

# Bioethics and Consciousness



This publication is the result of the collaborative and interdisciplinary effort of the “Neurobioethics Research Group”, directed by Prof. Alberto Carrara, promoted by the UNESCO Chair in Bioethics and Human Rights (Rome, Italy).

The “Neurobioethics Research Group” was created on March 20, 2009 at the Ateneo Pontificio Regina Apostolorum as a research group. It is sponsored and promoted by the Science and Faith Institute and the UNESCO Chair in Bioethics and Human Rights. It promotes research, study, teaching and training in that broad panorama of reflection which today is called “neuroethics” and which is the result, on the one hand of the development of knowledge relating to the human nervous system and brain in particular and, on the other hand, from the anthropological, ethical, cultural and social interpretations of this knowledge. The “Neurobioethics Research Group” chooses the term “neurobioethics” to underline an integral and realistic vision centered on the human person, dual unity, in harmony with a Christian perspective of the philosophy of man.

The UNESCO Chair in Bioethics and Human Rights ([www.unescobiochair.org](http://www.unescobiochair.org)) was established in 2009 at two Roman universities, the Ateneo Pontificio Regina Apostolorum and the Università Europea di Roma. It offers a university forum for reflection and study to promote the application of bioethical principles in the field of science, medicine and new technologies, inspired by the Universal Declaration of Human Rights and Bioethics of UNESCO.

# Bioethics and Consciousness

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# CHAPTER 1

## INTRODUCTION TO NEUROSCIENCE, QUANTUM MIND, PHILOSOPHY, BIOETHICS, AND NEUROBIOETHICS OF CONSCIOUSNESS

MARIA PAOLA BRUGNOLI

### **Abstract**

The study of consciousness today transcends various spheres including cognition, neurology, psychiatry, psychology, philosophy, biology of spirituality, and quantum consciousness. The aim of this book is to explore the fundamental nature of consciousness through the lens of an interdisciplinary approach.

### **1. Introduction to the study of consciousness**

Consciousness is one of the most puzzling problems in brain science and its basic understanding, along with the psychological and neuroscientific correlates of consciousness, has valuable consequences for scientists and clinicians. There is a growing fascination with the neuroscience of consciousness, which has witnessed a tremendous influx of ideas and growth, but only a multidisciplinary study can decipher the ultimate reality of consciousness.

To explicitly understand a human being's centrality as a whole, in body, mind and spirit, requires an elaboration of consciousness from the perspectives of neuroscience, psychology, quantum brain, philosophy, bioethics, and neurobioethics. A neuroscientific review of the foundations and phenomenon of consciousness, awareness, self-consciousness, and bioethics may provide an impetus for a new interdisciplinary model for current scientific studies and definitions of consciousness.

The aim of this book is to explore the fundamental nature of consciousness through the lens of neuroscience and psychology. Additionally, evidence will be provided to build a multidisciplinary bridge between the brain, mind, philosophy, the introspective self-consciousness, human identity, and free will.

Neuroscience today transcends various spheres including cognition, neurology, psychiatry, psychology, philosophy, biology of spirituality, and quantum consciousness. To develop an apt explanation for human self-consciousness, the quantum mind or quantum consciousness hypothesis was put forward. It proposed that consciousness cannot be explained by classical neuroscience alone and posits that quantum mechanical phenomena, such as quantum entanglement and superposition may play significant roles.

Based on the concept that the universe is imbued with an all-pervasive electromagnetic background field, called zero-point field (ZPF), which, in its original form, is a homogeneous, isotropic, scale-invariant and a brimless ocean of universal energy-consciousness (God?), a new theory of quantum universe and quantum mind has been proposed. Parallels have been drawn between this new theory and the concept of consciousness in the philosophy of the medieval philosopher and theologian, Thomas Aquinas. Self-consciousness was deemed by Aquinas as the summit of intellectual capacity, which also makes the concept of the person possible: it is therefore attributable not only to man, but primarily to God, who thinking of himself, also knows all reality in the same act. Although different from divine self-awareness, human self-awareness remains always connected for Aquinas to the ontological question of a *Being* to be placed at the foundation of his own intimate essence, and to whose implicit presence the possibility of every form of knowledge is owed.

To summarize these concepts, quantum mind revolutionizes our notion of consciousness and reality by imparting significance to ZPF as a creative agent that forms matter and is the root cause of quantum phenomena and consciousness in the human brain. This concept is in harmony with the whole thomistic theory of knowledge, according to which nothing can be present to the mind without recourse to the abstracting process that derives the universal from single objects known through the senses.

Consequently, human conscious systems can be expected to display quantum behavior and self-consciousness with the accessible spectrum of conscious states. Correspondingly, it seems reasonable to conclude that



complex quantum systems, such as coherent cell assemblies in the human brain, give rise to a broad range of multifaceted conscious experiences.

Quantum brain research is paramount not only to understand the neuroscientific correlates of the brain and inner-self-consciousness, but also to correlate and delineate differences between human and artificial brains.

The intimate relationship between the conscious mind and the brain has been unraveled through clinical and scientific studies during the past two centuries. However, the exact nature of this relationship remains elusive. The premise of this book is to consider the bioethics and neurobioethics of consciousness and self-consciousness from the perspectives of neuroscience and philosophy to examine the association of the brain to consciousness and self-introspective-consciousness.

The definition of consciousness, proposed by Rita Levi Montalcini, is considered to act as a bridge between the diagnosable clinical condition, personal existential status, and the expression of identity through actions. The subjective identity refers to the “fundamental rights” of the human being that enables us to arrive at a consensus on who the person is. Therefore, incontrovertible reasons for a recognized, protected, and globally-respected dignity are essential to inspire a dialogue between heterogeneities. The essential junctions of the “bridge” that bioethics, and consequently neurobioethics, may be understood by exploring the relationships between neurosciences and human rights, conscience, and identity.

Harmonious cohesions between neuroscience and biological/genetic, psychological, social, spiritual, anthropological, and the juridical system make the human being a unique “self”. If this uniqueness is violated by improper or stolen debit, one can claim compensation for the damage with a set of connected and related rights (rights to life, privacy, full freedom, psycho-physical integrity, etc.).

Because the definitory design of the entity articulates the concept of “identity”, the juridical approach demonstrates a split among competent voices of those who evaluate the inconsistency of precise research on the theme since this right embraces concurrently existing values such as life, freedom, integrity, religion, family, image, privacy, nationality, etc.

There are basically two anthropological concepts — the concepts of consciousness and freedom (or free will) — that function as “catalysts” in

the corresponding philosophical-cultural (and mass media) thought of our postmodern day. Contemporary thoughts par excellence, which shape and form the person on the concepts of consciousness and freedom (or free will), will stand enriched by the fascinating and growing field of neuroscience research.

The bio(neuro)-psycho-social model presented in this book, is a “conduit” between the microscopic world of neurophysical processes and the macroscopic dimension of the living human being with inherent conscious and free voluntary experiences that shape and form an identity and personal responsibility. The human being is, thus, at the center of the experiences of consciousness, human identity, free will, and self-consciousness.

Self-consciousness is the result of a reflexive “movement” that occurs with every typical human action, which, as such, always implies a cognitive moment. Elucidating it will require an analysis of this reflection, the prerequisites that make it possible and the result it achieves.

Consciousness is the personalized energy that knows itself, and its abilities go far beyond human understanding. The human mind is conscious energy in all its forms. The brain is the vital organ that facilitates the link between “our” mind, spirituality, and matter. Evidence from current neurophysiological studies indicate that aspects of bioethics-religiosity/spirituality may indeed be linked to important knowledge on consciousness.

Aquinas, in true millenary tradition, synthesized and confronted this problem in his various works, clarifying, in the first place, that consciousness is not a habit, a faculty, or a potency, but an act. The “dynamic circularity” or causal circularity bottom-up/top-down (and vice versa), highlighted through the interdisciplinary fields of neuroscience, psychology, psychiatry, and philosophy, reflects a particular “ecological” vision of the human person, which best accounts for its dual-unity between neurobiology, biography, and neurobioethics.

While the reality of consciousness, understood as subjective experience (i.e., the first-person experience of oneself as a bio-psycho-socially integrated being), seems to be a fact, or rather, the “central reality of human existence” (the peculiarity that allows us to “build” our own and unique personal identity), contrastingly, often there is a tendency to reduce it to an epiphenomenon of neuronal states, activated in the correct mode.

The inter-relatedness between consciousness and free will warrants the prerequisite that the human person, to act freely, must be in a state of awareness, ie, conscious on various levels. The causal circularity bottom-up/top-down dynamic should be used in a sort of ever-more-complex layering to understand the multidimensional structure of the so-called neuronal correlates of consciousness (NCC) and free will as the starting point from the perspectives of contemporary neuroscience and philosophy.

The chapters that comprise this book, despite being independently written by different authors, weave a precise thread, constituted by the awareness that only an interdisciplinary study can unravel the deeper meaning of human consciousness. This is the first volume for the study of bioethics and consciousness; additional research that encompass robust methodology is warranted, not only in neuroscience and experimental designs, but also, importantly, philosophy, bioethics, and neurobioethics of consciousness. The ultimate goal of this exercise is to create a relationship characterized by awareness within the human being and the transcendence of self-consciousness. The insights gained from possible relationships between aspects of consciousness, neurobioethics, and religiosity/spirituality will explicitly reveal that the human mind, comprising introspective self-consciousness, identity and free will, could be very different from an artificial brain.

The path toward self-introspective-consciousness is initiated when the inner-self and heart are opened to feel our connection with life, love, and compassion.

S. Augustine, in his talk of the ego-self-consciousness, presents in himself “notitia sui”, opening the way to numerous paths of this experience. *“Where the intellect can re-enter on itself (reditio completa o super essentiam suam), because it has no parts like matter, and therefore the Ego can gather in the exercise of its faculty of self-intelligence as the root of intelligence, will and freedom: its own nature as a person”.* (S. Augustine)



## CHAPTER 2

# ON IDENTITY AND CONSCIOUSNESS: THE RIGHT TO IDENTITY IN LIGHT OF HUMAN RIGHTS

ALBERTO GARCÍA GÓMEZ  
AND GIULIA BOVASSI

### **Abstract**

Human rights embrace and watch over the customary evolutionary tension that humankind holds in the fields of knowledge, among which the tension held by neurosciences is prominently conspicuous as adaptable with varied methods of action in the context of interdisciplinary research. This last aspect is also found in its collateral contribution to research developments regarding conscience, which inevitably appeal to law, anthropology, and ethics regarding the inherent provocation that they cause to the customary acceptance of the human identity, in both a subjective and collective sense. Indeed, dealing with “fundamental rights” of the human being means achieving a consensus on who the person is. These are, therefore, recognized as the incontrovertible reasons for why a recognized, protected, and globally-respected dignity are essential to inspire a dialogue between heterogeneities. An understanding of the interrelationship between neurosciences and human rights, conscience, and identity helps comprehend the essential junctions of the “bridge” that bioethics, and consequently neurobioethics, lends itself to be.

### **1. How does an argument on personal identity become global?**

Whilst wandering within the territories delimited by the disciplines of bioethical investigation, the convergence of differences serves as a common center of gravity. The human being is an entity to be valued in

anthropological, ethical, theological, and psychological dimensions within the lived and concrete reality. The action of law, through the rules of justice, *recta ratio*, and promulgation by legitimate authority, are meant to recognize and preserve the inherent and inalienable rights of humans, and to protect the very nature of each individual, guaranteeing the expression of his/her own faculties in the lawful domain of free will and self-determination. By virtue of this prestigious investiture, bioethics demands a commitment, to be renewed without ceasing, to the reasoning around the existential question about the human being, “who am I?”, which finds its improvement in the relational life and directional channel that leads to the question of “who are you?”, and “why your safety and wellness concerns me?”. In this sense, an argument on personal and collective identity necessarily incorporates multiple particular identification characters related to the self-image an individual has projected to society, including name, surname, title, biometric features, fingerprints/digital signature, picture, sensitive data, registration numbers, fiscal code, health insurance code, etc. and of the image that the society translates as an individual’s identity, the static center of gravity around which human beings derive their own characterizations.

The aforementioned uniqueness of the human being, as said, is the central structure of the spiral of the active variegated approaches and are agents for its protection. What positive law proposes, or should propose, to accomplish is to prepare the right - duty binomial in the most appropriate forms as a guarantee of equal access to methods useful for both the private and public realization of personal identity: of a full, perfectible, and virtuous self-image; a commitment that contributes both to the juridical and to the empowered autonomy of individual maturity. Through prevailing law, the subject is able to recognize the ways in which it is lawful to benefit, in his own and in the care of others, as well as to fully and qualitatively express one’s own personality as a right to do what one is. Without a doubt, the preliminary act is a laborious cultural activity that can provide the human being with valid conceptual tools to further the development of a complex understanding of oneself as a physical, psychic, and spiritual totality who is biologically, genetically and culturally influenced and obviously separate from the natural law, as a solid, immutable, and nutritive *humus* with respect to the variability typical of the positive law, and subject to the influence of dynamic circumstances. The subjective identity refers to the rights of the personality, which «are

not created by law but are only found by law»<sup>1</sup>, and just like the inalienable rights, command a massive and non-malleable build, and are *ergo* indifferent to the political and social system of the contemporary background in which they maneuver, as well as to the principle of consensus/majority. As this permanence is a guiding light when there is the danger of an unruly invasion of the fundamental rights, it is a condition inherent to the safeguarding of human dignity as a principle of justice, and a bond between peoples from which are derived the values of solidarity, subsidiarity, charity, and equity, all of which erect the walls of the human consortium. These values are built on what is called «sacred duty» within the preamble of the UNESCO Constitution Act (November 16, 1945) — compliance and supra-national responsibility<sup>2</sup>; in fact, «if responsibility is the commitment that coincides with the honor of being human, then it should not be intended as a burden we carry on our shoulders, but, according to the etymology, as an “answer”; to cease being deaf, towards the demands of reality, and being dumb, that is to be incapable of taking a stand»<sup>3</sup>.

Why is the concept of identity so significant when its affirmation holds such a solid connection with the individual and one’s conscience through which he/she appropriates self-awareness? To what extent does identity sit in the arms of law? Focusing on the conflictual relationship that exists between the various disciplines that question the face of conscience and its probable shared definition, we can extract one particular relationship that facilitates the type of analysis conducted, that is: «state of awareness of our existence as an individual entity, which implies the recognition of one's own actions and of the temporal and sequential succession»<sup>4</sup>.

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<sup>1</sup> «Non sono creati dal diritto ma dal diritto sono solo trovati»; F. GALGANO, *Trattato di diritto civile. Vol. 1*, CEDAM, Padua 2010, p. 45

<sup>2</sup> Unesco, *Costituzione UNESCO*, Londra 1945, p.1 in University of Padua – Center for the Human Rights “Antonio Papisca”

[http://unipd-centrodirittiumani.it/public/docs/costituzione\\_unesco.pdf](http://unipd-centrodirittiumani.it/public/docs/costituzione_unesco.pdf)

<sup>3</sup> «Se responsabilità è quell’*onere* che coincide con l’*onore* di essere individui umani, allora essa non va intesa come un *“fardello che ci portiamo sulle spalle, ma, secondo l’etimologia, come un “rispondere”, un cessare di essere sordi verso le istanze della realtà e muti, cioè incapaci di prendere posizione*»; E. D’ANTUONO – E. TAGLIATELA, *La trama filosofica della “Dichiarazione Universale sulla Bioetica e Diritti Umani”*: autonomia, dignità, vulnerabilità, in «Laboratorio dell’ISPF», XIV-15 (2017), p.7

<sup>4</sup> «Stato di consapevolezza della nostra esistenza come entità individuale, che implica il riconoscimento delle proprie azioni e del susseguirsi temporale e

Trusting exclusively in this characterization, which is mostly scientific, of what “conscience” means, we would fall into the error of exempting the psychological and moral value. This would cede the totality of its understanding to neuroscientific reductionism, typical of the functional reading of the human being, and brain consciousness/industriousness and/or consequential awareness that one possesses. The definition of consciousness, proposed by Rita Levi Montalcini, acts as a bridge between the diagnosable clinical condition, personal existential *status*, and the expression of identity through actions.

Therefore, there exists deliberative faculty and free will, which means that the person-individual and the person-community (consider the inference of law over both of them) is a direct testimonial of the ability to discern between good and evil, and how much of it unfolds in the illicit versus the legitimate. This is the universal sense of justice deposited in the private life of the person-in-the-world, and empathy flourishes between the individualistic and the communal spheres that are tied to the vivifying settlement of human rights. As Francesco Viola underlines, «(...) *human rights are not only arguments, but assets as well. They belong to the description of self. They are not something that individuals have, but really they are what individuals are. They concern the nature of individuals rather than their external attributes*»;<sup>5</sup> mechanisms of legal regulation, as well as ontological, flow within identity since the individual-community mixture is so dense that it can advance the correct claim that justice, prior to positive law, must devote itself to the true right of the human being, and the conditions through which one can realize oneself in harmony with what he/she is: the understanding and the open explication to the relationship. Here lies the interdependence between good and right<sup>6</sup>, which shapes the integration of different identities of coinhabitants. This is made possible by the assumption that the essential identity is above all one recognized in human dignity, and that the common grammar of a global bioethics is a constant exemplification of how

*(...) personal identity is possible only in relation to diversity. The diversity is marked by the present development of human rights. A community is constituted by different ways of life and existence and by the reciprocal*

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*sequenziale*»; R. LEVI-MONTALCINI, *Abbi il coraggio di conoscere*, BUR, Milan 2004, p.25

<sup>5</sup> F. VIOLA, *Personal Identity in the Human Rights Perspective*, in A. PECZENIK – M. M. KARLSSON (a cura di), «Law, Justice and the State. Essays on Justice and Rights», Franz Steiner Verlag, Stuttgart 1995, p.103

<sup>6</sup> Cfr. *Ibidem*, p.104



*recognition of people. The other man must be different from me to be truly other and in the meantime I can recognize myself as different from him.*<sup>7</sup>

## **2. A decisive neuroscientific *novus* for a re-understanding of law**

The right to personal identity arises as institutionalized protection for the subject, as well as the association of one's own image, from the undue disfigurement of the aforementioned representation by an external hand, in which "being conscious" becomes a much more extensive and articulated language than the mere functionalistic translation linked to neurological processes; a synergy between conduct and cognitive activity/processing is evoked. Any scientific goal that mechanically quantifies conscience certainly refers to additional apparatuses of the individual identity's needs — traits of personal and social project, the material and immaterial, the contingent, and essential — the result of harmonious cohesions between neuroscience and biological/genetic, psychological, social, spiritual, anthropological, and juridical systems that make the human being a unique "self". If this uniqueness is violated by improper or stolen debit, one can claim compensation for the damage with a set of connected and related rights (rights to life, privacy, full freedom, psycho-physical integrity, etc.).

This is a theorized fact, well experimentable in the Preamble of the Universal Declaration on Bioethics and Human Rights (2005, October 19), which states that «the identity of the human being includes the biological, psychological, social, cultural, and spiritual dimensions»<sup>8</sup>.

The *focus* on individual identity is extremely precious and abundant in capillary derivations that it represents the value inherent in its variegated precept within the norms that deliver a sense of justice where there is action implemented by a rational being who is sentient and capable of deliberating with knowledge of cause. Viewing through a magnifying glass on medical ethics, there is a determined and constant invitation to treat a patient as the nucleus of unitotal sense, releasing interventions on the person as if the patient was an objectified body rather than one pertaining to a human being. An example of this could be the idea of a

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<sup>7</sup> Ibidem, p.106

<sup>8</sup> «L'identità della persona comprende le dimensioni biologica, psicologica, sociale, culturale e spirituale»;  
[http://unipd-centrodirittiumani.it/it/strumenti\\_internazionali/Dichiarazione-Universale-sulla-bioetica-e-i-diritti-umani-2005/192](http://unipd-centrodirittiumani.it/it/strumenti_internazionali/Dichiarazione-Universale-sulla-bioetica-e-i-diritti-umani-2005/192)

head-body transplantation on human being, a long-studied, and almost ostentatious, experimentation attempted in 2017 by the neurosurgeon, Sergio Canavero, who explored a hypothetical possibility in applied ethics by hypothesizing a finalistic sense of real help in situations of disability and suffering, and had to elaborate, through a mature interdisciplinary process, an articulation of assemblies subjected to perplexities derived mainly from the identity vacuum resulting from cerebral somatic anastomosis. Would that new human being, a hybrid, a mixture of two individual and different, alien identities, at first be independent, and then united into one new subject? The case is fitting because it combines multiple academic geographies into a fundamental interchange: the human being acting as both the narrator and the narrated of a story that emerges from quantitative/numerical Cartesian sophistications; a biography crossed by experiences, values, memories, education, and choices. States of consciousness and cognitive activities fuse together into an elaborate fabric of unknown answers to ancient questions on an organization's knowability, transcribing the correlation between cognitive processes and *soma*, ceding at a certain point into the lacerating fracture between two human beings in which the primacy of one to the other is recalled, rather than an interactive exchange. An integral part of the pluridimensionality of the person is inserted in the self-environment construct, an ego-external reality that acts in relation to proper identity.

«Any discourse relating to speculative factors inherent in the relationship between bioethics and neuroscience would be hollow if not illuminated by the intersubjective dimension, the relational perspective and the ultimate goal of care, even when it takes on the singular sense of self-care»<sup>9</sup>. A focal point touched on by the psychiatrist, Giulio Corrivetti, in continuity with what has been stated up until now, who states that the qualitative improvement due to anatomical-practical cognitive advancement must use human rights to avoid the danger posed by an interpretative solution of human as deterministic. It is on this last modality, moreover, that the major incentives towards a neo-freedom or unprecedented free will are considered purely as a mechanism, belonging to neural connections that mature a moral conditioning manifested by intentionally chosen acts. From

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<sup>9</sup> «Ogni discorso relativo ai fattori speculativi inerenti ai rapporti tra bioetica e neuroscienze diverrebbe vuoto se non illuminato dalla dimensione intersoggettiva, dalla prospettiva relazionale e dal fine ultimo della cura, anche quando essa assume il senso singolare della cura di sé»; G. CORRIVETTI, *Bioetica e Neuroscienze*, in «*Studia Bioethica*», 4-1 (2011), p.15

an «indeterministic and obscure presupposition»<sup>10</sup> to a neurobiological depersonalization of the link between consciousness, awareness, and freedom, an “Ego” that can «be understood as a brain process or organization»<sup>11</sup>, obtained from scientific studies on trauma or injuries to neural networks, considering its direct effect on a dissociated identity, has fragmented in itself. We can quickly guess how the system becomes suitable within the sphere of law to a window on freedom, which shows fault, responsibility, autonomy, and imputability as terms to be validated on the basis of unusual conceptual trails. How would the so-called «right to be ourselves»<sup>12</sup> be possible? Is there an exhaustive, full expression of the human being, of identity, in the neurological formula that reduces existence to data on the brain? The approximation between mind and brain emerges, parallel to the notion of “brainhood”.

A neuroscientific theory of consciousness must be a theory of the Subject of consciousness, capable of breaking down this imaginary central Power into its constitutive parts, neither of which can, in itself, properly be a Subject. The apparent properties of consciousness that take on meaning only as characteristics enjoyed by the Subject must likewise be decomposed and distributed, inevitably putting the imagination of theorists under pressure.<sup>13</sup>

### **3. Person, dignity, and freedom: essential objects of protection of human rights within historical-scientific transformation**

In its progression, neurobioethics implemented the effectiveness of a theoretical discourse on the body, causing a renewed ontological vigilance to its role as an essential and constitutive part of the whole person,

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<sup>10</sup> «Presupposto indeterministico ed oscuro»; Ibidem, p.8

<sup>11</sup> «Essere inteso come un processo o un'organizzazione cerebrale»; Ibidem, p.10

<sup>12</sup> «Diritto a essere se stessi»; G. PINO, *L'identità personale*, in P. CENDON (a cura di), «Gli interessi protetti nella responsabilità civile. Vol. II», UTET, Turin 2005, p.368

<sup>13</sup> «Una teoria neuroscientifica della coscienza deve essere una teoria del Soggetto della coscienza, in grado di scomporre questo immaginario Potere centrale nelle sue parti costitutive, nessuna delle quali può, per se stessa, essere propriamente un Soggetto. Le proprietà apparenti della coscienza che assumono un senso solo come caratteristiche godute dal Soggetto devono allo stesso modo essere decomposte e distribuite, mettendo inevitabilmente sotto pressione l'immaginazione dei teorici»; D. C. DENNET, *Sweet Dreams. Illusioni filosofiche sulla coscienza*, Raffaello Cortina, Milan 2006, p.149

contrary to the generic naturalizing driving force projected to personalize the knowable neuronal material «according to which we are “cerebral subjects”»<sup>14</sup>, which is aligned with the dualism of Cartesian memory that divides the individual *unicum* into *res cogitans* and *res extensa*. Instead of asking whether the human being possesses or participates in corporeality, advances in neuroscience have instead compelled us to question whether one is an architect or artifact of his/her own brain (for example, brain imaging techniques, and the decisive role that blood flow assumes in sensitivity, and how it intervenes in cases of injuries due to antisocial behavior). Law is questioned, together with philosophy, anthropology, and theology, about the return to the radical reasons why a human being is still declarable as a rational agent, an administrator of the personal identity with which he/she cooperates for the common good.

A human being is potentially able to depict intentionality of an act in consideration of circumstances and consequences from the perspective of an individual and/or collective responsibility, depending on the problem considered. Does this claim, an object of absolute juridical relevance, maintain its applicability nowadays? Are there faults or undue merits, since consciousness and awareness, fully or partially, mirror the internal apparatus of the neuro-functional human being-machine? In the latter, could we, for example, consider legitimizing, from the perspective of human rights, a biochemical re-education or prevention, to mention a modality, of the diagnosed subjects' sensitivity to inclinations of harmful conduct?

*Water and fire have essences (Qi), but not life; herbs and trees have life, but no knowledge; birds and beasts have knowledge, but no sense of justice (Yi). Man has an essence, life, knowledge and, in addition, a sense of justice; thus he is the noblest on earth.*<sup>15</sup>

«(...) Does saying that the Ego is not an indivisible substance, unchangeable and incapable of existing independently from the body necessarily mean that it does not exist, or that it is a myth, or a purely

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<sup>14</sup> «*Secondo cui noi siamo “soggetti cerebrali”*»; M. DI FRANCESCO, *L'io tra neuroni e mente estesa*, in A. LAVAZZA - G. SARTORI (a cura di), «*Neuroetica. Scienze del cervello, filosofia e libero arbitrio*», Il Mulino, Bologna 2011, p.44

<sup>15</sup> Crf. Q. ZHANG, *The idea of human dignity in classical Chinese philosophy: a reconstruction of Confucianism*, in «*Journal of Chinese Philosophy*», 27-3 (2000), pp.299-330, in R. ADORNO, «*Human Dignity and Human Rights*», in H. A. M. J. TEN HAVE - B. GORDIJN (a cura di), «*Handbook of Global Bioethics*», Springer, Dordrecht 2014, p.48

virtual reality?»<sup>16</sup>. Human rights, encompassing the arduous duty of guarding over the slippery slope, are radically opposed to the existing argumentative periphrasis of human nature, and are spent as a compressive action mode of the irreducibility inherent, first and foremost, within the concept of human dignity, and its relationship with the construction of a complex identity-in-relationship with otherness, *bios* and *kosmos*. Similarly, what is ratified in the summoning to the global observance of the rights due to the human being is the recognition of what, as persons, they embody. It belongs to them not for attribution, but for obeisance, restraining every prevaricating or despotic formula of disintegrating hierarchical discrimination.

The universal cohesion of differences, supine in a horizontal plane valid for each member of the *Homo sapiens* family, is welded together by the incontrovertibility of the aforementioned rights: each is placed at the service of the moral obligations that every person and state have the duty to fulfill; a cornerstone in the scientific, cultural, historical, and political flux. As often reiterated by the Italian philosopher, Laura Palazzani, within the concern about identity, which branches from the philosophical to the juridical sphere, it is central to fix the precise location prepared for the concept of human being defined according to the notion of Boethius «individual substance of rational nature»<sup>17</sup>, immediately referring to the objective fact that «the functions he exercises and the acts he performs do not exist in themselves, but they only exist as functions and activities “of” a substantial human individual who is the unitary and permanent referent, the real ontological condition.

The substance, so intended, helps explain the *unity* (in space) and the *stability* (in time) of the identity of the human being»<sup>18</sup>. In this sense, the

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<sup>16</sup> «(...) Dire che l'io non è una sostanza indivisibile, immutabile e incapace di esistere indipendentemente dal corpo significa necessariamente dire che esso non esiste, o che si tratta di un mito, o di una realtà puramente virtuale?»; M. REICHLIN, *L'identità umana alla luce delle neuroscienze*, in «Rivista di Filosofia Neo-Scolastica», 1-2 (2015), p.485

<sup>17</sup> «Sostanza individuale di natura razionale»; BOEZIO, *De persona et duabus naturis*, cap. III, PL 64, 1345

<sup>18</sup> «Le funzioni che esercita e gli atti che compie non esistono in sé, ma esistono solo come funzioni e attività “di” un individuo umano sostanziale, che ne è il referente unitario e permanente, la condizione ontologica reale. È la sostanza così intesa che consente di spiegare l'unità (nello spazio) e la permanenza (nel tempo) dell'identità dell'essere umano»; L. PALAZZANI, *Persona ed essere umano in bioetica e biodiritto*, in «Idee», 34/35 (1997), p.146

person is more than the particularity of his/her acts, which aids the understanding of the moral and juridical good as embodied in one's own identity as a participant in the human community. This value is at the heart of a sense of justice, intended as giving everyone what each owns, supporting the exercise of discernment between good and evil conducted by farsighted consciences and being informed that the human being needs the benefit of the supranational norm to keep in mind the ultimate meaning of respecting one's right while flourishing in his/her daily private and public existence. The set of reasons highlighted, in law, must clash with the

*(...) dichotomy as "the need to become" and "need to be". The first need refers to the individual's development and the constant recreation of her identity as she pursues her ambitions. The second need emphasizes the principle of authenticity, the individual's need to be true to her own self, at whatever stage in her development she finds herself, and the need for society to recognize this persona.*<sup>19</sup>

Since the definitory design of the entity articulates the concept of "identity", the juridical approach demonstrates a split among competent voices of those who evaluate the inconsistency of precise research on the theme, since this right embraces concurrently existing values such as life, freedom, integrity, religion, family, image, privacy, nationality, etc., and those who value the right to identity as substantial, because of the ownership represented in and from it, which emerge from the diatribe between subjective and collective/social interests. Entrusting strictly legal technicalities with the experts, the relevance of a bio-juridical analysis is to delve into the segregated meaning within the walls of contemporary anthropological-cultural fluidity. For this reason, the parallelism of Professor Jill Marshall with "1984" by George Orwell<sup>20</sup> is preserved within a circular discourse between identity, self-determination, freedom, and ancestry (in various forms) of post-modern power during evolution of the process, with explicit references to the Human Genome Project<sup>21</sup> combined with bioethical dilemmas, as well as to bio-law, the reference concerning the creation/description of the Self, and on the interference of the concept of equality, from which stems the concept of acceptance. There is a clear contrast between the idea of how we should, and how we

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<sup>19</sup> T. MCCOMBS – J. SHULL GONZÁLEZ, *Right to identity*, International Human Rights Law Clinic at the University of California Berkeley School of Law, Berkeley (CA) 2007, p.11

<sup>20</sup> Cfr. J. MARSHALL, *Human Rights Law and Personal Identity: An Introduction*, in «University of Leicester School of Law Research Paper», 14-30 (2014).

<sup>21</sup> <https://www.genome.gov/human-genome-project>

would, like to be/to become. With the contextualization of the community as a whole, all of humankind constitute the official site of our full development in the world, and the potential danger that this mechanism would undergo with massified control infiltrations (for example, see the “Big Brother” in Orwell and the non-ideological alarmism in force with the advent of new technologies), which invalidate the dignity and freedom of every human exposed to one’s own action. Human rights are born to constantly monitor the defense of self-assertion, untied to external attempts that corrupt human dignity or the oppression of the legitimate exercise responsible for personal freedom (not synonymous with license) whose framework legally corresponds to the faithful dual relationship between rights and duties. Thus, its avoidance, among the many characteristics we are made of, is a sufficient and even necessary reason to despotically harm its value. This does not fail in the design of scientific investigation. If the dimensional scope of the object at issue holds the ambivalence inherent in technology, it can be potentially revolutionary or equally potentially destructive, as history teaches and reminds us. Human rights certainly offer solutions to this predicament, as they are found in the centrality of the human being and, without a doubt, in one’s undelayable understanding as a subject and not as an object. A human being knows how to open and close a dialogue on multidisciplinary divergences and the various existing ethical models, and as a beating heart of mutual recognition between similars, and only then, when being a requirement for an advantage produced by the cognitive conquest of the neuronal machine.

Reductionist materialism, both in the computational version and in the neurophysiological version, indulges in the “eliminativistic” temptation. Therefore, John Searle criticizes tendentially eliminativistic materialism, supporting the eliminability of conscience and conscious states, because a conscious life without any reference to a “first person” is impossible and unthinkable.

(...) The “person” is therefore always something more than the subject, because the subject is abstract, but the person is the singular subject located in the world, and open and exposed to it. Therefore, the inner “events”, (the so-called *qualia*, the colors, the tastes, the feelings, the affections, etc.) are always someone's events and their meaning is incomprehensible outside the whole context of a life and a story strictly personal. The person and each of us!<sup>22</sup>

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<sup>22</sup> «Il materialismo riduzionistico, sia nella versione computazionale, sia nella versione neurofisiologica, indulge nella tentazione “eliminativistica”. Perciò John

Based on the quality of discourses on the human being, it is evident that neurosciences, including the innovative interrelation between ethics, theology, and particularly law, benefit from the scientific heritage by administering a certainly sharper mind-brain image. Included in this is how binarism is based as much in individual-collective operations as it is in personal identification. However, this does not imply an irreconcilability of the permanence of an undiagnosed metaphysical-essential component, referring to the more “unpredictable” and voluntary traits of the mortal human nature. The mind, brain, and organism-body apparatuses propose – the trait to be implemented alongside the notion of “person” – the authentication of an integral unity synthesized in the Ego, on which the morpho-functional, psychological, and existential structure of consciousness is placed, which further appear in the cerebral apparatus, and in the global and mental experience configured in its mechanisms of meaning. This may exhibit as instances of recognition, pieces of extemporaneous, and authentic identity. The guarantor of the latter is the ability of human rights to be sentinels of the specific peculiarity of the human being, *Homo sapiens*, which is also *homo faber* or the one able to ask questions of meaning about his/her own nature. Now, “person” extends greater than any quantitative or qualitative parceling out. In fact, the abyss, generated by naturalizing conversions of conscience and freedom, stimulates passive automatisms within the traditional vision of the sentient individual, and is capable of intentional deliberation by virtue of a creative intellectual process, as Benjamin Libet's experimental thesis on the connection between the will and cerebral dynamism demonstrated.

Bioethics was born as a perspective of survival, as help is a persistent need for the support of the ambivalence imposed by the indefinite and inexact character of sciences, in particular those directly aimed at what the acting arm and the contemplative mind can fulfill towards other individual human beings, the environment or populations. In this sense, bioethics is a

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Searle critica il materialismo tendenzialmente eliminativistico, sostenendo l'ineliminabilità della coscienza e degli stati coscienti, perché una vita cosciente senza alcun riferimento ad una "prima persona" è impossibile e impensabile. (...) La "persona" è dunque sempre qualcosa di più del soggetto, perché il soggetto è astratto, ma la persona è il soggetto singolare situato nel mondo, e ad esso aperto ed esposto. Perciò gli "eventi" interiori, (i cosiddetti qualia, i colori, i sapori, i sentimenti, le affezioni ecc.) sono sempre eventi di qualcuno e il loro significato è incomprendibile al di fuori del contesto intero di una vita e di una storia strettamente personale. La persona è ciascuno di noi!»; M. SIGNORE, La coscienza, tra l'identità soggettiva e la persona situata e aperta nel/al mondo, in «Idee», 70 (2009), pp.9-10



bridge that connects the two coexisting souls of the human being, the scientific-rational and the ethical-metaphysical. Bioethics are called, only within these terms, to guarantee a manageable future, even more crucial nowadays, where ethnic, cultural, geographical, value-based, and religious distances enjoy the privilege of an extremely close, empathetic, and possible, dialogue. Human rights, and the task of justice in general, preside over this view by lending itself as a variety of goods representing and protecting the most fragile and profound meaning of the human condition, whose “positivization” does not coincide with its foundation, which is provided with an impenetrable framework that is not subject to circumstantial precepts. It can so be stated, by affirmation, that there exists the pre-existence of human rights with respect to any other particular positive law, and therefore they have an extemporaneous and universal value, which undermines the shadow of the danger of a right against the human being instead of a right for the human being: «the right is the condition of possibility and thinkability of the universal relationality, of the com-possibility of liberties»<sup>23</sup>.

Neurosciences touched an apex at first only imagined, akin to bioethics, what is now called neurobioethics or neuro-ethics. The intention is not to support unreasonable phobic alarms, but rather a gesture of recognition and gratitude towards the tangible contribution given to the container of the common good, which is incessantly evolving and sifting through the guiding light of the principles of responsibility and precaution. The cerebral gear, objects of analysis, and technological innovations garner appreciation for the mystery of a corporeality that remains elusive to the exhaustiveness of knowledge. The fountain of knowledge dispels the theorization of the human being based on a pure biologization in evolution or a pretext of possession. Thus, studies on the conscience, like the whole neuroscientific circuit, will not be equipped to allow domination of the person, but rather will provide the advantage of unprecedented reasons to guard and respect, and not to exploit the individual. Human rights are the echo of this global calling.

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<sup>23</sup> «il diritto è la condizione di possibilità e di pensabilità della relazionalità universale, della compossibilità delle libertà»; F. D’AGOSTINO – L. PALAZZANI, *Bioetica. Nozioni fondamentali*, 2 ed., La Scuola, Brescia 2013, p. 100

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## CHAPTER 3

# THE NEURO-PSYCHO-SOCIAL MODEL OF ANTHROPOLOGICAL INTEGRATION OF CONSCIOUS AND FREE WILL EXPERIENCES: A SHORT NEUROBIOETHICAL APPROACH TO HUMAN IDENTITY AND PERSONAL RESPONSIBILITY

ALBERTO CARRARA

### **Abstract**

Contemporary thought on the two anthropological concepts par excellence that shape and form the human person - consciousness and free will - will be enriched by the fascinating and growing field of neuroscience. Beginning with the neuroscience-based perspective concerning the neural correlates of conscious experience and of free will, in order to move successively onto the circular dynamics of the *top/down* and *bottom/up* processes inside and outside the human brain, the author highlights a dynamic and circular vision of the human brain, mediating as a sort of “bridge”, a better understanding of identity and personal responsibility. This approach is typical of neurobioethics, which combines the first-person experience as a unified living organism with the third-person perspective of the “embodied” and “embedded” human activities of conscious experience and free will. The bio(neuro)-psycho-social model presented in this paper is a “conduit” that mediates between the microscopic world of neurophysical processes and the macroscopic dimension of the living human being whose conscious and free will experiences *shape* and *form* one’s identity and personal responsibility.

## 1. Introduction

There is no doubt that both clinical practice and human self-understanding have benefited from contemporary neuroscientific developments. Progress, to truly serve human welfare, needs to be guided, directed, encouraged, corrected, and improved. This task presupposes a certain view of the nature of a human person, that is, an underlying anthropology.<sup>1</sup> Seldom will the concepts and constitution of a human being convert to clinical, economic, political, social, and cultural formations that promote integral development.<sup>2</sup>

Currently, interdisciplinary research on the nature of the human person includes not only traditional disciplines of philosophy, psychology, sociology, and medicine, but also the empirical results of various fields of neuroscience and neurotechnologies and their respective interpretations. This fruitful dialogue has coalesced into a single concept — neuroethics.<sup>3</sup>

There are basically two anthropological concepts that function as “catalysts” in neuroscientific research and in the corresponding philosophical-cultural (and mass media) thought of our postmodern day — the concepts of *consciousness* and *freedom* (or free will). Not surprisingly, an understanding of the underlying meanings of these concepts constitutes our vision of the human person. We are faced with two paradoxes. If, on the one hand, the reality of consciousness (understood as subjective experience, i.e., the

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<sup>1</sup> Fuchs T (2006). Ethical issues in neuroscience. *Curr Opin Psychiatry* 19 (6): 600. 10 years ago, the German psychiatrist and philosopher Thomas Fuchs wrote a milestone work concerning the reflection about the ethical topics related to the applicability of neuroscience and neurotechnologies and identified the key trends that we see now increasingly more and more touching our lives and invoking trans and post-humanist scenarios of various kinds. Fuchs recalled the need for a critical assessment of the anthropological conceptions underlying these trends.

<sup>2</sup> In English, the concept of “personal integral development” is condensed by several authors in the term “flourishing”. The American neurobioethicist, James Giordano, for example, has linked this concept the of Aristotelian-Thomistic matrix to contemporary neuroethical thought, coming to identify a set of principles for a “proper human flourishing”. See JR, Giordano J (2014). A Principled and Cosmopolitan Neuroethics: considerations for international relevance. *Philos Ethics Humanit Med.* 9 (1): 1-13.

<sup>3</sup> The term “neuroethics” dates back to 1973, although its characterization and diffusion has begun to take shape and texture since 2002. Pontius A. A. (1973). Neuro-ethics of “walking” in the newborn. *Percept Mot Skills* 37 (1): 235-45. Marcus S ed. (2002). *Neuroethics: Mapping The Field*. Conference Proceedings. May 13-14, 2002 San Francisco, California. New York, The Dana Foundation.