

Editorial

Neuroethics scope at a glance

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Abstract

The term neuroethics defines the bioethics field that deals with the dilemmas arising from the development of the neurosciences. Why are we so sensitive to ponder on neuroethics? Because it involves the brain, the organ responsible for our perceptions, our thoughts, and our conscience; and its knowledge and/or manipulation entail the most genuine and nontransferable aspects of the human being. Since 2002, neuroethics has been recognized as a new discipline that offers an area of consideration for neuroscientific knowledge and the actions regarding human beings as individuals, and the society as an organization. Within its framework, we can distinguish two branches: fundamental neuroethics and applied neuroethics. Neuroethics demands that we are on alert, and we offer the possibility of interdisciplinary exchange programs, encouraging society to participate, promoting the ethical opinions, and even working with anticipation on the dilemmas that are already emerging. Science does not stop, and its development has acquired such an accelerated pace that there has not been enough time to discuss its processes. We are convinced that neuroethics will be for the 21st century, what genetics was for the 20th century.

Key Words: Bioethics, neuroethical, neuroethical issues, neuroethics

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R. E. Crawford used the word neuroethicist for the first time in 1989 when referring to a neurologist as an ethical agent. In 1991, Patricia Churchland from the University of California, brought up the ethical questions related to the conception that we have of ourselves from a philosophical standpoint. In 1993, Professor A. Pontius investigated several neurophysiological and neuropsychological aspects of education and children's developments. Then, the first Congress on Neuroethics organized by the Dana Foundation, The Stanford Center

for Biomedical Ethics from Stanford University and the University of California, was carried out in May 2002.^[12] This meeting gathered 150 neuroscientists, bioethicists, philosophers, lawyers, and outstanding professionals from different branches of knowledge who participated with the objective of defining the limits and incumbencies of neuroethics and analyzing its present and future impacts.

Since 2002, neuroethics has been considered as a new discipline that offers an area of consideration for neuroscientific knowledge and actions regarding human

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beings as individuals, and the society as an organization. Within its framework, we can distinguish two branches: fundamental neuroethics and applied neuroethics.^[7]

Fundamental neuroethics deals with research work on neurosciences and with its relation to the understanding of moral phenomena and of human behavior. Modern neurophysiology that among other things permits through magnetic resonance images to visualize the normal and pathological functions of different brain areas; as well as the advance in genetics, make us think of the organic cerebral basis which participate in thought and in the moral judgment, with the consequent implications that this might have upon legal, social, and philosophical matters. Therefore, the questions start emerging from a practical standpoint. If there are cerebral areas that appear to be connected with some personality traits or with the way individuals are, is it correct to measure them? And even furthermore, would it be legitimated to use certain tests before, for instance, hiring a person for a job, or for a political position, or to justify crime in a courtroom trial?

The knowledge of cerebral functions in recent years with important advances in the understanding of the neurobiological basis of the normal brain has allowed us to clarify some of these issues; nevertheless, this same knowledge also provides us with tools that may be used, not only to know but also to influence and modify the actions and behavior. Once these mechanisms are well known by politicians, opinion leaders, publicists, or those in the commercial and marketing fields, their inadequate use might transform them into manipulation.

Another particularly important point to be considered regarding neurobiology is the nutrition; and the cultural and social factors which influence the cerebral development at any age; issue important in the most vulnerable people groups, those in early childhood, but also and not less important in elderly.^[4] As a result, the impact of nutrition together with the supply of stimuli for the development and maintenance of the neurocognitive aspects are strongly connected with social environments. This matter is not alien to the scope of neuroethics.

Fundamental neuroethics, then, tries to answer the questions that involves human nature such as the dimension of concepts of autonomy, free will, responsibility, and deliberateness in our acts, thus, challenging the place of the moral in our society. These concepts are so revolutionary that it may be feasible to state that neuroethics precedes the traditional bioethics because it might question the classical moral principles.

On the other hand, the evolution of the neurosciences brings about the applied neuroethics, which is less broad than the fundamental neuroethics. It entails carrying out the ethical evaluation of research, and also of

diagnostic and therapeutic applications within the area of the neurosciences. It is related to sciences such as neurology, neurobiology, neurosurgery, and mental health. We can mention various examples such as information from images, modern surgical procedures, invasive and noninvasive cerebral neuromodulation, psychotherapy in any of its forms, psychosurgery, pharmacologic therapies, genetic studies to predict neuronal degenerative diseases, and more.^[1,2,5,6,10,11]

Within the immense spectrum of new applications, some appear that seem to require even further analysis, since they do not merely aim at healing but rather at searching for perfectibility. Thus, “the enhancement” rises as the search for perfection through the “increase” of neurocognitive faculties that are artificially induced by using drugs or noninvasive magnetic stimulation of the cerebral cortex.^[1,2,11,13] Is this fair? And if so, should this be available to all or just only for some cases? And furthermore, who should finance this?

The applied neuroethics must be committed to protect the principles of autonomy; of wellbeing and not of wrongdoing; and to promote the debate of these matters to generate consensus. Fundamental as well as applied neuroethics try to understand which the ethical implications that arise from the transference of knowledge to the medical practice and to the public opinion are, and also that have or may have repercussions on the individual and on society within the social and political fields.

While we continue working on these topics, reality confronts us with another aspect of the assistance practice that relates to equity. Let’s remember that the impact of the diseases that affect the nervous system is devastating in terms of public healthcare.^[8] It is estimated that nearly 30% of the population suffer from diseases of the nervous system, comprising mental health, neurology, or neurosurgical ones, and that it represents approximately 35% of the health expenses. It is necessary to aim at distributive justice to establish and/or to consolidate the mechanisms that could favor the access to health resources for everybody who needs.^[9,10] A feasible alternative could be for motivated physicians with neuroethics training to participate in the organizational areas of public and private health systems together with sanitary professionals and health economists to agree on concepts concerning the development of institutional health policies.

Today, there are issues that seem to belong to the world of fantasy or science fiction and yet they are incredibly close to reality. Not very distant questions will be appearing in the short-term regarding the neuronal restoration with stem cells; or brain chip implants to replace certain cerebral functions; or if somebody wanted

to be implanted a chip to learn a subject without having to study; or if he/she chose to selectively erase the painful or traumatic memories. Last but not the least conflictive is the head transplant with spinal linkage proposal known as head anastomosis venture project.^[3]

Science does not stop, and its development has acquired such an accelerated pace that there has not been enough time to discuss its processes. Neuroethics demands that we are on alert and that we offer the possibility of interdisciplinary exchange programs, encouraging society to participate, promoting ethical opinions, and even working with anticipation on the dilemmas that are already emerging. We are convinced that neuroethics will be for the 21st century what genetics was for the 20th century.

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Commentary

NEUROETHICS – AN OPPOSING AND SKEPTICAL VIEW

At first glance, this new specialty of neuroethics may seem to be just what the doctor ordered. But who is the “doctor,” who orders this panacea for a mild, if not evanescent, an ailment for which there are already effective remedies? Moreover, the new medication may have complications far worse than the purported illness.

Neuroethics is described as an exciting new field for the reasons mentioned by the author(s) namely, the potential for helping unravel the mysteries of human behavior and the workings of the brain; the advances in genetics; the mechanisms and correlations of neurobiology, and its interrelation with sociology and neuropsychology, etc. Indeed, as the author(s) recount the neuroethics seems a fascinating field, if only we could ascertain there are no other hidden reasons for its promulgation and sponsorship by the state and other agencies! It seems that neuroethics is akin to bioethics and this connection is troubling.

Just last year, the USA President Barack Obama launched the Presidential Commission for the Study of Bioethical Issues. Why do we have to have the government involved in bioethics or for that matter alter the noble code of medical (and scientific) ethics?

I think, the neuroscientists (and the burgeoning “neuroethicists”) should adhere to a code of medical ethics dictated by their professional calling and moral code and not societal or politically motivated ethics imposed or even influenced by the state. These ethics should be derived from the traditional and individual-based ethics of Hippocrates, centered on the individual patient and human subject, rather than utilitarian, population-based ethics that place monetary considerations, governmental funding, or the interest of third parties, society at large, or the state ahead of the interest of patients and human experimental subjects. The commentary in question reaffirms that neuroethics are more akin to the latter, to bioethics, to politics, and to societal considerations rather than the need for new ethics in science or medicine.

The author(s) write: “Nevertheless this same knowledge also provides us with tools that may be used, not only to know but also to influence and modify actions and behavior. Once these mechanisms are well known by politicians, opinion leaders, publicists, or those in the commercial and marketing fields, their inadequate use might transform them into manipulation.”

I concur, except that the biggest danger is not cited by the author(s), and it is definitely not private entities but the state itself, if history is any guide. There is an intimation of knowledge by mentioning “politicians,” but that is

a far cry from being a real warning. The state working through its agents and associates in government is the main sponsor, if not the aforementioned “doctor” itself who ordered the panacea. Good and bad governments come and go but the state remains, and bad governments influencing, if not controlling science and medicine through a new specialty, might not be a good thing.

In the same paragraph lays the danger of creating a whole specialty ready-made for potential exploitation by governments, that do not always have the best interest of patients at heart. If neuroethics were to remain independent from governments and impervious to the pervasive influence of the state, there would be little to fear, and we could allow the science of neurobiology and ethics to carry on a fruitful romance. But, if history is any guide, this exciting a new discipline is subject to or rather is ready-made for political abuse, as governments continue to grow more powerful, more collectivist, and more authoritarian in general, despite the veneer of global prosperity, and the burgeoning of liberal democratic governments around the world.

The author(s) write: “These concepts are so revolutionary that it may be feasible to state that neuroethics precedes traditional bioethics because it might question classical moral principles.” But, there is nothing traditional about bioethics; in fact some of the evolving tenets of bioethics are, plain and simple, scary!

Here is the dilemma of what to do with unwanted newborns solved by two bioethicists using the utilitarian paradigm of both bioethics and neuroethics:

(1) Fetuses and newborns do not have the same moral status as actual persons, (2) the fact that both are potential persons is morally irrelevant, and (3) adoption is not always in the best interest of actual people. Therefore, what we call “after-birth abortion” (killing a newborn) should be permissible in all the cases where abortion is, including cases where the newborn is not disabled.^[9]

Other examples, hardly needing citation, are the bioethics movement’s call for euthanasia upon reaching a certain age (i.e., “the duty to die”) and for certain disabilities, the withholding of food and water to chronically ill patients, assisted suicide, etc.^[2-5,12]

And “revolutionary concepts... questioning classical moral principles” is also not reassuring. It seems that those propounding and exalting neuroethics inadvertently expose more dangers than they allay fears.

Again I ask:

Why is it that the impetus for bioethics and neuroethics comes largely from nonphysician experts backed by governmental entities? Are legal ethics imposed on lawyers by “civil society,” “journalists,” “science

advocates,” or other “experts” outside the area of law? Are the ethics of journalists and politicians dictated by commissions or panels of physicians?^[3]

And then in page 4, the author(s) bring up the term “distributive justice,” which to many of us informed on this issue, means more bureaucracy, more regimentation, more socialism (i.e., wealth redistribution), and more authoritarianism, to bring about “justice” that is subjective and in the eye of the ideological beholder. The tenets of “distributive justice” are not necessarily reassuring to those of us who have studied the issue. The first term “distributive” is more telling. The redistribution (of wealth) is dictated by the politicians who curry favor and bestow largesse on political groups to which they owe their power. In short, distributive justice is not about neuroscience, ethics, or even justice; it is about social engineering and subtle professional control by those who have a vested interest in increasing the bureaucracy or in wielding political power. Access to health for everyone is a noble goal but compulsion in the form of collectivism and more socialism is not necessarily the way to bring it about. I prefer liberty with freedom of choice, traditional professional ethics, and free market incentives.^[7]

In relation to the hypothetical “enhancement” and “increase of neurocognitive faculties by using drugs or... by stimulation of the cerebral cortex,” the author(s) innocently ask, “Is this fair? And if so, should this be available to all or just only for some cases? And furthermore, who should finance this?” Of course, the implication is that these “Brave New World” futuristic treatments or recreational modalities should be financed by the state, and what the government finances, of course, it controls!

Physicians and neuroscientists should be concerned and wary about civil society (i.e., government) influencing and eventually imposing new paradigms revolving around bioethics and neuroethics emanating largely from outside their fields as regulatory mechanisms and regimentation of their own profession. I particularly fear the state entering the picture as a force behind both bioethics and neuroethics movements because history has shown that wherever the government has sought to control medical ethics and medical practice, the results have been as perverse as they have been disastrous for patients, doctors, and civil society.^[1-6]

I must repeat here, what I have stated elsewhere:

Once, the state enters the equation, it would, if history is any guide, tilt the balance, not on behalf of the individual patient’s interest, but in its own budgetary or political interest. And so, were this process to go forward, the physicians must guard the interest of the patient (or human experimental subject) first, and the

collective benefit to society, second. History forbids it otherwise.

Participating physicians, surgeons, and researchers (in bioethics or neuroethics) must be very careful and remember what has been written and restated elsewhere. In the 20th century, both in the communist Soviet Union and in National Socialist (Nazi) Germany, medicine regressed after these authoritarian systems corrupted the ethics of the medical profession and forced it to descend to unprecedented barbarism. The Soviet psychiatrists' and the Nazi doctors' dark descent into ghastly experimentation and brutality was a product of physicians willingly cooperating with the totalitarian state, purportedly in the name of the "collective" or "greater good," at the expense of their individual patients.^[8]

Traditional medical ethics centered on the individual-based ethics of Hippocrates' first consideration is to individual patients in clinical medicine and human subjects in medical research. Bioethics and neuroethics, in contrast, are humanistic, utilitarian, population-based ethics that place monetary considerations and the interest of third parties e.g., society, corporations, or the state ahead of the interest of patients.^[3-8,10,11]

I'm sure there are well-intended neuroscientists that are unaware of these unintended potential consequences and will embrace the novelty of neuroethics warmly. I hope this commentary at least provides the basis for some healthy skepticism and some personal introspection.

To me what becomes clear after digging under the surface is that there are social and economic goals and repercussions intrinsic to the new specialty of neuroethics (as well as bioethics) that may impact adversely. Neuroethics seems to be crafted as to be another vehicle for the state bureaucracy and government planners to alter professional medical ethics and manipulate science and medicine as well as to accomplish social and economic engineering through the back door. Genetics in the 20th century was about genuine scientific medical advances and great benefits to humanity. Neuroethics in the 21st century may be more about societal engineering via the manipulation of neuroscience, and the result may be more like the dystopia of the 1932 science fiction classic by Aldous Huxley — *Brave New World*.

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