The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 12, Issue 1, January- March, 2024
DIP: 18.01.110.20241201, DOI: 10.25215/1201.110
https://www.ijip.in

Research Paper

Consciousness: Emerging Theory in Biology, Psychology and Technology: The Symmetries and Complexity

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ABSTRACT

This paper examines the complexity theory of consciousness, which is one of many hypotheses proposed to explain the emergence of complexity from the basic notion. Our goal is to establish which characteristics have more fundamental implications for the emergence of biology, psychology, and technology, as opposed to those that are more peripheral in these contexts. In the examples we discuss, the complexity is quite rational and factual in connection to biological and psychological processes. The most adaptive hierarchical structures are open systems that participate in the behavior. Each system is causally successful because they work together, and their value cannot be overstated. Various biological processes are responsible for achieving the aim, while physical limits also influence the outcomes that can be attained. The underlying issue is the origin of consciousness and the biological basis of life, which are structured and variable in the principles used to study consciousness in psychology. One possible answer is to acknowledge that consciousness is an irreducible emergent characteristic of brain tissue. The structure and function of the brain have been extensively characterized over the previous ten decades, yet the level of awareness is debatable. The level of awareness is a frequent complex in biological, psychological, and technological fields. Our goal is to identify common characteristics that will allow us to explain the idea of consciousness.

Keywords: *Complexity Theory*, *Emergence*, *Biology*, *Technology*, *Psychology*, *Consciousness*

In the following sections, we will look at the various ways to understanding complexity and remark on what function we believe they have when compared to one another. We shall consider three domains. Biology, Psychology, and Technology. Complexity is used to determine which component dominates the concept of consciousness and human behavior. Our goal is to clearly demonstrate how to relate and which components share many similar characteristics. In this research, we will focus on psychology, specifically brain structures and functions as biological institutions. Our goal is that, while they are undoubtedly complex, they share many similarities with what we provide.

Our goal is that, while they are undoubtedly complex, they share many similarities with what we provide. However, other considerations may consider bringing in too many

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Received: January 31, 2024; Revision Received: February 18, 2024; Accepted: February 23, 2024

additional complications. The paper examines the complexity, variety of techniques, the role of each variable, and how to use the cognitive boundaries and availability of life and consciousness. (1) We will show that the first two domains are based on the same basic concepts, which differ from those emphasized in the third.

The Symmetries and Complexity

Biology

Biology is the science of studying humans and plants, whereas zoology is concerned with humans and botany with plants. We try to comprehend how its complexity evolved over centuries, beginning with Bose, Hippocrates, and Aristotle. We shall first learn about physiology, developmental biology, and evolution. Hierarchy Biology is a live object of nature, based at the bottom in the same material things as everything else we see around us (2). All of this is based on physiology and biochemistry investigations, and its intricacy has also been investigated in regard to its interaction with other parameters. Many others, including Hippocrates (c.460-370 BC), had previously described the circulation of blood from the heart to the brain (2), but William Harvey was the first to put it on solid ground in 1628. (3) One by one, all of the physiological systems of humans were thoroughly known. The neurological system, particularly the brain, and the biochemistry of blood circulation are essential considerations in our interpretation. The neurosciences focused on cells as a new pathway to these minuscule cells, which have intricate substructures such as cytoplasm, nucleus, ribosomes, and mitochondria. This is the first level at which all of life's functions. There are millions of cells in the human body and form different structures and functions in the human body. James Watson and Francis Crick (1968) published the double helical structure of DNA (4).

This led to the understanding of human behavior and a new trend was set to study DNA, RNA studies. Resulting in a new era of science as molecular biology was started as a gene sequencing. The different genes are coded for separate behavior in human beings. Interaction neuro networks with specific functions, particularly metabolic neuro systems, gene regulatory networks and cell signaling networks. These networks combined and produce stimulation in the brain in macro level functions out of the huge number of interactions. These actions in the neurons may give birth to the conscious level of human tissues. The activation of brain cells may produce consciousness (5).

The concept of complexity

The term complexity in relation to the brain and consciousness is becoming more common, not just in scientific terminology, but also in psychological study and even in technological terms. The word AI has a widespread and multi-conceptual foundation, and its multiple components make it predictable and scientific. In recent decades, the world of science has devoted a major portion of its attention and resources to the study of complex systems. It is distinguished by significant complexity resulting from the interrelationships between subsystems and other variables (6).

For example, the human brain is a complex system that demonstrates this nature from various perspectives, including biophysical, biochemical, and psychological. The brain anatomy and function were the most important aspects of the various branches of study. In neuroscience, it is part of action potential spike chains related to cognition and perception, thought formation, and agency.

Psychology:

Psychology is the scientific study of the mind and behaviour. Now, following brain function, the key goal is behaviour and consciousness. Regulating collective behaviour might be very different from regulating individual elements' behaviour (8). Brain activation confirms the live evidence of action through consciousness and feeling (9). Human behaviour is the part of complex actions involved in dealing with the spontaneous emergencies. The human characteristics of being decided in the structure of the human body which is made by different proteins situated in the cells. The cells make tissue and latter convert into organs. The chemical constituents are basically proteins which are stored in cells in the form of DNA (10). The numerous functions begin with a large number of elementary components of a few types that interact readily with one another to produce a certain behaviour (11). Complex and simple conduct happen when the total is not a part of the brain and only the action occurs (12).

Few notions have been as pervasive in recent decades as complexity, prompting the question of whether complexity represents a new scientific paradigm, in the Kuhnian sense, as evidenced by Giorgio Parisi's Nobel Prize (13). The remarkable phenomenon is the formation of qualia and mental processes from physical things, namely action potential spike chains propagating in the physical brain. Plasticity at global and micro dimensions facilitates experience-based learning (15). Our experiences and understandings excite the brain, enabling it to recall, rebuild, and correlate memories. Perception is enabled via cortico-thalamic circuits that perform predictive processing on incoming sources, which is experienced as qualia (16). Given these large numbers, interactions frequently take the shape of networks, in which basic interactions are combined to produce complex results.

Nervous systems are structural networks that are hierarchically arranged (17). They are made up of neurons coupled by synapses to other neurons, which constitute a physical neural network (18). Action potential spike chains that travel down axons to neighboring neurons communicate information and enable adaptive resonant networks to emerge. Psychology is the consequence of biological evolution, which led to the emergence of mind and consciousness. In this way, it symbolizes the essential framework within which the reductionist science programmed is put, which, despite the fact that many knots remain to be untied, is regarded as the only scientifically legitimate and viable path (19). Any comprehensive theory of reality derived from a few key biopsychological studies.

Technology and Consciousness:

Different disciplines claim to discover and want to define consciousness in their own methodologies, but couldn't achieve a common formula for all. AI and artificial consciousness may be cre-ated or program it into a machine for a particular job. In the medical diagnosis it is widely used for clinical diagnosis (20). According to recent robotics research, the human brain is effectively a supercomputer. However, the mechanism was that most AI researchers were following robotics technology to some level in order to automate medical technology (21). This is an example of artificial awareness data of specific symptoms experienced by the general population. Whereas the phenomenon of the human brain is fundamentally different, as evidenced by experiments undertaken by a group of scientists on chimps to demonstrate the learning effect of artificial intelligence (22). Technology based theory is essentially a complicated machine-like brain, that supports the idea of artificial awareness for a particular job and to create a similar job in the larger scale (23).

Mostly AI is used in robotics technology in improving machine intelligence such as virtual assistants in the robots in the industrial work force (24). The concept is also useful in the technology in driverless cars. The Tesla mobile industry is using an automatic learning program through AI in their electric vehicles. The concept of self-learning by the man driving the car, will be useful in driverless taxis (25). Some social robots already have some understanding of machine consciousness for serving the dishes in the hotels.

CONCLUSION

The revolution in artificial intelligence (AI) is transforming our economy and society. A call to a customer service professional begins with an automated conversation. Driverless automobiles will transport us to and from work, as well as allow us to rest while at work. Learning on any topic and extracting relevant information from large data bases GP conversations.

The risks of AI have been widely debated by researchers and the public. AI robots will outperform humans in terms of knowledge, intelligence, and reliability. The technology exerts control over the highly controlled in terms of physical and intellectual abilities. Robots in operation should be regulated and have access to their full capabilities so that their utility can be easily assessed.

Furthermore, engineers who make robots must be monitored so that they do not create a formidable army of 'war-bots'. Supercomputers and robots, which assist humans in medicine and other fields, do not require mind or conscience. The same rationale applies to ‘slave robots' who will perform mundane tasks like cleaning, laundry, cooking, and shopping. However, AI robots will serve as professors, instructors, doctors, nurses, and lawyers.

There are advantages and disadvantages, but an AI professor, doctor, or nurse is more helpful if they are self-aware and possess moral principles such as nonviolence, compassion, respect, tolerance, and empathy. AI robots must be programmed to obey and accept human commands at all times.

Recent advancements in neuroscience and artificial intelligence have created unparalleled opportunity to comprehend the brain's complexity. Advances in neuroscience research have exposed the link between brain structure and function, and the success of artificial neural networks has highlighted the necessity of understanding biological sciences. In this Perspective, we present the Digitalized Twin Brain, a disruptive platform that bridges the gap between biological and artificial intelligence. Furthermore, we may invite interdisciplinary collaboration and emphasize the new Vista's far-reaching consequences for psychological study and development. The future research projects will provide insights into the emergence of intellect and neurological illnesses.

It has enormous potential for expanding our understanding of both biological and artificial intelligence, and technology can accelerate the development of psychological research with artificial general intelligence while also facilitating precision mental and behavioral treatment.

Recommendations:

1) The psychological research should be redefined in the aspects of conciseness, perception and awareness of brain functions, as a multidisciplinary approach.

2) The need of time to upgrade the psychological research in parallel with neurosciences and more experimental than subjective criteria.
3) The brain and its activities should be redefined in psychological research more practical than hypothetical.
4) The mind and behavior should be more effective as neurobehavioral studies and need of time to upgrade the psychology in the area of biological sciences.
5) The technology (AI), should be incorporated with the psychological research and development with the help of computer-based assessments.

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Acknowledgment
The authors are thankful to the research scientist whose work and paper is acknowledged in this review article. Special thanks to Dr. Larry Carlson, USA, with large discussion regarding consciousness on the platform research gate.

Conflict of Interest
The author(s) declared no conflict of interest.

How to cite this article: Kumar, P. & Kumar, M. (2024). Consciousness: Emerging Theory in Biology, Psychology and Technology: The Symmetries and Complexity. *International Journal of Indian Psychology*, *12*(1), 1188-1193. DIP:18.01.110.20241201, DOI:10.25215/1201.110