

## Consciousness - a Dialogical Presentation

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**Abstract:** *Consciousness is, probably, the most common and the most mysterious experience in human life. It encompasses a stream of mental activities that include knowledge and recognition, emotions and feelings, organic dispositions, and linguistic acts, as well as altered states such as those provoked by drugs and pathologies, and mystical moments.*

*The philosophy of mind is habitually reprimanded for neglecting to characterize exactly what consciousness is. In this regard there has been little change over the previous decades because consciousness has a wide assortment of meanings according to authors and disciplines.*

*Consciousness is analysed in scientific perspectives such as neurosciences, psychology, linguistics, physics, and cybernetics. Each science highlights special features of consciousness' rooting in the subject, according to specific interpersonal contexts, biological developments and always as a mirror of the brain's complexity.*

*A short state of the art of consciousness' studies is useful if it searches for constant issues beyond the variety of explorations of conscious experience. Beyond the psychology's self, the psychoanalysis' ego and the mental maps of neurosciences, we observe trends in the philosophy of mind that search for a dialogical ground; what relates us to the other as we say 'I', 'Thou' and 'We', is an essential aspect of human experience and a permanent challenge.*

**Keywords:** *Consciousness; philosophy; mind; body; neurosciences; brain; machine-learning; intentionality; relationship; "I and Thou"; first-second- and third- person studies.*

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## 1. Consciousness: a self-replicating entity

As Wittgenstein reminds us, nothing seems to be so near and intimate and, at the same time, so remote and inaccessible from us than our own conscious mind. This is the challenge of consciousness: everyone apparently knows what it means to be conscious, but once he/she reflects, there is an unbridgeable gulf between the inner conscious world and what is out there. Can we throw some extra light on this conundrum?

The fact that consciousness presents itself as a part of the mind and a part of the universe, capable of creating a model of itself, of being self-consciousness, generated classical designations throughout history. Socrates speaks of the *daimon*, the Scholastics of the soul, Descartes of the *cogito* and more designations exist, such as spirit, *animus*, heart...

Classical theories of consciousness were focused on the relationship of the one and the multiple, that is, the relation of being human with the being in which it participates. Classical philosophers narrated how consciousness lives in tension between different world models, or more accurately, how our world changes according to our consciousness, as we impart meaning upon data of experience. These narratives of duality brought us formulae such as Parmenides' *being and appearances*, Plato's *ideas and phenomena*, Schopenhauer's *will and representation*.

As we ask about frameworks for studying consciousness, we could start by saying that the complexity of consciousness (Penrose, 1994) depends on the amount and type of information it uses to create a model of itself. It varies from infant to adult and we can question whether there is awareness in non-human animals, in robots and in artificial intelligence. The minds of children are particularly difficult to investigate; animals have very different shades of sensibility; the creators of artificial intelligence have the ambition to turn it self-conscious through quantum computers.

May we say that elementary machines – for instance a thermostat, a photoelectric cell - have a zero degree of consciousness, as they use a single information circuit? Vegetative beings have multiple information circuits about water, temperature, gravity, light. Animals like insects and reptiles have information circuits to determine the spatial coordinates of partners, rivals, prey and of themselves. Social animals have information circuits related to the group to which they belong and the hierarchies with which they live, expressing themselves through emotions and gestures.

We, human beings, beyond the previously named capacities, have the power of relationship, allowing us to reach self-consciousness and to extend

ourselves to the past through memory and to the future through promise. This reflection upon ourselves, as self-consciousness or cogito, is the power of the *daimon*, soul or spirit. We are not closed beings but open ones; we are made of relationships, of empathy with the other, the one that of himself says 'I' and of the others 'Thou' and 'we'.

## 2. René Descartes and the philosophers of mind

René Descartes (1596–1650) was aptly called the father of modern philosophy as he settled the agenda for the study of mind. He is best known for his sharp distinction between the physical and the mental (Cartesian duality).<sup>1</sup> The body is one sort of substance and the mind another because each can be conceived in terms of totally distinct attributes. The body is characterized by spatial extension and motion, while the private mind is characterized by thought.

Descartes was an interactive dualist. He settled the starting point for scientific knowledge about mind and body, and the correlations between them. Inside the body, the brain controls sensory input and motor output. For him, consciousness was a state of mind, with the body having a role restricted to nonconscious processes and the brain a key role in linking matter and mind (Garvey, 2011).

In *The Passions of The Soul*, Descartes (1946) progressed from philosophical dualism to a conception of duality in human nature grounded on anatomical observations. He stated that we can “think with the body” as genera of passions agitate the mind as they emerge bottom-up from the body. The mind, then, moves the pineal gland in a top-down process. In that interface, the rational soul creates specific types of conscious experience or ideas. This model of interplay, showing conflict and resolution, remains an inspiration for contemporary neuroscience.

Science realized, some 150 years ago, that Descartes’s account about how the body's sensory system caused the psyche's understanding of sensations was not right; however, we should not give away his model too soon. We do not accept dualism any longer – “Descartes' mistake” – as new perspectives are extant about how the psyche rises out of the properties of the cerebrum. Notwithstanding, his differentiation of mind and body remains a focal issue in the investigation of consciousness.

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<sup>1</sup> Classical dualism has proved to be a thought-provoking and never-ending source of debates especially in modern neurosciences: see Damasio’s discussion of Descartes’ philosophy in *Descartes’ Error* and Libet’s original interpretation of Descartes’ dualism in *Mind Time*.

Much effort was devoted since Descartes to improve the study of how the physical and the mental relate. These two entities were considered as separate substances by Leibniz (1646–1716) and built to run together in perfect harmony (psychophysical parallelism). George Berkeley (1685–1753) denied the possibility of mindless material substances (immaterialism). The French materialist La Mettrie (1709–1751) bluntly extended to man Descartes's idea of animals as simple automata. Conscious and voluntary processes would be the outcome of mechanisms, no more than that. No space at all for volition or instinct. Such belief is held by contemporary neuroscientists who search for the neural correlates of consciousness (Cavanna & Nani, 2014).

Immanuel Kant (1724–1804) stressed that the limitations of mathematics in scientific method would prevent them to describe mental phenomena. He pointed out that mental phenomena are individual and therefore inaccessible to experimental manipulation. He admitted physiology as a scientific discipline, but he ruled out psychology because the study of the mind would not support a quantitative approach.

### **3. The birth of modern physiology and psychology**

The progress in physiology and psychology through psychophysics was a reaction against the idea that mental phenomena are not the subject of experimental study and mathematical modelling. The key figure was Gustav Fechner (1801–1887). He discovered the logarithmic connection between stimulus and individual sensation (Weber-Fechner law).

With the rise of psychophysics, developments were made in the comprehension of the sensory system. Hermann Helmholtz (1821–1894) discovered the neural basis of perception. Sense organs cause equivalent experiences notwithstanding the way they are stimulated. A hit in my eye makes me "see stars" despite the hit not being connected with light.

Helmholtz also denied consciousness as the fountain of decisions; he assigned them to the brain thus undermining the idea of personal responsibility, which is the basis of moral behaviour. His suggestion of the cognitive unconscious later became a battle horse of cognitive psychology.

Wilhelm Wundt founded the first psychology laboratory in Leipzig in 1879. Another key figure was William James (1842–1910), who identified consciousness with the stream of thought. As psychology was fully established as a scientific discipline, Ramon y Cajal (1852–1934) proposed the nerve cell as the basic unit of the nervous system.

With Sigmund Freud, Alfred Adler, C.G. Jung, and Viktor Frankl psychoanalysis showed the relevancy of the unconscious. In dreams, lapses and stereotypies, in complexes and archetypes, in the loss of meaning, the Self abandons his conscious attributes as it subverts language and image codes. Psychoanalysis offers different explanations for neurotic symptoms as unconscious desires; mental illnesses reveal the deterioration of the contact between consciousness and its neurological supports.

The Gestalt psychologists studied the mental processes that underlie perception, and Jean Piaget studied the development of mental processes. The Gestalt slogan - *the whole is more than the sum of its parts* - stressed dynamic interactions in the nervous system and Piaget was instrumental in stressing the notion of development.

The introduction of information theory by Shannon and Weaver (1949) was decisive for a mathematical account of cognition. This mathematical technique allows to quantify the amount of data in a sign, the pace of data transmission through a communication channel, and the limits of a communication channel

Information theory acknowledged the brain as an instrument that can be treated as an intermodal framework for data. The main philosophical caveat is that data do not disclose their meaning. PCs transmit information; however, whether that data are important depends on whether the recipient can decipher it.

Conceiving the brain as a black box led to the development of intelligent machines. McCulloch and Pitts (1943) stated that the neuron was the basic information processing unit. Cognitive psychologists started using "box and arrow" diagrams for portraying brain processes and data transmission. The relationship between box-and-arrow descriptions and neuroscientific mechanism descriptions became a key foundational issue for cognitive science (Datteri & Laudisa, 2014).

#### **4. Contemporary Explorations of Consciousness**

A major and innovative development for consciousness research during the past decades was the demonstration of the existence of unconscious, automatic psychological processes in perception, memory, and action, the so-called *cognitive unconscious* by John Kihlstrom (1987). Most of the processing undertaken by the brain occurs without our awareness (Velmans, 1991). However, the term "cognitive unconscious" is not widely accepted. The term 'cognitive' classically referred to knowledge, beliefs, and attitudes, all key components of consciousness. A minority of scientists

follows Neisser's *Cognitive Psychology* (1967) restrain the term "cognitive" - cognitive psychology and cognitive neuroscience - to refer to what the brain does.

The imageology of mental procedures uncovered that consciousness is not a *sine qua non* condition of rational thought: inferring and choices can be made without awareness. Intelligent machines such as computers and cars without drivers prove that point. Subjects can recognize or segregate a stimulus, and that does not imply that they are aware of it.

As consciousness is not relevant to strict rationality and for many kinds of decision processes, we came a long way from the Cartesian underestimation of the limitations of the duality of mind and body. On the other side, despite unconscious cognitive processes being a game changer, that does not liquidate first-person psychology. John Eccles and Karl Popper wrote *The Self and Its Brain* (2012) portraying interactionism as the best approach to the mind-body problem. Popper indicates the existence of the three worlds of physical objects, mental objects, and conceptual objects. Each world is supposed to empirically interact with the other two. Eccles reviews clinical cases and experimental results to build this interactionist thesis on neuroscientific grounds. The unity of our experience is enclosed into a "self-conscious mind" (Eccles & Popper, 2012).

Consciousness goes beyond the basis of rational thought (Schneider & Velmans, 2007). Contemporary neurosciences map the mental activity as a brain activity and denounce *Descartes' error* but leave unresolved two major problems: the problem of *qualia* and how mental processes determine voluntary actions. The first issue, the relationship between conscious qualities (*qualia*) and brain activities was conceived by David Chalmers in the framework of *property dualism*. (Chalmers, 1996) According to him, mental properties are an irreducible and fundamental characteristic of matter, together with other characteristics that are merely physical. The second issue was raised centuries ago by Princess-Philosopher, Elizabeth of Bohemia, who asked Descartes to tell her how the mind, being only a thinking substance, could determine animal spirits to cause voluntary actions. Eventually, the philosopher admitted no definitive answer could be given (Garber, 2001).

To explain the physical manifestations of mental acts and the mind's access to external realities is the challenge of every theory of consciousness. Bernard J. Baars has developed the *global workspace theatre* scenario, a cognitive stage in which activities develop both at the conscious and unconscious level (1997).

What are the main questions of his model?

Consciousness is an information gateway to the brain. As neuronal networks operate, consciousness provides integration to specialized brain areas which otherwise would be apart. Is insight like a bright spot on the stage of memory concerned with perceptual and linguistic processing?

Consciousness and information. Up to what point do we need consciousness to interpret new combinations of words through the linguistic functions of syntax and semantics?

Consciousness and memory. Is consciousness a prerequisite to report features such as sensory inputs, rehearsal, and recall?

Consciousness and learning. As memory mechanisms operate unconsciously, there is large cortical activation during any learning procedure, while it is limited to a few areas when automatic tasks occur. Does information necessarily go through the focus of consciousness?

Consciousness and voluntary control. Consciousness seems the only way to enable higher-order cognitive functions such as problem solving and decision-making. Do conscious goals lead to the choice of conducts and ultimately, free will, the ability to voluntarily carry out actions?

Consciousness and self. Conscious input to frontal cortical areas enables the interpretation and control of behaviour. Is this the only way to build a sense of our feelings and being the author of our own behaviour?

Certainly, there are many kinds of consciousness. Nonetheless, we barely know how they are related. Are dreaming, periphery and centre consciousness simply quantitative variants of unfocused, half-focused, and self-consciousness? Or then, again, are there qualitative contrasts between various types of awareness? Could these inquiries about the assortments of awareness be replied considering the intellectual and neural associates of consciousness? Are portrayals and calculations just feasible for sorts of cognizance? Are various examples of neural action related with various types of consciousness?

What about biological markers of consciousness? This inquiry has been honed by evidence collected about oblivion and other non-conscious procedures. We know to extract information about the contrasts between awareness and unconscious procedures. Does awareness include explicit sorts of calculations and portrayals? Is it true that they are related with explicit sorts of neural action, and localized in the mind?~

How do we determine the presence of consciousness? This is a pragmatic question that confronts clinicians in therapy units and operating theatres. Is a brain- damaged patient in a coma (i.e., unconscious) or is he, instead, in a locked- in state conscious about everything that is being said, but unable to move his body? If evidence of consciousness is inferred

behaviourally, does the classification of patients into coma, minimally conscious, persistent vegetative state or locked-in syndrome reflect an underlying degree of consciousness of such patients?

To determine the presence of consciousness we must find reliable neural correlates or then, again, some method for speaking with the patient. The varieties of conscious experience most handily considered by science lie in human adults; science attends to brain conditions and its quality and appearance in events of awakening, sleeping, dreaming, and extreme lethargies, and even coma. Yet, how would we determine awareness when an elevated level of correspondence is not accessible? Neural markers of consciousness are important for deciding awareness but they do not exhaust the mystery of consciousness.

## 5. Further perspectives

Whatever analytic progress is made in scientific and philosophical perspectives, the elusiveness of consciousness remains. Some difficulties are resolved, but new ones have emerged.

We may sum up by saying that as the 19<sup>th</sup> century started – the epoch of philosophical idealism - there was little differentiation among life and consciousness; both were held accountable of vital energies impervious to experimental examination. At the beginning of the 21<sup>st</sup> century, we know that life does not depend upon a vital essence, but we are still not sure about what consciousness is.

The demonstration of unconscious processes sharpened the issues addressed by philosophical studies. Contemporary philosophical hypotheses about consciousness address inquiries such as: what kind of links does consciousness has with cosmos? How does it relate with the brain? What kind of issues can be settled by experimental research, and what can be comprehended through a philosophical conceptualization of those issues? What main models are available for our comprehension of the human being, who is simultaneously body, brain, and mind?

Contemporary philosophers of mind pay attention to scientific results, the record of neural procedures that catches the embodiment of our experience; as they start from the observation of what means to be conscious, that reality of the felt quality of our experiences makes them engage first-person issues; philosophers question our second-person conscious relationship with the world and the other.

Is conscious experience altogether dictated by the basic conditions of the cerebrum? Is conscious experience fit for causing occasions in our

cerebrums and the world at large? What is the connection between *qualia* – the felt nature of experience - and conscious states?

Philosophical investigations of consciousness attempt to locate it inside human existence. Intentional consciousness builds the world of objects through acts of knowledge: to experiment intently; to understand what has awakened our attention; to judge what we understand in our experiments; to evaluate the consequences of judgments: to identify ourselves with other people (Henriques, 2010, 2016).

Neuroscientific investigations of the psyche are centred around the cerebrum equipment ("wetware") that epitomizes mental procedures; and neuroscientific investigations of cognizance focus around discovering its neural causes and correlates.

Neuroscientific research has two major obvious philosophical implications, namely for ethics and for legal responsibility: 1) the extent to which the qualia of consciousness are determined by the functional relations of particular brain areas to activities in the external world 2) the free will problem that asks if deliberate activities are controlled by cognizant decisions or by preconscious mindsets.

In social psychology there is a re-established enthusiasm for exploring how individuals behave in various social circumstances: through subjective strategies and quantitative techniques. Studies of perception, cognition, emotion, for example, rely to some extent on subjective reports - verbal reports, overt response, filling out a questionnaire.

First-person examinations of awareness deal with how one can explore conscious experience, an issue that concerns psychologists but that cannot be eradicated from philosophy because there is no consciousness without language. Consciousness expresses itself through language which is a set of meanings transmitted by words. The identity between reason and language resides in the *logos*. Each language is a set of meanings shared by humans. Speech is the individual use of language through which the subject recognizes himself, understanding concepts and realizing relationships. Language, besides conceptualizing our experience through general and abstract (Datteri & Laudisa, 2014) names, contains the pronouns and indicators of subjective spatial and temporal relationships generated by the relationships of the self with others which bring us to the second-person level of research of the mind.

I presented a short overview of contemporary consciousness' studies. There is another fundamental word of consciousness that was not focused here, that is, recognition. Recognition originates second-person studies based on the *I-thou* relationship. Objects are intentionally

apprehended, but beings are existentially recognized. We want to know the world, and the world wants to be recognized. We relate with beings that are more than mere objects as they manifest themselves outside the chain of causes and in reciprocity with us. Consciousness is relational because the other brings us into a common reality.

Encounters or acts of recognition result from relationship in consciousness and originate the ethics of human dialogue, the aesthetic of creation and enjoyment of art and the epiphany of celebrations. In these encounters it is as if, suddenly, we listened to the music to whose score we had no access and of which until then, we had only heard loose notes. Our discoveries, decisions, revolts, loves, struggles and reconciliations are thus born. The narrative of such celebrations, the feast day of consciousness, would require a new paper.

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