Widening the extended mind theory: the mind as a capacity

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INTRODUCTION. This a theoretical poster. Its explores the way for a comprehensive understanding of the human mind. Philosophers and neuroscientists often reject the claim that their theory of the mind and of the mental phenomena is in any way 'reductive'. This adjective typically involves the crucial negligence of essential features of the subjective and a too narrow scientific outlook. I show here that by adequately connecting the theory of the extended mind (EM) with the philosophical theory of capacities or abilities, which is attributed to Aristotle (IV b. C.), such negligence can be avoided. A more precise, integrative and open-ended view of the mind emerges then, a view which I will only sketch here

Neuroprosthetics

Image 1: Many consider CNPs as hihgly-integrative devices which can easily become part of the CNS (© The Dana Foundation)

Cognitive neural prosthetics (CNPs) are being currently tested to help patients with paralysis to successfully perform some basic tasks in a computer. This is a step forward which promises to simplify everyday life for many patients. CNPs also promise to restore mobility or communication by way of artificial limbs and other devices. Their use poses a number of ethical and philosophical questions. For instance, if CNPs, whether organic or not, can be seamlessly integrated into the subject's neural network and be made to work as neurons in everything which is relevant to tasks-performance, should they be considered as an intrinsic part of the neural network? Could they be looked as a legitimate part of the SNC and hence be taken as part of the mind itself?

The extended mind theory

CNPs link into a philosophical theory which has expanded the content and whereabouts of the mind. The extended mind theory (EMT) contends that the mind and its neural pathways do not confine to the limits of the skin-and-skull barrier, but extends in equal proportion to external objects interacting with it. Depending on the degree of integration of these object, they may be called to be part of the mind as neurons are claimed to be so. And so, if a patient with a neural implant is made capable of reading and producing it corresponding neural waves not just to performing ordinary tasks with artificial limbs, but also to enhancing her speed in calculation, the neural implant, whether organic or not, should be credited as part of the neural system tout court. It should be considered true, as the EMT proponents hold, that epistemic action demands spread of epistemic credit (Clarke & Chalmers, 1998: 8). And so if you can perform epistemic actions with credit without CNPs, your being capable of performing the very same actions through CNPs would not only make these actions epistemically valid, these would also imply that CNPs have to be credited as part of the intelligent system, that is, of the system to which your mental abilities are coupled when on work.

The mind as a capacity

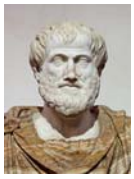

Image 2: Aristotle (384 BC-322 BC). 'It must then, since it thinks all things, be unmixed (...) in order that it may rule, that is in order that it may know; for the intrusion of anything foreign to it hinders and obstructs it; hence too, it must have no other nature than this, that it is potential' (429a 18-23)

The mind can be seen as an exceedingly sophisticated capacity, the capacity to know or to acquire knowledge of things without altering their nature as they are known—by contrast to physical processes like burning, which by releasing energy enforces irreversible a physical changes in substances—. Aristotle explains the mind as an incorporeal capacity of receiving intelligible natural forms from the external world (429a 13ff.) and understanding the world through them. Of course, although he claims that the intellect is 'unmixed'(429a 18), in fact it is embodied in a human being which has organs. These organs are the seat of the perceptual faculties and these faculties are tightly knit to the mind or intellect.

The view which looks at the mind or to knowledge as a capacity is still in good shape (Hyman, 2006). Philosophers have argued that capacities can be defined by what they are capable of. You can then go on and define the intellect as a capacity for human abilities (Kenny, 1989:123; 2000:68). Capacities are different from their exercise. To melt is a capacity of gold. Whereas gold melts at 1063ºC, this capacity does not necessarily imply that melting at 1063ºC is a constitutive part of any gold coin. It is surely one of its properties, but this capacity is not in any part of it. We do not need to be told about the parts of a gold coin to know that in normal conditions it will melt at 1063ºC; you might even argue that both issues seem unrelated. Similarly, the capacity of flying of an airplane is not in any or every part of the airplane, such as its engine or its wings. We might say that matter is usually the *vehicle* of many and different capacities, but this vehicle is not all what there is to the capacity. There is always more to it.

Image 3: Some gold coins. You will be unable to tell which part of these gold coins unlocks their capacity to melt

Capacities and vehicles go together. By their inseparable work on the brain and in several other motor or perceptive systems of the SNC, the mind widens its operating theatre beyond the scope of subjective consciousness. In this, externals are crucial. The EMT contends that 'the external features in a coupled system play an ineliminable role – if we retain internal structure but change external features, behaviour may change completely' (Clarke & Chalmers, 1998:9). Inasfar as the features of a neural network may be crucial to the understanding of the relation of that network with the environment through natural organs and its operations, CNPs devices, no matter whether biologically foreign or native to the SNC, play a crucial role, for they boost the capacities of the mind as far as these capacities can get. This is coherent with the EMT and is precisely what CNPs are designed to do: to allow the mind reach out to externals, as when, for example, your hands manipulate an object guided by your intellect.

Capacities and reductivism

Most capacities of the mind are described at a human level, not at a molecular or cellular level. For example, speech cannot be fully captured when limited to the activation of selective or unspecific brain areas. Speech is language, and this involves grammar, syntax, communication and human interaction at the higher of explanation level. In the same way we understand, e.g. that the mind is a capacity for thinking. Of course, since the capacities of the mind are interlocked with neural systems—albeit some capacities are more so than others—the description of what they do when on work is not coincidental with the description of its parts. These parts are rather the vehicle of the operations which it does. This is why it is more coherent to argue with the EMT that the material parts are constituents of its capacity, rather than to argue that the capacity is part of its underlying parts.

Image 4: A monkey feeds itself during a three-dimensional brain control task. In this experiment the monkey controlled the velocity of the arm's endpoint. In subsequent experiments, the monkey also controlled the opening and closing of the arm's grip (© The Dana Foundation)

EMT is best understood when the capacities of the mind are seen as capable of operating with non-biological vehicles without being necessarily reduced to such vehicles. In this way the mind appears as higher in degree and outcome to other systems, particularly, those belonging to the underlying layers of reality. And so, my suggestion is that the capacity theory is a valid complement of EMT and that together, they pave the way for a richer and integrative view of the mind itself, eschewing so strong reductivism.

References

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