

Dialogic Consciousness; What about the Creative Relationship?

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Abstract

This article aims to explore the dialogical dimension of consciousness, centred on the experience of creative relationship. It identifies contributions from neurosciences disabling dualistic and materialistic theories of consciousness and solving what David Chalmers identified as the easy problems. Mental experiments reveal the permanence of subjectivity, the difficult problem posed by the intrinsic nature of consciousness. As subjectivity seems ascertained by striking parallels between mental and quantum processes, it experiences creative relationships that go beyond its integrative capacity. The exploration of this variety of experiences that link the macro world of the 1st person to the micro world of the 3rd person disclose that consciousness and reality are mutually constructed through creative relationships. Such dialogical dimension introduces new difficult problems requiring further research.

Keywords: *Brain; Consciousness; Creativity; Dialogic; Relationship; Subject*

Situating consciousness

Contemporary neurosciences have given us good reasons to believe that consciousness is not an immaterial reality as it is rooted in the physics, chemistry and biology of the brain. To obtain a conscious system, we need physical matter out of which, once consistently ordered, consciousness will raise. And yet, among neuroscientists, no consensus emerged on why consciousness' states correlate with physical states; the correlations remain irreducible to the material structures in which they occur. The analogy of consciousness as a software that runs on the hardware of the brain is of little use to us; with same good reasons it could be argued that consciousness is the structuring element (hardware) in which the neurological relationships occur (software) [1].

Science has taken giant steps in researching complex and equally intriguing entities, such as dark matter, origin of life, evolution of viruses. A better understanding in these areas will be obtained through better instruments, better experiments and new laws extracted from existing data as science masters its concepts and research tools. Apparently the same is true of neurosciences. A world of difference separates us now from what we knew about the human brain decades ago. Through experiments and neuroimaging, we have increasingly sophisticated maps of types of conscious experiences that depend on physical states of the brain. We most certainly know a lot about high levels of integrated information (Giulio Tononi) how messages expand on the brain (Bernard Baars), how 40 hertz oscillations generate states of mind (Francis Crick and Christof Koch) how impaired brains disclose secrets about its functioning [2,3]. The brain collects and processes information. It develops biochemical and physical processes. However, the multifaceted phenomenon of consciousness, with broader and restricted definitions, is much more intractable than one would think as it implies subjectivity or experience, which David Chalmers designated the difficult problem [4].

In this article I want to highlight an intriguing aspect that adds a special chapter to the unsolvable problems in which philosophy has specialized: creative relationship as a characteristic of conscious being that expands beyond the human individual mind. Such dialogical dimension played out in the experience of relationship requires a 2nd person's theory of consciousness that surpasses the scale of human individuals.

The theory of integrated Information

As science knows, we can perform experiments because we have conscious experience of the world around us. Now, an animal that feels immediate pain or an instinctive impulse or desire, despite having no reflection does he have consciousness? And a plant that moves towards the light to obtain photosynthesis? Where does consciousness begin and end? We are entitled to ask such questions because no scientific answer is satisfactory.

Maybe we can gauge the degree of complexity of consciousness according to the amount and type of information it uses to create a model of itself. Machines such as a thermostat or a photoelectric cell use a single information circuit to create models of themselves. The artificial intelligence in a robot or a digital computer is exponentially much more complex, but hardly qualifies for awareness [5].

In the macro world that surrounds us, plants have multiple circuits of information about factors such as water, temperature, gravity, light. About living beings and starting with protozoa, says H.S. Jennings about W.H. Thorpe's study of animal behaviour: If the amoeba were a large animal, to the point of emerging in everyday human experience, its behaviour would endow it with states of pleasure and pain, hunger and desire and the like, exactly on the same basis that these realities are attributed to a dog. Or, according to Thorpe, the behaviour of a sea anemone is much more complex than is supposed. It has spontaneous movement and elaborate apparently purposeful activity patterns ([6], p. 44-45). Animals such as insects and reptiles have information circuits to determine the spatial coordinates of partners, rivals, and prey. Social animals like mammals have information related to the group they belong to and the hierarchies they live in; higher mammals live deep emotions. And thus, we come back to us, human beings, who, in addition to the previous degrees, do possess the consciousness of ourselves, self-awareness or cogito, the power of the daimon, soul or spirit.

Giulio Tononi's Theory of Integrated Information (TII) is an interesting step in neuroscientific studies by correlating consciousness with information integration. The proposal is for a mathematically exact formula - called " ϕ " - to define the amount of information in a physical system; it is also a measure of consciousness with three relevant resources. The TII presents what information a system, human or not human, has about itself. Integration measures how much information in a complex system depends on the interconnections between the respective parts. It indicates that a system is even more conscious as it contains a maximum of integrated information. It also explains why deep sleep does not imply awareness, despite normal levels of brain activity ([3], p. 163-168).

Information integration is such a basic feature of experience that most do not even realize it exists. What is a pine? The brain integrates information about the characteristics of that kind of tree in different locations, with a map of different characteristics and a general location plan. Once the general map is composed, attention takes over, looks at the general plan and we see the pine. This integration of information - from most elementary to most complex - is what allows experience, capturing of objects, a sense of being (personal identity or subjectivity) and personal will or decision (intention) - in short, the characteristics of life. Nevertheless, the TII only offers correlations between physical states and states of consciousness; it does not solve the difficult problem of consciousness that persists despite progress in the knowledge of physical and neurological details.

Neurosciences and dualistic and materialistic theories

The progress of neurosciences has contributed to refute two unilateral doctrines: a) naturalistic dualism, that is, the division between physical objects with mathematical properties and incorporeal minds with conscience; b) materialism, which considers consciousness as an illusory phenomenon that cannot resist physical explanation.

According to dualism, it is the mind, not the brain, that thinks and feels. As a natural attitude, it is embraced as faith by most cultures and religions. Philosophy graduate students learn that René Descartes was the most famous dualist. If they study the suggestions, in his correspondence with Princess Isabel of Bohemia, of how mind and body interact, they understand that he was not a dualist. And if they investigate further, they will see how Descartes created the agenda for modern theories of consciousness. The dualism that opposes minds and physical things is no longer scientifically acceptable because science does not show evidence of non-physical forces influencing the brain.

For a materialist, the subjective internal world of experience is explained in terms of brain chemistry and physics; one day the final puzzles will be unravelled and consciousness explained away as an illusion or derivation (Dennet, 1991). The predominant view of monism is physicalism (or materialism): everything is made of physical matter. A complete description of reality leaves nothing out. And yet, any physical description of a conscious system, like the brain, leaves out the difficult problem of consciousness: it does not capture the system. It captures objective aspects, but not subjective ones: it captures brain function, but not mental life.

Some mental experiments

Most philosophers reject dualism because science has shown it to be false. On the other hand, first-person experience, revealing the difficult problem of conscience, leads to the rejection of monism. In this domain, the Australian philosopher David Chalmers created an essential distinction in the 1990s. He considered that theories that explain the behavioural manifestations of consciousness deal with easy problems. The difficult problems of conscience, on the contrary, affect the subjective inner world that each one knows as his own. To explore how brain activity originates experience - emotions, sensations, decisions and further qualia - philosophers have developed a variety of mental experiments [4].

In "What is it like to be a bat?" Thomas Nagel claims that an organism has conscious mental states if, and only if, there is something that is like being that organism [or its point of view]. While physics aspires to what he called The View from Nowhere, consciousness is subjective, because the knowledge of a certain state of consciousness implies the adoption of the perspective of someone who owns it [7,8].

In the argument "Black and White Mary, created by Frank Jackson, we are dealing with someone who has always lived in a black and white room and who learned everything that neuroscience could teach about the experience of colours, but without ever having seen coloured objects. The narrative has a happy ending. One day Maria leaves the room and, for the first time, sees trees, houses, vehicles, the sky. She learns what colours are. And that is all. Neurosciences do not allow a complete theory of experience with colours because, by definition, they eliminate subjective qualities [9].

Robert Kirk created the so-called zombie argument about the association between conscious thinking and the physical world [10]. Zombies behave like ordinary human beings because the functioning of their bodies and brains are indistinguishable from those of an ordinary person. But there is a crucial difference: they are not aware. The processes of "zombification" find an equivalent in the massification of opinions, brainwashing, loss of critical sense, apathy, and emotional insensitivity. Ultimately, they lead to the annihilation of reasoning and emotions, injuring humanity itself in our inner selves.

The zombie argument is a way of demonstrating something obvious. To describe a person in terms of his physical nature is to attribute quantitative properties to him. Describing it as conscious requires considering first person aspects, and qualitative properties. A physical system with the first type of properties does not necessarily have the others. This is the heart of the problem of consciousness that contemporary materialism refuses to face.

According to Alan Turing, thinking is computing. In other words, to think is to pass a test in which a computer would be able to pass itself off as human, to 70% of the judges in a five-minute conversation. Roughly speaking, a task is computable if it is possible to specify a

sequence of instructions that will allow the task to be performed by a machine. According to Turing in 1953, by the end of the 20th century there would be machines capable of passing this test.

John Searle designed the mental experiment of the “Chinese Room” aiming to show that even the most powerful computation does not equate to human understanding [11]. Imagine a room where there is someone who does not speak Chinese but who has papers with Chinese characters and an instruction manual telling him which character to use for “exit” after receiving an “entry”. Outside the room there are Chinese speakers who ask questions. The Room tenant receives these “questions” and looks for the correct answers in the manual. If this is well done, he simulates the responses of a native Chinese speaker, blindly following instructions; yet he does not know Chinese. The experiment shows that passing the Turing Test is not synonymous with thinking. A parallel example is that of automatic language translators created by artificial intelligence. Notwithstanding extraordinary progresses in this area, there are intrinsic limits arising from the structure of language obvious in garbled translation of metaphors, and poetic language in general.

These and similar mental experiments expose irreducible characteristics of human consciousness: subjective (I only understand my conscience if I can adopt my perspective); qualitative (consciousness implies qualities); free agent (there is mental causation). Awareness is made possible by nerve connections in the brain; but the intrinsic nature of consciousness cannot be identical with higher brain functions: it must be sought at a level of reality more elementary than that of the brain.

Subjectivity and quantum processes

The singularity of subjectivity has aroused the attention of physicists, leading them to draw parallels between mental and quantum processes. In 1939, Fritz London and Edmond Bauer suggested that consciousness played an essential role in quantum mechanics since physical structures need intrinsic observers. David Bohm drew attention to the striking similarities between conscious and quantum processes. Human thinking begins by being fluid and indeterminate until logic helps it to structure and focus; the laws of physics describe a world of distinct objects through cause/effect relationships that overlap with quantum indeterministic processes. Without logic there would be no clear thoughts. Without physical limits that cause waves and particles to collapse, there would be no solid macro world: life, as we know it, would be impossible if quantum theory did not have the classical limitation; and thought, as we know it, would be impossible if we could not express its results in logical terms ([12], p. 70).

In 1961 Nobel Prize Eugene Wigner wrote: When the domain of physical theory extended to microscopic phenomena, through the creation of quantum mechanics, the concept of consciousness came to the fore again [13]. According to Eugene Wigner and John Archibald Wheeler human consciousness is the missing link between the bizarre world of photons and bosons and the reality of everyday life, a vision developed in the 1990s by physicist-philosophers like Danah Zohar, Henry Stapp and Roger Penrose, the latter awarded with the 2020 Nobel Prize in Physics.

The dialogical relationship between quantum and mental processes has been a useful tool to overcome dualism and materialism. In classical physics, movement is a familiar concept of the way things move. An object takes time to move from one point to another and only begins its journey in space due to the cause-and-effect relationship. This is the basic way in which we perceive the events of the macro world of perception. Instead, in quantum physics, in Ian Aichison’s expression, there are packages and jumps. Max Planck proved that energy radiates in individual packets which he called quanta and not in currents over a continuous spectrum. The leaps arise in what Niels Bohr demonstrated to be the passage of electrons from one energetic state to another, through discontinuous leaps, whose scale depends on the amount of energy they absorb or release.

In the orthodox formulation of quantum mechanics, by John von Neumann in 1932, there are two principles of subatomic behavior: the equation of indeterminism and the postulate of collapse. What difference is there between the situations in which the Schrödinger

equation governs indeterminism and those in which the postulate of collapse sends? That is the problem: apparently, it seems to depend on what is observed.

Everything the observer sees can be described by the equations of quantum mechanics, except the observer himself. There is no equation to define observers, human or not. They are outside the quantum system. But if physical entities are particles, fields, space-time, and forces, how can observers be so fundamental? There is only one answer. According to dualism, conscious or observant minds would be basic characteristics of the world, as fundamental as photons and bosons [5].

Philosophers reject dualism because of the problem of interaction: the difficulty of understanding how the mind impacts the physical world. But as David Chalmers observed: if we want a scientific theory that makes room for the conscious mind to play a fundamental role, nothing better than quantum mechanics [14].

Quantum mechanics is essentially a mathematics that allows us to predict with great precision what will happen in the physical world. We know how the 3rd person micro world works: we run the equations and find out what is going to happen. However, no one really explains what a superposition is, although we can think of it as an assertion that reality is probabilistic [15].

Even more difficult to accept in quantum mechanics is the transformation of a superposition into a non-superposition caused by the observation. One way to escape the problem is to imagine multiverses, as Michio Kaku intends, a scenario that eliminates the need for the collapse postulate. In multiverse theory, all possibilities continue to exist in separate branches of reality, an admission that goes against the principle of emerging probability, which is perhaps the most parsimonious explanation of the universe [16].

Creativity - Ideas and wet sand

The predominant scientific culture has a great deal of scepticism - or perhaps a better word is perplexity - about the contribution of philosophers to the project of discovering the nature of reality. In their controversial book *Every Thing Must Go*, James Ladyman and Don Ross criticize the pseudo-scientific metaphysics of fellow philosophers. In *The Grand Design*, Stephen Hawking and Leonard Mlodinow declare that philosophy died because philosophers were unable to keep up with mathematical developments in modern physics [17].

Rather than directly contradicting Hawking, it is more curial to indicate that collaboration between sciences, humanities and philosophy was created to overcome mutual limitations and shortcomings. Both physicists and philosophers claim the relevance of quantum processes to situate the reality of consciousness, and they go further than that. Our individual thoughts and emotions, as well as our conceptions and doctrines elaborated in community, are the result of millions of years of evolution by natural selection and of thousands of years of cultural choice; none of this is explained by the activity of subatomic particles. By accepting that consciousness is the bridge between the world of everyday experience and the world of microphysics; and that consciousness and matter are realities with a common origin in the world of quantum events; then, we accept that the laws of physics reflect the fact that reality presents itself as a relationship, a sum of correlations: with us, others, and the world. The physical element (matter, energy) is related things, and the mental element (consciousness, mind) is the relationship that exists. Still, it remains to be explained what triggers the relationship, and that is why a theory of dialogical consciousness may be helpful.

Let us imagine a mental experiment, adapting observations of Danah Zohar (Zohar, 1995). When a child makes a construction with the wet sand of the beach, it gives shape and meaning to a novelty. It brings together an idea that has not yet been manifested and a collection of molecules and transforms them into a new thing, which is the relationship between the idea and the wet sand. The relationship is a manifestation of creativity. The child's act created a new thing.

The process by which the child shapes the sand is a sequence of dialogical decisions. First, the idea to draw it, be it a face, a star, a fish, whatever. Then the successive operations of shaping an object, kneading it a little more here, rounding it up a little more there. Very

simple realities like buildings in the sand, or the first drawings of a child, or stacking cubes, reflect this dialogue. The same dialogical construction occurs in the adult inclination to do-it-yourself hobbies, home decorating, applying cosmetics, following rules of etiquette, and many other procedures of everyday life. This same creative trend, as developed by high culture, leads to scientific research, writing poems or symphonies, and inspires new religious views, creating what was once called the world of spirit. The dialogical principle is present as well in the use of art and music as therapy for adults; planting a tree, weaving a basket, painting a picture, or writing a song, are forms of creative self-discovery that enrich existence.

Creativity as it occurs in everyday life and in cultural life corresponds to a broad sense of awareness that is at the origin of our moral sense, our aesthetic sense, and our noetic and religious sense. Its exercise characterizes how community identifies itself in ethical codes, art styles, and religious cults, all of them necessarily plural. A creative morality incorporates as an important characteristic the fact that in response to a moral, an aesthetic or noetic challenge there may be several choices that are, to some extent, good choices. It is characteristic of human freedom, linked to the purpose of creativity, that we can experience these possibilities until we discover the best possible. Consciousness is dialogical because it gains existence from the creative relationship with other subjects and objects, both individually and in community.

Moral challenges

We can illustrate the creative relationship by the way we respond to moral challenges. The very concept of moral challenge - or morality - is a relationship created in response to the need for guidance in society; it is an attempt to order the potential chaos that can arise from the range of possible behaviors, resulting from free human action. To produce this order, we create morality, a new dimension of conscience that expresses the joint decisions of members of a society or group. And we rightly blame those who shy away from it in the name of duties, habits, or social conditioning. We blame ourselves for not trying, for fleeing the burden of responsibility, thus failing to opt for creativity stemming from freedom. Each of us helps to write the moral code of society, especially in times of crisis and moral challenge. It is when I articulate values that trigger a fundamental decision that I become a person, that I assume a character. And as I discover myself creatively in that way, I also discover the values that I nurture. My conscience brings these values to the world, thus giving new meaning to values. In this way, I help to create my world and the world of others.

We can debate whether these values that relate to private existence and the world that we have made are absolutely subjectivist. In Sartre's existentialist morality, it is each self, alone, and terrified by the frightening fact of unavoidable freedom, who creates and maintains values, without foundation beyond a being which is nothing. But in the dialogical perspective, creation is never *ex nihilo*. The values I create are not produced by me but are found in dialogue with others. My choices are not made in isolation nor do they emerge disconnected from the personal situation. On the contrary, creation is dialogical: my world is what I share with the world of others in relation to which I define myself. Hence the emergence of varied communities, families, social groups, nations, humanity. According to the intrinsic nature of consciousness - we are our relationships and our world is such that we create it in common with inherent conflicts.

Creating lifestyles

As conscious beings, with a set of needs for integrating experience, we produce objects that fulfil different purposes. With the most diverse ingredients, shapes and textures, we develop an aesthetic sense to food, clothing, furniture, housing, urbanism; we develop a sense of proportion and express hospitality with a sense of home. We look for a society with a common good, a common home, until we are confronted with projects in collision with ours, as clashes and violence arise that force a community to settle on through pacts and commitments.

These human needs that we call “lifestyles” are built through integrated systems. Our appraisals of artefacts and the habits that we extract from them derive from a creative relationship. As much as the body needs to change and grow in response to his environment, so consciousness expands from original data, trying to manage inevitable conflicts with agreements.

There is an on-going dialogue between us, the world around us, the environment, and artifacts. The material things that we integrate in our world contribute to stimulate us. When we judge the merit of an artifact, when we say that a meal, a garment, a painting, a room, is good or bad, we want to know more than the functional need it fulfils. We want to know if it reflects our nature and highlights our world. This need, which we call aesthetics, relates to the full sensation of the object, the feelings it evokes and values, such as beauty, grace, harmony, measure.

The aesthetic effect can be imparted upon everyday objects. A hammer just arrived from the factory is the same as all others; but if it has a wooden handle, it gains the imprint of the hands of those who use it. A new leather shoe can be beautiful if it has a good design. And if it is made by hand, but it only reaches its fullness as an aesthetic object after being used and sculpted by the user's floor and lifestyle. Then it becomes a suitable theme for a painting. Through Van Gogh's famous painting of the peasant's shoes, we enter the peasant's world, we share his relationship with the environment, with other peasants and popular traditions. We gain such awareness because the individual mind is porous, and consciousness is permeated by otherness.

Creative relationship, dialogical consciousness, runs through our history and culture. We see ourselves as craftsmen and date the origin of humanity from the time when we created the first tools. We are attracted to antiques because they reveal a part of past worlds and those who used them. We feel that creativity distinguishes us from beasts. In religious terms, creativity has been considered the *raison d'être* of human existence. The issue arises, for example, in Jewish mystical tradition, which states that god created man as he needed a partner in creation [18].

We recognize that it is creative to face a new challenge, to establish a new relationship, to open a new path. Such activities stimulate us and make us grow. When we do not feed them, we feel bored or stagnant, or even diminished - hence the references to the dehumanizing effect of routine jobs and of bureaucratic organisations. To alleviate such boredom, we invented challenges in sports and games that allow free enterprise. Competition can degenerate into conflict, and even chaos and is why we create law and order systems.

Creativity and life

The phenomenon of dialogical consciousness is not a human exclusive; what is exclusively human is the phenomenon of integrative subjectivity. Thus, to what extent can science establish the conditions through which such relationship expands throughout all levels of reality? Is there in the structure of systems - from virus to man - an intermediate order between the monotony of routine things and the disturbing turmoil of chaos? According to Ilya Prigogine [19], Nobel Prize in Chemistry 1977 and his theses on open or dissipative systems - including living systems - living order manages to feint the second law of thermodynamics, according to which everything in the Universe would be deteriorating or falling into disarray.

The creativity of living systems and the type of order they create is not a tidying operation, but the creation of relational units, larger than the sum of the parts. Prigogine speaks of self-organizing systems. The amoeba's life is more than the combination of hydrocarbon atoms mixed with salt water; the human body is more than heart, lungs, kidneys; it is a new and orderly whole that grew out of the relationship between the parties. The same point is made by Bernard Lonergan in his theory of emergent probability [16,20]. This ability of living systems to spontaneously build orderly relational wholeness rests on shared creativity and corresponds to an emerging probability principle. At the level of living systems there is evidence that biological evolution may be a reactive evolution, a dialogue between the creature and the environment, with the ability to select and carry out one of the many possible directions of evolution (mutations) latent in the DNA code [21].

Inconclusive Remarks

The dialogical dimension of consciousness allows us to see ourselves as an integral part of the universe. However, such perspective has yet to be consolidated in two opposite directions, determined by the integration and the creativity problems. As we ponder them we must consider that reality is not what is there out now, but what is discovered through insight, as ascertained by Bernard Lonergan [20]. Whatever we call reality, it is only revealed to us through an active construction in which we participate, thus much says Prigogine ([19], p. 293).

As we ponder what physics tells us about the brain, we find a set of theorems that prove the existence of relationships. These correlations constitute, indeed, an unavoidable software system, with unique qualitative properties. Consciousness is, perhaps, the only kind of reality where quantum-type physical processes of the brain can occur. Now, if physical structure needs an intrinsic observer to happen, perhaps it is because the brain has intrinsic properties which in man assume the configuration of the subject but extend to the whole of reality. This concept that intrinsic properties are necessary to distinguish the real and the concrete from the mere abstract structure is independent of consciousness [1].

In another direction of research, it will be necessary to investigate how consciousness, rooted in creative dialogue, articulates with what cosmologists call the anthropic principle. John Archibald Wheeler's version, called the participatory anthropic principle, says that observers are needed to bring the world into existence [22]. Other versions propose a range from the one that states that the Universe resembles what it seems to us, because we are the ones who contemplate it, to more religious arguments that an intelligent life like the human being had to arise from the expansion of the universe. In our dialogic consciousness approach, the observers are not isolated individuals, but we, the community of existing ones, with all their resources and limitations [23].

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