

## Opinion

# On Science & Phenomenology in Consciousness Studies

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## Abstract

Everything around seems phenomenal and appears driven by a conscious experience. Everything is an experience and for the experiencer appears eternally phenomenal and subjective. The conscious 'How' can be easily explained by the many reductive based advances in science and other disciplines, but the conscious 'Why' persists as phenomenal. The 'How' however can be reduced only to a precise limit i.e. the limits of scientific exploration, beyond which it persists to be phenomenal. This paper is an inter-disciplinary understanding of how science and phenomenology can complement each other to help decipher and conform to the hypothetical approach, that everything around is phenomenal.

**Key Words:** Phenomenology, science, philosophy, objective, subjective, experience.

## Introduction

*Our goal should be to live life in radical amazement. ....get up in the morning and look at the world in a way that takes nothing for granted. Everything is phenomenal; everything is incredible; never treat life casually. To be spiritual is to be amazed. — Abraham Joshua Heschel*

Everything that happens around us seems to be phenomenal; that which articulates with a conscious experience. From the birth of a child, to the flowering of a flower, to the growth of a fruit, to the blowing wind, to the birth and death of a star, to the expanding universe, to the rotation and revolution of the earth, to the formation of galaxies, to a smile on a face, to a thought that occurs; all of it feels phenomenal; an experience that may have been experienced from an objective and subjective standpoint but remains indeterminate. From a reductive objective approach, the sciences claim to understand the objective behind materializing the experience, but the experience continues to be surreptitious. Science has sought to explain the 'How' of these actions in some way or the other and is confident that they will know all of it in the future through the ever expanding scientific exploratory approaches; for the 'Why' will only be understood from a phenomenological attitude. Scientific exploration is a deterministic reductive approach of categorizing all experiences in its objective sense and its aim lies in reducing every system to a scientific portion of confirmed evidence, but apparently, it seems that the more we reduce it, the more phenomenal and mysterious it becomes.

Artificial intelligence may sooner or later develop the process of generating consciousness within structures that are artificially premeditated, but these forms may never experience the consciousness of a conscious moment, for they would be just be automatons fulfilling a proposed

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activity, that with no expressions, feelings and emotions. Even if the art of emotions and feelings are induced and displayed by these forms, the experience would stay phenomenal. Phenomenal consciousness can be understood through a medium that necessitates perseverance and restraint; that which is beyond the discipline of most beings. Current experiences can therefore never be understood by only a reductive approach and needs to be understood from a point of objectivity and subjectivity of an experience. In order to build this understanding, collaboration between the various sciences and phenomenology is needed, wherein the science based objective reductive methodologies can be assisted by the subjective experiences studied within the scope of phenomenology that deals with experiences such as judgments, perceptions and emotions.

Phenomenon is an unusual experience that can be observed through science but can be experienced only through philosophy and phenomenology. This paper is an attempt to bring an inter-disciplinary approach in understanding the science and phenomenology of consciousness conforming to the understanding, that every manifestation and its experience are phenomenal.

## **Orch OR Theory & Phenomenology**

Consciousness is the ability to be aware of and to be able to perceive the relationship between one's self and one's environment. It is to be associated with the ability to process, store and act on information gathered from the external environment (Miller and Bassler 2001) while quantum consciousness reduces the existence and creation of a conscious moment through a computational event (Hameroff and Penrose 2014). Penrose and Hameroff claim that constant formation and reformation of tubulin states in the cytoskeleton are governed by quantum mechanical effects within each tubulin interior and these effects function as "quantum bits" that interact non-locally with other tubulins and with quantum holograms. When enough tubulins are entangled long enough to reach a certain threshold, a "conscious event" occurs with the collapse of the wave function within the limits of space time geometry (Hameroff 1994). The theory confirms the dipole characteristics of the tubulin states that mediate computation and entanglement as electric or magnetic, the latter being more prominent as demonstrated by Bandyopadhyay Coherence at alternating currents of gigahertz, megahertz and kilohertz frequencies at room temperature (Sahu et al 2013). Entanglement and interference patterns within the microtubules support the formation of holographic images, which forms the basis of consciousness (Hameroff 2014; Pitkanen 2014; Cosic et al 2015; Mitchel and Staretz 2011).

Quantum studies are now revealing aspects in relations to subatomic particle energy and its ability to perform beyond the imagination of what one can expect and visualize. Quantum entanglement is a unique property in quantum physics that best describes the surreptitious compartments that take place at a quantum level with its effects observed at a macroscopic level (Peres 1993). In quantum physics when two particles are entangled they behave as one and not as two separate particles, so what happens in the quantum world is completely different from what we perceive in the macroscopic world, which also holds true for the world of quantum biology. The quantum world is mysterious; the entanglement of particles at a subatomic level within a biological network of the microtubules is where memories and awareness gets computed. Awareness or consciousness is therefore fundamental that is computed by particles in the quantum world and our bodies are like quantum processors as defined by the ORCH-OR theory

that is an emerging creation, meant to increase its intelligence and build its identity in complete awareness.

If we take the example of the color red, experiencing the color red generates a sense of sight within the cones and rods of the retina confirming the color red that triggers a neural firing within the brain centers. As per the ORCH-OR theory, information transfer occurs by means of the microtubules within the brain and with a combinations of the electrical impulses and transmittance via the microtubules, a retrieval of the stored memory as holograms in the brain occurs; which confirms that the color to be red. The objective experience of the color is therefore confirmed to be red, which convinces the mind and the senses but the experience of the color red remains inexplicable. Subjective consciousness does not depend completely on objective consciousness because of the phenomenal metaphysical experience or *qualia* associated with it. The color red is red and there is no other explanation for it; this color is part of the spectrum of colors with no specific understanding that we can assume or predict. The ORCH-OR theory maybe a robust reductive theory but remains phenomenal due to the phenomenon of quantum entanglement which apparently is the key mechanism within the microtubules and the behaviours of sub atomic particles in the quantum world. Despite of a strong reductive theory in hand to explain consciousness, at the quantum level everything becomes mysterious and phenomenal when it comes to the subjectivity of the experience.

## Phenomenology & Scientific Inquiry on Consciousness

Phenomenology is an enquiry based sub-discipline of philosophy that aims to understand the subjective experiences of consciousness. A phenomenon is a fact or situation that is observed to exist or happen and whose cause or explanation can be questioned. According to the Concise Oxford Dictionary, philosophy defines a phenomenon as, the object of a person's perception; what the sense or the mind notice. German philosopher Edmund Husserl conceptualized phenomenology to be concerned with the study of structures that support consciousness and the phenomena that appears in the acts of consciousness (Kolb 2014; Natanson 1973). Phenomenology in some sense appears to be scientific but seeks its understanding of the subjective experience of consciousness through systematic evaluation of properties and structures associated with the experience. Access and phenomenal consciousness are forms of consciousness that were proposed by Ned Block, wherein he proposed that phenomenal consciousness is an experience of consciousness, feelings, emotions or *qualia* while access consciousness is perception of the information that is perceived (Block 2007). This concept was further reiterated by David Chalmers; access consciousness is purely mechanistic or cognitive; that which is measured, while phenomenal consciousness is challenging; known as the hard problem which deals with experience of consciousness or *qualia* (Chalmers 1995;1996).

Methods in phenomenology are of key importance and hold a strong foundation to understand such mysterious concepts which utilize methods less restricted in comparison to the reductive based scientific approaches. Phenomenology is therefore a discipline which helps understand the phenomenon behind an experience. Phenomenology has the capability to understand the subjective experience of consciousness and can therefore contribute to understand the phenomenon of quantum spookiness. This discipline is applied to the various reduction based

scientific theories of consciousness can help build a strong theory with convincing aspects from both disciplines. There are several theories that have been put forth in the fields of science and phenomenology but science based theories lack the explanation of the subjective experience, while the phenomenology based theories lack the objective experience. A combination of both disciplines can bring a compelling inter-disciplinary correlation explaining the 'How' and 'Why', which would deal with both the subjectivity as well as the objectivity of a conscious experience.

## Conclusion

A theory such as the ORCH OR theory of consciousness may be capable of explaining the contrivances and construct of consciousness from a quantum perspective, but with limitations in understanding the subjective experience of consciousness, also known as the 'hard problem' of consciousness. The subjectivity of consciousness hence remains phenomenal and cannot be reduced within the confines of scientific explanations. Similarly, quantum and quantum processes such as quantum entanglement is also phenomenal, as it cannot be explained within the limitations of science. The incompleteness of such a theory can therefore support the hypothesis, that everything around is phenomenal even though we know the science behind its doing. Phenomenology has the potential to understand the phenomenological approaches and through an inter-disciplinary objective-reductive theory can explain the phenomenon and support the science behind consciousness.

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