

Neuroethics, Extended Mind and the Functionings Approach: An Overview

Neuroethics, despite being a fairly recent field, has two corollaries reflecting grounded conceptions that were inserted into the history of philosophy a long time ago.

- 1) Interventions in the brain are uniquely and distinctively interventions in mental states that make up our identities;
- 2) Neuroethics is concerned with the question of whether we should allow interventions in the mind (Neil Levy, 2007, p. 7).

Based on the extended mind and the Functionings Approach I will argue that these corollaries not only are problematic, but also raise false dichotomies which must be suppressed in order to expand our moral consideration.

Let us focus on the first assertion, since the second assertion is derived from the first. The core of the first corollary consists of differentiating and establishing a dichotomy between the brain and the environment, in other words, only interventions carried out directly in the brain are considered constitutive and influencing of the identification process; whereas external elements do not constitute a sufficient causal role in comprehension as well as in changes in personality traits and consequently, in identity.

Table of the identification process according to the corollaries of Neuroethics	
Brain Majority container of the identity of the cognitive agent. The boundaries of the Self are located only within the skull.	Environment Considered as secondary and/or complementary characteristics. In this category are elements such as the body, the physical environment, artifacts, etc. None of these have causal power or influence on a subject's identification process.

The latent consequence of this type of conception is to promote the idea that everything that relates to the identificatory qualities of an entity depends, first and foremost as well as ultimately, on the brain. For example, subjects using a controlled medication to treat a mental pathology to improve their modus vivendi may not include the psychotropic drug as a constitutive element of their personalities, no matter how much they depend on the medication.

In another scenario, visually impaired people who use canes for the cognitive calculation involved in their locomotion, nor even users of computers that download their memory onto files scattered among their electronic devices, cannot consider those artifacts as constitutive parts of their personal identity.

To break with this line of thinking, I turn to the perspective of the extended

mind, from the philosopher Andy Clark. This idea proposes that various aspects of the environment can form part of our cognitive process and, moreover, in some cases, become part of our identity.

Let us consider the most well known example from the literature on the extended mind, which is the case of the patient with Alzheimer's, Otto. The scope of Andy Clark's thesis is the presentation of a mental experiment in which Otto, an early stage carrier of the disease, takes a notebook with him everywhere he goes, in which he takes down all the information relevant to his getting around in New York City. In behavioral terms, his impaired biological memory can be exchanged for the information contained in this trustworthy data bank, namely his notebook.

The notebook comes to be considered a system attached to the subject. It contains all the necessary information for the patient to live his life in a reasonable way, that is, the cognitive agent Otto visualizes the information he would like to access, looks into his notebook and, based on the information he has recorded, will carry out a subsequent action.

The information need not necessarily be stored in the subject's brain. What is essential is for the coupled system to be available in the environment, to be reliable, quickly applicable to the task at hand, and finally, to be the method used by the subject. Thus, to fail to accept that the use of the coupled system for behavioral purposes has the same causal role as the memory of a personal in a condition biologically superior to Otto seems to subordinate the environmental benefit we see merely to one that privileges the biological set, as opposed to seeing a significant portion of the performance of the cognitive process.

Up to this stage of the argument, I will argue that the use of a medication or a notebook as a repository of long term memories are not merely helpful aids, but can in fact be considered influential components in the process of affirmation of a subject in the world. Thus, I intend to sketch out my first conclusion: **the environment makes up a substrate essential for the cognitive calculations of any human being.**

Therefore, as we insert the environment as an essential element under the theoretical and cognitive umbrella, we must reexamine two very valuable elements, that is, human nature and the personal identity of an agent.

To this end, we present the functionings approach of the philosopher Maria Clara Dias. She argues that we must individuate human beings functionally. In other words, she does not advocate Cartesian dualism – which argues for an immaterial soul, or in contemporary terms an immaterial mind – nor materialism, i.e. the thesis that argues that the individuation of a human being is exactly identical to his or her physical composition. Differently from these, Dias relies on a theory of the philosophy of the mind, namely, functionalism, to argue for a functional characterization of all living beings and objects.

To examine this conceptualization, she turns to a definition often explored in the literature of the philosophy of the mind, that of a corkscrew. We can say that the corkscrew is a cylindrically shaped object with two metal arms. However, Dias makes us aware that this definition is merely *one* possible way to conceptualize the object.

What is paramount in this scenario is not the format, let alone the physical constitution, but rather the function or role that the object plays within a specific framework. Therefore, the functional description establishes that we are performers of specific functions among inputs, outputs and behaviors in certain contexts.

The possibility of this conceptualization comes from the interpretation that a subject's mental states are interpreted in light of their functions, and thus are functional states, since this implies material need, but their definition is not limited to physical composition, but rather they are defined by the role performed in the structure of the functional systems.

Therefore, human nature is devoid of the rigidity of the special and sometimes Speciesist biological set. We are functional systems characterized by our functions in specific contexts. I suggest, then, that we apply the extended mind and the functional characterization described by Dias.

The input, whether it is carried out internally/biologically, or whether it is an artifact, has the same equivalence in the composition of the functional system. Therefore, patients using a psychotropic drug or a notebook as an input, aiming to maximize the patients' functionings, do not invalidate their intention to reach a point of excellence in the fulfillment of their functions and their basic constitution to generate behaviorally satisfactory outputs. In other words, the processing of the functional states does not depend on the material basis requested for a given demand.

It is therefore necessary to suppress the idea of the neuroethics of the above mentioned corollaries as well as the idea of a biological set. Additionally, we ought to exchange the expression biological/organic set for, simply, the informational set, that is, the pieces of information concerning the paradigm of functional system form the multiple realization of the functions, independently from a specific material base.

A figure, taken from the book *Kinds of Minds*, by Daniel Dennett, illustrates this idea.

Starting with this non-rigidity of human nature we can soar to greater heights and investigate characteristics that make up personal identity. Identity is commonly discussed in the philosophy of the mind as the *self*. The *self* has as its principle to individuate the self-conscious subject, that is an entity that can establish and assert itself about its existence persistently in time.

To do so, it requires the agent to have a series of beliefs and desires, i.e. mental states of high complexity to sustain the identification and individuation of a subject. Thus, it is imperative to describe the *self* in functional terms. The identity is transformed from a single unit into a network of microsystems that possess various processes in conjunction. The *self* for Dias, in its functional characterization, will join together the external (environmental) aspects, which are also considered microsystems benefitting a larger system.

The construction of the *self* expands and not only involves the brain, but a cluster of elements that are perceived as part of the execution of the cognitive process. Thus, there is a dynamic system that works between performers and operators of

functions and they are in constant interchange. An *input* may, at a specific time, be an *output*, depending on the required task. Additionally, notes in files in our computers, reminders written on papers and marks left around us are shortcuts as valuable as the biological set and extremely important for our cognitive economy.

To begin final remarks, the functionings approach attempts to infer the basic functionings of the various functional systems – in this case, human beings – and to understand the behavior and specific needs of each one to try to reach a desired level of satisfaction.

Thus, we conclude that the functionings approach eliminates the conceptualization previously explained of the corollaries of neuroethics. Therefore, we reach a broader moral vision that does not exclude from our moral calculus coupled systems such as artifacts, medications, as well as all sorts of elements that may make up a satisfactory *input* and reach the full flourishing of an entity and the affirmation of his, her or its identity.