

The Problem of Consciousness: The Experiential Approach of Luigi Giussani and the Foundation of the Conception of Consciousness in Neuroscience

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Abstract

The relationship between consciousness and brain, subject and body, appears today far away from being elucidated. All attempts to reduce consciousness and subject to the brain end up abolishing the subject, i.e., what is evidently most relevant for each one of us. Luigi Giussani proposes a method to investigate human consciousness based on the analysis of oneself personal experience, verifiable by every human being. He is very attentive to avoiding during the experiential analysis interference of prejudices, ideological conceptions, and conjectures. His method remains perfectly coherent and open to all contributions from neuroscience and scientific discoveries. He leaves completely open the major question about the relationship between brain physical-chemical functioning and subjective experience, individual consciousness. A comparison between Giussani's method and the starting point and the fundamental assumption that lays the basis of various modern neuroscientific conceptions of consciousness is conducted. A discussion about the assumption that stays at the basis of the various neuroscientific currents appears necessary and the method proposed by Giussani may constitute a common and acceptable by everyone background for future development and advances in studying the greatest problem of our culture, the relation between brain and human consciousness.

Keywords

Consciousness, Experience, Reductionism, Giussani, Phenomenical

1. Introduction

What is consciousness about? From where it comes? And, even more myste-

rious, which is this surprising indissoluble binding between consciousness and a concrete body, and brain? How can subjectivity emerge from neuronal nets? Are there in the world other consciousnesses like ours? As McGinn says, understanding consciousness represents the next great phase of human thought.

Properly defining consciousness is difficult. Clinical neurology has developed the concept of alertness or waking state (as opposed to sleep and coma) as that condition in which things and we are present to ourselves; we recognize things and ourselves. It certainly does not escape to anyone that such a definition is tautological and refers to the concrete experience that we have every day, that of awakening in the morning from sleep by regaining consciousness after the night break. Moreover, it is immediate to understand that we must use our conscience to seek a definition of the same. Such a definition is broad enough to contain the minimal, fundamental condition of consciousness, which is vigilance and also the ultimate implications of the conscious state, which is to grasp the meaning of ourselves and things and, therefore also the links of things with each other and with the whole (“becoming aware of”).

The theme of consciousness has been at the center of modern culture since Descartes codified it with his famous statement: “*cogito ergo sum*” (I think so I am), imposing in the philosophical debate the term consciousness instead of soul.

According to the philosopher of mind Colin McGinn, for about a century, in the field of scientific research applied to man as a subject capable of knowledge and complex behavior, consciousness has been a subject comparable to sex in Victorian England: everyone knew what it was, but rejected it because it was not a topic suitable for polite conversation or relevant research (McGinn, 1999). For their part, neurophysiologists did not consider it necessary to recognize the legitimacy of consciousness: they thought of the brain as a closed physical system, a complex of neurons with their biochemistry, and consciousness as a pure function of the brain as well as digestion is a function implemented by the digestive system. Even theories of mind that are based on computer science leave no room for consciousness because computers can carry out the operations of analyzing information in the absence of awareness. Only in the 90s the problem of consciousness reappeared on the scene. “Philosophers became less ready to admit that a difficult philosophical problem (such as consciousness) could be considered a mere conceptual confusion” (McGinn, 1999), while neuroscience enthusiasts began to build connections from the neuronal to the mental and to recognize that the brain is the seat of consciousness. At this point, once consciousness has been admitted as a peculiar phenomenon within the natural world, it is necessary to find a place in the interpretative scheme of the current world and to explain its nature. How does consciousness fit into the scientific framework of the world built so laboriously since the seventeenth century? How is it related to a physical world consisting of atoms, space, and force fields? How can the brain introduce consciousness into existence? Disturbing problems arise once one ceases to deny the existence of consciousness. There was a reason for the long ostracism of conscience: consciousness is threatening. It appears as an anomaly

in our conception of the universe; it is a condition where our scientific mental models of understanding seem no longer valid. How can, McGinn asks, an objective science of nature, which studies particles and their ways of aggregation, find a place for the subjective phenomenon of consciousness? How can brain cells generate the subjective experience of seeing red or the emotion of despair? McGinn believes that the renewed interest in consciousness represents the next great phase of human thought.

Luigi Giussani is the author of a great number of books. His most famous book is “The religious sense” (Giussani, 1997), which has been translated in so many languages all over the world.

In Giussani, the term consciousness is not explicitly thematized. The author uses above all the words “reason” and “experience”, but together with them, we also find “elementary experience”, “consciousness”, “self-consciousness”, “intelligence” and, at least sometimes, Giussani assimilates them with each other. Moreover, while some authors have dealt with the use of the term experience (Borghesi & Giussani, 2015) and others of reason (Esposito, 2011) in Giussani, no one until now has dedicated himself to analytically examining the use he makes of the word “conscience”.

In this paper, I wish to focus on what is the starting point, the foundation and what are the steps of carrying out a discourse that can ensure a clear and reasonably founded examination of what consciousness is, this unique and amazing characteristic that emerges in our species homo sapiens as we now live it. Focusing in particular on the fourth chapter of “The Religious Sense”, I will therefore conduct a comparison between the articulated and reasonable path proposed by Giussani of an experiential investigation of consciousness and the main starting points of authors, philosophers of the mind and neuroscientists, who examine the problem of consciousness and seek a foundation on which to build their analysis. I shall briefly examine the basic conception of consciousness of the main scientific currents starting from Behaviorism and focusing on well-known neuroscientists and philosophers of mind. In the end, I shall face and discuss the tendency to a radical reductionism that dominates the mainstream today.

2. Giussani’s Starting Point for the Investigation on Consciousness

As can be seen from the title of the book “The Religious Sense”, the theme is not directly consciousness. However, as I hope it will become increasingly clear in the following, it is continually taken up and presupposed. In that book Giussani, in fact, states: “The religious sense is reason’s capacity to express its own profound nature in the ultimate question (that is: who am I? which is my origin? The origin of the world? Etc.); it is the ‘locus’ of consciousness that a human being has regarding existence. Such an inevitable question is in every individual, in the way he looks at everything, it is the locus of the consciousness that man has of existence” (page 56).

Already from the first pages of that text Giussani says, “By reason, I mean the

distinctive characteristic of that level of nature that we call man, that is, the capacity to become aware of reality according to the totality of its factors” (page 13). And further on, he writes: “Man is that level of nature where nature itself becomes conscious of itself, that level of reality where reality begins to become aware of it, begins to become reason” (page 25). And again: “we are made for truth, and truth is the correspondence between reality and consciousness” (page 34). Finally, almost focusing on the core of consciousness: “Those questions constitute my personhood. They are identified with my very reason and consciousness. They are the essence of my self-awareness and their resolution has to touch me; it directly concerns me” (page 76). Reason and conscience are often assimilated: “Authentic religiosity is the defense, to one’s last breath, of reason, of human conscience” (page 72), resulting in this masterful synthesis: “Personality emerges as consciousness of a meaning which permits possession and places all aspects of what we meet in relation to their meaning.” (page 85).

From this whole series of quotations, it is possible to grasp how in Giussani the term consciousness indicates the ultimate and characteristic core of the human being.

In this sense, the theme of the religious sense has to do with the ultimate nature of man, with his ultimate structure within the world, with the ultimate questions that constitute the core of consciousness. And it is within this horizon that the method of his investigation also emerges. He does not invoke any divine, supernatural revelation and on the other hand, he does not even start from a philosophical argument, nor from his own preconception, or from an intellectual construction.

The starting point is identified with absolute clarity: since consciousness is personal and emerges, manifests itself within the experience of each person, the only way to get to know it is an existential investigation conducted personally on oneself. Any person who wants to know what consciousness is must conduct an existential analysis of himself, on his own conscience, on pain of alienation.

But Giussani is not satisfied with this clear statement and warns us that the expression starting from oneself, from one’s own experience, can be equivocal because the person is inclined to start from his own idea of himself rather than from himself in his own concreteness. And, then, Giussani explains that it is necessary to observe oneself in action, in experience, because only there will the constitutive factors of the person be provoked to emerge as they really are.

But even at this point, Giussani is pressing us. Action must be part of a commitment to the total reality of life and things: exasperated commitment to some aspect of reality risks becoming a mania if it is not experienced as a derivation of a global commitment to life itself. “Being involved with life ... is never partial” (page 37); man must measure himself with the totality of the circumstances in which he lives, perhaps then to change them and look for others.

At this point, Giussani introduces two fundamental aspects of a commitment to total life. The first is tradition. The term is typical of Christian culture, but we can also read it in its implications with respect to the individual conscience. This

observation highlights a fundamental condition of the conscience of the single person. To be formed, it requires a long journey, which begins during uterine life, where the child already receives stimuli from the mother and the outside world and then passes through the life of the family inserted within a certain socio-cultural context, exposure to a certain language, within certain climatic and landscape conditions. The individual conscience is unthinkable, it could not even be formed except as an evolution and maturation within a certain historical, socio-cultural context which in any case determines its face, constituting the background on which the conscience of the individual flourishes.

Studies of cultural and social anthropology, conducted on primitive populations that came into contact only in recent years with Western culture, have highlighted the importance of collective consciousness (Levy-Bruhl, 1996; Durkeim, 1967). In primitive life conditions the individual has very little chance of surviving. His belonging to the group, to the clan is a decisive factor in his life and for the awareness he has of himself and the environment. But even in advanced societies there is no possibility of clearly separating the individual conscience from the collective one: "The patrimony of certain ideas, of certain customs, of certain feelings, is integrally collective and shapes the individual consciences that are subjected to the pressure like a mold." (Cantoni, 1963).

The second fundamental aspect, according to Giussani, of man's commitment to reality is the value of the present. He emphasizes that it is only in the present moment, in this apparent nothingness, that man's freedom is played out and operates. Only there do the constitutive factors of the human really emerge and only there can they be surprised by the experiential investigation. Starting from the present it will then be possible to confront all the richness of the past and imagine future paths. Dan Lloyd in an article where he outlines the characteristics of consciousness in order to possibly grasp its expression, the "signature" in brain activity, defines one of the fundamental and peculiar characteristics of consciousness as "superimposition" (Lloyd, 2002). Consciousness has in fact the characteristic of operationally uniting in the present moment the totality of past experiences and future aspirations and projects, to make the person more equipped and adequate to face the present reality. Lloyd tries to apply a statistical analysis to a series of functional brain magnetic resonance imaging experiments conducted on various cognitive functions to highlight a possible hidden variable, namely consciousness, which unites all the cognitive activities of the human mind. The result is negative, but the author claims the goodness of his methodological approach.

Only after this methodological clarification, Giussani carries out the experiential investigation of himself and invites everyone to do the same. Since experience is an eminently synthetic and comprehensive way of knowing reality, it allows Giussani to immediately introduce the crux of the matter in a synthetic way: the person finds himself constituted by two types of irreducible realities. The first evident aspect of human experience is that we are made up of the material reality of our body. Giussani identifies the characteristics of this material reality: 1) it is

extended in space and therefore measurable because it is divisible; 2) it changes over time, evolves and also corrupts to the point of dissolving (page 40).

The second fundamental constitutive aspect of the person is represented by a reality that Giussani calls non-material or with traditional terms spirit, soul. Non-material reality is characterized by the absence of the typical characteristics of matter. It is a reality by its nature that is not measurable, not divisible, not changeable over time and therefore radically distinct and irreducible to the material factor. Giussani strongly emphasizes that these two realities, constitutive of the human subject, are not reducible to each other: every materialist attempt to reduce spirit to matter and every spiritualist attempt to reduce matter to spirit contradict the experience that shows them irreducible even if inseparable (page 40-41).

Giussani then poses a corollary, surprising for the modern mentality, which in traditional Christian terms goes under the title of immortality of the soul. Giussani in an extremely original way does not invoke Christian revelation here, nor even a philosophical argument; coherently with the method he is following, he reads in the experiential data the emergence of a reality that is by its nature not subject to time and corruption. With great biological precision, he identifies the “death” phenomenon as the moment in which the organic unity of a living body ceases and its parts, the molecules, the elementary particles that compose it begin to separate until they are completely dissolved. Instead, the mathematical truth, the principles of Aristoteles’ logic, the innate capacity to distinguish between the real object and a mental representation of the object are clear examples of something that will be so forever, not subjected to the corruption of the time. So, the experience shows that there is a part of ourselves that goes beyond time (page 41-42).

It is very interesting to observe here that Giussani does not put forward hypotheses of explanation, he does not claim to find the solution to the problem of how the two irreducible factors combine together in the unity of the person; it limits itself to the relief of what is given within the concrete experience, it leaves the adventure of understanding open.

3. The Starting Point for the Investigation of Consciousness in Neuroscience

It should be noted that a great variety of positions and conceptions regarding consciousness are encountered in neuroscience. What we want to put on the subject here, however, is the starting point of the various conceptions. The conclusions and contributions of the various authors largely depend on the choice of this foundation.

One remains, however, surprised by how little the starting point is questioned in the works of the majority of the authors. It represents the foundation from which other positions are criticized, often without a critical analysis being carried out on the starting points of the concepts under discussion. We believe that it is exactly this, namely the unavailability of questioning one’s starting point,

that constitutes one of the greatest difficulties in the current neuroscientific debate (Savoldi et al., 2013).

The first scientific study program of man as such in its entirety, started at the beginning of the last century, is represented by behaviorism founded by J. B. Watson and B. F. Skinner. It can certainly be said that the starting point of behaviorism is constituted by a methodological concern, the scientific nature of the method used in the psychological field. Behaviorism favors the study of behavior and so-called objective reactions in order to deduce the laws that make it possible to predict human behavior. In fact, to be objective and experimental, psychological research must completely ignore mental states, denying any validity to the concept of consciousness (Watson, 2007). According to behaviorism, only what is observable is real, while what is not observable by the experimenter, must be ignored as it cannot be objectified and therefore not real. Consciousness is considered only as an epiphenomenon of the central nervous system. The concept of consciousness is rejected as a privileged way of accessing the psychic life of the subject. Consciousness exists, but it is nothing from an epistemological point of view.

After behaviorism and reacting to the simplistic interpretative formula of it “stimulus/response”, cognitivism has built its own interpretation of man by identifying the mind/brain, consciousness/brain relationship with the software/hardware relationship. There is a processing center in man that receives stimuli, processes them and allows us to understand the complexity of human behavior. But this center is the brain assimilated tout court to a computer. Such a conception is based on a series of axioms that allow the construction of the model but which require to be tried and proved, under penalty of possible misunderstanding of the human condition. It was Dreyfus (1972) in the book “What computers can’t do: the limits of artificial intelligence” who subjected these axioms to severe criticism.

We cannot here go into the details of the axiomatic part that underlies the so-called artificial intelligence. We will limit ourselves to observing that no type of artificial intelligence manifests any trait of awareness and that all calculation operations do not involve any person, except the one who conceived and implemented the algorithm that does the calculation. There remains the unbridgeable gap between the “intelligence” of the computer, pure mathematical calculation in the third person, and the human intelligence capable of recognizing reality, of facing new situations according to our survival, understanding and interaction with the intelligence of others.

Dreyfus comes to make the following prediction: If the computer paradigm becomes so strong that humans begin to think of themselves as digital devices, modeled after artificial intelligence machines, then, since machines cannot be like men, human beings can progressively become like machines, “The risk is not the advent of the super intelligent computer (which all subjugate us as shown by many science fiction films), but of intellectually underdeveloped human beings”. In fact, this prophecy seems in many ways to be fulfilled in our day.

Cognitivism has also given rise to another current of thought about the mind/brain relationship that goes by the name of functionalism. According to this current, the human mind is independent of the physical medium on which it works, just as software can work on different hardware. One of the most representative exponents of this current is the philosopher of the mind Daniel Dennett. The author has developed a rather complex theory which states that numerous independent processes combine in the brain to produce a coherent response to the perceived event and are able to give a linguistic description and definition. According to D. Fisette and P. Poirier, the attitude of Dennett, who was a student of Ryle, can be defined as non-reductionist behaviorism (Fisette & Poirier, 2000). Dennett's theory might explain to us how we produce verbal accounts of our internal states, but it tells us almost nothing or very little about the subjective experience of these accounts. D. Chalmers puts it this way on Dennett's theory: "Like all reductionist theories, Dennett's is a theory of easy problems", that is, that part of the human mind which is in fact comparable to computation.

The author who most questioned the starting point for the investigation of consciousness in the neuroscientific field is the philosopher of the mind Colin McGinn. He is a staunch defender of conscience against all those currents of thought that deny it or reduce it to a strange epiphenomenon: "This means that conscience is a given whose existence I cannot doubt". His position is called mysterianism because McGinn maintains on the one hand, the absolute evidence of the brain and consciousness as constitutive data of the person, but on the other hand, he affirms that the link between them will always remain shrouded in mystery due to an intrinsic limit of our intelligence.

To exemplify the problem (McGinn, 1999), he takes into consideration two famous texts that express apparently antithetical positions, but both, in his opinion, are ultimately ideological and disrespectful of the data that neuroscience and experience make available: that of John Searle "Mind, Language and Society" (Searle, 1980) and that of Paul M. Churchland and Patricia Smith-Churchland "On the contrary" (Churchland & Smith-Churchland, 1998).

So, McGinn sets the criticism on Searle. This author strenuously defends conscience against reductionists who would like to cancel it, but then, as a phenomenon that manifests itself within our natural reality, it leads it back to a naturalistic explanation. Is this really the solution to the mind/body problem, McGinn wonders? Searle compares consciousness to other high-level macro-phenomena that are made up of lower-level micro-phenomena, such as the solid or liquid state or digestion or chlorophyll photosynthesis; these phenomena are, according to Searle, fully explainable on the basis of the microprocesses that underlie them. Consciousness, on the other hand, says McGinn, is something that goes beyond the neurophysiological facts that determine it. Consciousness is not reducible to its own natural causal basis. While it is easy to understand the relationship existing between the state of molecules and certain physical states of bodies, in the case of consciousness, on the other hand, we are faced with an in-

explicable mode of dependence, unique in nature: the dependence of subjective facts on objective facts. What is it in neurons that make them capable of determining consciousness? To the central question Searle does not give any answer. Indeed he does not even pose the problem, but limits himself to asserting that it is a fact of nature that consciousness is produced in this way, without explaining how subjective consciousness can result from the operations performed by a small number of gray cells clustered together. According to McGinn, Searle's conception is not false, but it is irrelevant as it fails to give an adequate explanation of how consciousness can arise from the brain. McGinn accuses Searle of ultimately tracing consciousness back to a natural phenomenon through pseudo-explanations, which do not help to fully understand and sound like the consequence of a naturalism accepted a priori and within which, in any case, consciousness must be traced back.

The Churchland position is known in the neuroscientific field with the term eliminativism. This position is the resumption of concepts proposed by the so-called Australian physicalists, U. T. Place, J. J. C. Smart and D. M. Armstrong and then in the 60 s of the twentieth century by Richard Rorty and Paul Feyerabend and already announced by J.B. Watson at the beginning of the last century: mental states, consciousness, desires, beliefs do not exist; only the neurophysiological brain processes that underlie them exist. Psychology is a pseudoscience and will be entirely supplanted by neurophysiology. The concept of conscience, feeling, state of mind, fear, of faith, are the fruit of popular psychology that has dominated the human cultural scene until now, but this is the time of neuroscience, of a more accurate description of reality. In his critique of these positions, McGinn also underlines the authors' inconsistency with the radicality of the position they affirm: a radical eliminativism would in effect impose the zeroing of everything that has been written about the conscience and basically of all human culture. It is, however, very difficult until now to interpret human behavior only in terms of the electrophysiology of the brain!

Finally, I would like to analyze the position of another philosopher of science who has acquired great authority in the neuroscientific field with his contributions, the Australian David J. Chalmers. He is a staunch defender of conscience as an incontrovertible fact of experience: "Conscious experience is at the same time the most familiar and the most mysterious of the things in the world" (Chalmers, 1996). He takes up a distinction previously made by Ned Block between two aspects of conscious being: access consciousness and phenomenal consciousness (Block & Flanagan, 1997). Chalmers calls these two aspects "awareness" and "consciousness" which we could also translate as cognitive consciousness, including vigilance, and phenomenal consciousness. Chalmers illustrates very broadly that while cognitive consciousness belongs to the order of "easy problems", of which neurobiology will specify the neuronal mechanisms and clarify the modalities of implementation. Instead, phenomenal consciousness as pertaining to the subjective aspects of consciousness, to "the effect" that living a certain experience makes, according to Thomas Nagel's formula (Nagel, 1974),

to qualia to use an expression typical of Anglo-Saxon culture, represents the real “difficult problem” when it comes to conscience. Many functional cognitive and behavioral mechanisms will be elucidated as neuroscience will clarify the complexity and interactions of brain circuits, but the difficult problem, phenomenal consciousness, goes beyond those mechanisms and, even if the latter were solved, it would still remain the enigma of the conscious experience that accompanies them. Realizing fully the difficulty raised by phenomenal consciousness and to avoid McGinn’s mystery position, Chalmers comes to propose that reality is all made up of matter and information and that consciousness is “a more uniform property of the universe, with very simple systems having very simple phenomenal experiences and complex systems with sophisticated phenomenal experiences” (Chalmers, 1996). Chalmers’ conception has much in common with the one known as panpsychism according to which everything has a mind or a soul. Chalmers, however, rejects the term “panpsychism” and argues that his position is that of a naturalistic dualism.

4. The Challenge of the Reductionism

In carrying out his analysis in the ‘60s and ‘70s, Giussani significantly, at the end of the fourth chapter of the religious sense, addresses what was in his time the rising wave of the dominant culture: materialist reductionism. At that time, cognitivism was taking its first steps and neuroscience as such was not yet born. Giussani starts from an observation made by the materialist position regarding the development of the child, easily understandable by all. He notes that this position, where it emerges from the observation of reality, is consistent with the method he proposed. In the development of man, we can note that the non-material factor of the subject becomes evident not immediately at birth, but only after the material component has reached a certain degree of development and maturity. And he keenly observes that in development “an expressive level emerges in man that detaches itself from the expressiveness of animal life, even the most advanced”. This observation, which is evident, seems to suggest that the non-material factor comes from the material factor as it develops. Giussani mentions the absurd consequences of such a position: “thus, the whole phenomenon of love is brought back to a biological determinism” (page 42).

Giussani, however, consistent with the method he proposed, observes (“rationally” (page 43)) that the position of materialism goes against the experiential investigation that shows the two-component aspects of the human personality as irreducible to each other. Suppressing this difference means “If I explain the difference between the two realities by suppressing the distinction, I violate my experience: I invest it with a preconception.” (page 43). Giussani is willing to recognize the great human need for a unitary and total explanation, but not at the price of opposing what experience shows. Therefore, he identifies the error of materialism in an error of method. Precisely the need for a departure from the observation of reality from experience should lead to the search for an explanation that considers all the data emerging from experience, including that of the

irreducibility of the two factors. And here is the explanation: “A unity composed of two irreducible factors, where the emergence of the second is conditioned by a certain development of the first, is perfectly within our grasp, and thus rationally plausible. Thus the human body has to evolve to a certain point in order to be suitably tuned for the genial expression of the human spirit.” (page 44). And it ends with a masterful statement of the method followed so far: “This conclusion values the irreducible two-fold make-up of man’s nature as it manifests itself in the experience of the present, without censoring or reducing anything.” (page 44).

But let’s ask ourselves at this point: what is the origin of the reductionism that dominates neuroscience? I do not intend to speak here of methodological reductionism, which is typical of the scientific method and indispensable from this point of view. Instead, I want to try to outline the origin and development of a radically reductionist conception of reality, which largely prevails in the neuroscientific field.

We owe to Laplace the codification in physics of the reductionist conception. It also goes by the name of Laplace’s Demon. I report it because it is fundamental for understanding the current reductionism of neuroscience: “We can consider the current state of the universe as the effect of its past and the cause of its future. An intellect that at a given moment should know all the forces that set nature in motion, and all the positions of all the objects of which nature is composed, if this intellect were also broad enough to subject these data to analysis, it would contain in a single formula the movements of the largest bodies in the universe and those of the smallest atoms; for such an intellect nothing would be uncertain and the future just like the past would be evident before his eyes (Laplace, 1814)”.

This position is also referred to as the physical causal closure property. It is supported and applied in a radical way precisely when the problem of the mind/brain relationship is addressed. Since the mind (or consciousness) is not a material entity, it cannot causally act on the brain and human behavior. Since the mind is born from the brain, it is the latter that determines the mind and human behavior. In turn, the functioning of the brain is determined by the molecules that compose it.

I would like to point out to you a fundamental critical point for understanding how things really are. What is at stake here are not the necessarily deterministic physicochemical laws that underlie how our brains work. In the name of physical causal closure, it is here stated that the only causality operating in the universe and in man is the physical one, that of the molecules that compose it (Laplace!). The fundamental question is therefore not determinism, but reductionism as a global conception.

According to the reductionist position, if I have decided to raise my right arm, my mind cannot be the cause of the gesture because it is not material and, therefore, cannot interact with my brain from which the signal for the movement comes. Therefore, reductionism concludes that it can only be my brain that de-

termines the gesture and therefore the physicochemical determinism that governs it. The immediate and simple experience that we have of being with our freedom to determine the time and manner of the gesture evidently denies such a statement. But let's now see how the observation of reality can help us resolve this apparent contradiction between experience and so-called scientific data.

When life emerges on earth, the first living organisms are formed, almost certainly bacteria, starting from LUCA, the Last Universal Common Ancestor. To be such, that is life: it had to possess the characteristics of life from the beginning: individuality (and therefore separation from the environment), organicity that is complexity aimed at survival, ability to "act" on the environment by drawing energy and molecules for life, ability to adapt and evolve, reproducibility (otherwise life would be over after a moment).

But let us ask ourselves: what does this mean in terms of causality? It means that not only a bottom-up causality as all reductionism claims has begun to exist, but a top-down causality has begun. For example, some flagellated bacteria are able to move towards the sugar gradient of the environment and thus to more adequately procure the molecules they need for survival. Does this violate the physicochemical laws of matter? Absolutely no! Of course, they are able to choose among all the possibilities offered by their chemical-physical constitution (by their determinisms) those useful for life.

So evidently, the living being is capable of exerting a causal effect on its own behavior and on the environment, without having to invoke spiritual or vitalistic aspects, remaining within the space-time dimension with all its determinisms (Murphy & Brown, 2009).

If we could now go through the stages of the evolution of life on earth, we could also describe them as a progressive increase in the ability to interact with the environment, an astonishing increase in the degrees of freedom operable in reality by eukaryotes compared to prokaryotes, of the former multicellular organisms compared to unicellular and then up to mammals, monkeys and then to human lines differentiated from monkeys about 7 - 10 million years ago. The degrees of freedom of a lion in its behavior are truly remarkable, as evidenced by the complex hunting strategies.

And then we come to homo sapiens, which appeared in Africa 250,000 years ago. Within this species, probably in relation to an event of a cultural and social nature, which also occurred in Africa about 100,000 years ago and attributable to a small group of homo sapiens (Savoldi et al., 2013; Tattersall, 2010), to a single woman as suggested by studies on the mitochondrial DNA with purely diagenic transmission, consciousness and language emerge, as we know them today. This event changes the face of the earth forever, from a garden created by biological evolution to an environment increasingly determined by human culture, by cultural evolution. The degrees of freedom acquired by the rise of human consciousness as we know it today make a prodigious, unthinkable, amazing leap. Yet, at the same time, human consciousness remains completely dependent on the determinism of the human organism as it is made, on the environment in

which it lives, on the possibilities offered by the physical and cerebral constitution of man.

Now while in physics substantial reductionism has been challenged by the evolution of modern physics, especially with quantum physics and with the increasing difficulty in defining what “matter” is (Clayton, 2010), in neuroscience reductionism is defended in every way, because it appears the only possibility of solving the problem of consciousness by eliminating it at its root, reducing it to an epiphenomenon, making it in any case become a cerebral function produced by the brain. The undermining of reductionism would reopen the threat of finding ourselves faced with something inexplicable, which escapes our analysis, because, as McGinn states, conscience is disturbing.

5. Conclusion

The neuroscientific field appears dominated, albeit according to a great variety of conceptions, by a substantial reductionism that totally rejects the dualism of substances and which remains the basic framework to which each proposal refers. Such a mentality has established itself unchallenged, especially within the sphere of scientific dissemination. The so-called scientific pages of newspapers and weeklies are often dedicated to the themes of neuroscience and report as absolutely established and almost obvious that consciousness is a pure neurophysiological function totally determined by the brain. It has become obvious in the dominant mindset that “we are our brains”. McGinn and, in some respects also Chalmers, realize more than any other the inadequacy of such a conception, the inability that reductionism has to account for the data of experience, to grasp the ineffable phenomenon of the subjectivity of every human person. and on the other hand, they refuse to return to the substance dualism of Descartes and its more modern versions, including that of J. Eccles (Eccles, 1994) and R. Penrose. (Penrose, 1996). The awareness of the enormity of the problem is evident in them.

The composition of two types of radically different phenomena in the unity of the human person, the originality and radical diversity of phenomenal consciousness (as Chalmers defines it) with respect to the cerebral apparatus of man, constitute the point identified as the most acute and mysterious by J. Searle, whom we have already quoted: “How is it possible that neuronal, physical, objective and quantitatively describable stimulations can cause subjective, private and qualitative experiences? Or how can the brain allow us to move from electrochemistry to sensation?” (Searle, 1997). During sleep, consciousness is abolished, except when we dream; during coma, which can be caused by a great number of diseases and lesions, consciousness is completely abolished. So, brain activity typical of being awake is necessary and indispensable for consciousness to function and act; but how a completely subjective phenomenon can be produced by a physical-chemical machine like the brain?

The well-known neuroscientist and Nobel laureate in medicine Gerald Edelman states: “Our inability as scientists to provide an explanation of individual consciousness is no more mysterious than the inability of Physicists to explain

why there is something and not nothing” (Edelman, 1994).

Giussani is not a neuroscientist, not a biologist, a doctor, or a philosopher and his life has only overlapped with the beginnings of modern neuroscience. Yet, the method of investigation of the conscience that he proposes, so clear in its starting point identified in the personal experience that everyone has of his own conscience, so rich in observations that outline the correct path and avoid deviations and distances from it, thus developed to its final consequences and applications, appears to be truly reasonable and difficult to bypass in dealing with the problem. Of course, as we have already observed, he has no claim to arrive at a total explanation of how consciousness is grafted onto the material aspect of the person in his brain. But such a position that leaves open the major problem and does not claim to solve it, forcing the data available now and the concrete experience verifiable by everyone, is coherent with the scientific method.

This conception, this method of investigation of consciousness, is shown to be completely devoid of contradictions with the data of neuroscience, indeed by its very nature open to all the new observations that neuroscience will bring us, all aimed as it is to learn from reality judged starting from the one’s personal experience in comparison with the ultimate core of our consciousness (elementary experience).

Furthermore, the method of experiential analysis of consciousness makes us careful to distinguish accurately between the true, objective observation of reality and the ideological superimposition, the arbitrary extrapolation from scientific data, the unscientific claim of a total and ultimate explanation of phenomena, the unreasonable assumption, as we have seen, of tracing all causality operating in the universe to the sole movement of the elementary particles that make up matter, as affirmed by the radical reductionism that is by far prevalent in the neuroscientific field.

I would like to emphasize again that the experiential investigation that Giussani proposes considers all the factors involved, especially those most characterizing the human person, as already mentioned “without censoring and reducing anything”.

A discussion about the assumption that stays at the basis of the various neuroscientific currents appears necessary in the field of neuroscience and the method proposed by Giussani may constitute a common and acceptable by everyone background for future development and advances in studying the greatest problem of our culture, the relation between brain and human consciousness.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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