception". Thus, the term "proof" transcends the conventional boundaries of usage prevalent in contemporary contexts. Similarly, Spinoza posted, that true ideas and modifications which do not really exist outside the mind, nevertheless contain their essence in another in such a way that they can be understood through it [30]. Accordingly, the hydrozoic theory of conscious perception is relevant and offers a straightforward and comprehensive perspective on the development of basic awareness.

Conclusion

The spontaneous formation of phospholipid membranes in an aqueous environment is a foundational process during the biophysical evolution. The hydrozoic theory of conscious perception posits that the properties of water and membrane characteristics are bivalent in the genesis of awareness and memory. The fundamental principle underlying the genesis of awareness is electromagnetism. In principle, basic awareness preceded the biological evolution of cells. The hydrozoic theory of conscious perception is reasonable within the context of early Earth conditions and possesses a high degree of plausibility. The probability of its occurrence, however, remains uncertain and may be low. This theoretic assertion extends to speculative timeframes that posit the emergence of floating bio-membranes in the oceans more than 4 billion years ago [16]. However, even if the theory were objectively incoherent, it is still subjectively necessary. The concept of the hydrozoic theory posits that awareness constitutes a fundamental property of life that provides for collective consciousness. Basic awareness is a primal common understanding in all living beings. The hydrozoic theory reframes the emergence of consciousness generated from highly developed nervous systems and challenges its prevailing notion.

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