

TRANSCENDENCE AND THE ELUSIVE SCIENCE OF THE MIND¹

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Abstract

This essay shows the presence of transcendence in the on-going attempt to come up with a purely scientific account of the workings of the human mind. At the center of the developmental stages of this attempt is the computational theory of mind, which regards the human mind as some kind of computer. With Wittgenstein's analysis of the limits of linguistic representation in the *Tractatus* as a framework, it is argued that the various difficulties encountered by this attempt are primarily due to the transcendental nature of the human mind, which eludes scientific explanation.

INTRODUCTION

It used to be held that science could afford to ignore the human mind in its investigations, but somehow the idea that science can never be complete in its account of nature unless it also resolves the mystery of human consciousness persists. And so there have been thinkers who have attempted to come up with a scientific account of the workings of the human mind. Initial formulations of this account were met with doubts and skepticism, but with the entry of computer technology into the scene, things have taken a revolutionary turn (see Gardner 1987). With the enormous capacity of computers to simulate human mental processes, the dreamt-of science of the mind is believed to be already within reach.

To properly evaluate the prospects of the general project of coming up with a science of the mind, we need to look at the various shapes that this project has taken thus far, as well as the various difficulties that it has encountered. With Wittgenstein's analysis of the limits of linguistic representation in the *Tractatus* (1974) as a framework, I shall argue that the said difficulties are due primarily to the transcendental nature of the human mind, which eludes scientific explanation.

THE DEVELOPMENTAL STAGES

The use of computers in understanding the human mind has given rise to *computationalism* or the *computational theory of mind*, which regards the human mind as a computational system or a complex kind of computer. With this theory as the reference point, the development of the projected science of the mind can be divided into the *pre-computational*, *computational*, and *post-computational* stages.

¹ This paper was presented in the 3rd COMIUCAP World Congress held at the Ateneo De Manila University on Sept. 11-13, 2008. It was later on published in *Budhi: A Journal of Ideas and Culture* 13 (1 & 2 & 3): 481-487.

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The pre-computational stage is mainly a reaction against the *Cartesian* division of reality into two qualitatively different types of substance; namely: *mind*, the thinking but non-spatially extended substance; and *matter*, the spatially extended but unthinking substance. This dualism leads to the belief that there can only be a science of matter but never of the mind. In this regard, theories under this stage think that to establish a science of the mind is to reject the Cartesian mental realm and to redefine the mind as some kind of matter as well. Two theories serve as paradigm representatives of this stage; namely, *Behaviorism* and the *(Mind-Brain) Identity Theory*.

Behaviorism argues that what we call “mental states” are nothing but the body’s actual and possible behaviors. On this view, to have a mental state is to behave or to be disposed to behave in certain ways. On the linguistic level, this means that mental terms are mere abbreviations of behavioral terms. For instance, to be in pain is to be disposed to behaviors like crying, wincing, and saying “ouch.” The Identity Theory, on the other hand, contends that what we call the “mind” is nothing but the brain; and consequently what we call “mental states” are nothing but the brain’s neural states. For instance, to be in pain is for the C-fibers in the brain to be stimulated. The identification of mental states with brain states is believed to be no different from the scientific discovery that lightning is an electrical discharge or that water is H₂O.

The computational stage is the stage where computationalism becomes the dominant view of the mind. The projected science of the mind based on computationalism is called *Cognitive Science*, and it is endorsed by some well-known scientists working in *Artificial Intelligence* (see Simon 1995), the discipline that studies intelligence in relation to computers. On this view, also called the view of *Strong AI*, the human mind is a kind of computer and the computer itself has a mind. More specifically, it claims that the human mind is a program or a set of programs that is implemented by the hardware of the human brain. As such, mental states are seen as the computational states of an implemented program in the brain. A critical feature of this view is the *principle of multiple realizability*, according to which, as the same program can be run by multiple kinds of hardware, the human mind can be run by physical systems other than the human brain, say one consisting of silicon chips. This principle paves the way for the possibility of machine intelligence or a computer possessing a mind.

Finally, theories under the post-computational stage are critical of the account of Strong AI, and this is mainly because it leaves out the following basic features of the mind: consciousness (awareness), intentionality (the directedness of mental states towards some objects or states of affairs in the world), and qualia (the subjective quality of mental states). These theories see the actualization of the projected science of the mind in the possibility of a science that can accommodate these features of the mind. There are thus two sides to the arguments of these theories: a negative side, where computationalism is criticized; and a positive side, where an alternative view is advanced. For this stage, we shall examine the views of John Searle (1980) and Roger Penrose (1994).

Searle, through his *Chinese Room Argument*, argues for a fundamental difference between human thinking and the process of implementing a computer program. Accordingly,

implementing a program is merely an activity of manipulating symbols solely on the basis of *syntactical* properties and rules; while human thinking includes an awareness of the *semantics* of the symbols or what the symbols represent in the world. On the other hand, Searle's alternative theory, called *Biological Naturalism*, argues that mental states are higher-level biological states whose properties are caused by the physical properties of the brain during the course of evolution. Since they are emergent properties, mental properties such as consciousness are thus not reducible to the physical properties of the brain.

In the case of Penrose, he criticizes computationalism using *Gödel's incompleteness theorem*. This theorem proves that there are bound to be statements in any formal system whose truths are not derivable from that system. Accordingly, while the human mind has the capacity to know such truths computers do not since these machines can only implement their programs. For this reason, Penrose concludes that the human mind is not a computational system. His alternative theory, called *quantum consciousness*, on the other hand, argues that consciousness arises from the *quantum activities* in the *cytoskeletal microtubules* in the neurons of the human brain.

THE DIFFICULTIES

In the numerous arguments used to challenge the various theories of mind, some general patterns of reasoning can be identified. Let us take a look at these reasoning patterns in some of their concrete forms.

First, some form of inconsistency arises. Let us consider some standard criticisms raised against Behaviorism and the Identity Theory. Behaviorism is charged with circular reasoning for eventually making references to mental states when pressed to explain why certain mental states translate into behavioral dispositions. For instance, it is said that the belief that it is raining is translatable into a series of behavioral dispositions like to bring an umbrella if one is to get out of one's house. When asked to explain why one would want to bring an umbrella in this situation, the most likely answer is that he or she *desires* not to get wet. On the other hand, the Identity Theory is charged with *neuronal chauvinism* for giving undue preference to the human brain, which runs counter to the common intuition that some non-human organisms can likewise have mental states. Simply, if pain is equated with the C-fiber excitation in the human brain, what about organisms whose brain does not have C-fibers, should we immediately say that they are not capable of experiencing pain? What these arguments show is that the reductive projects of Behaviorism and the Identity Theory cannot be carried out consistently.

Second, something about the mind is left out in the explanation. Let us discuss one standard argument used against views that reduce the mind to some physical explanation: that qualia are left out in the explanation. Qualia refer to the distinctive qualitative feels of mental states. For instance, there is a distinctive qualitative feel in experiencing pain that is different from experiencing an itch. According to classic argument of Thomas Nagel (1991), even if we know everything about the physiology and behaviors of bats we would still not know what it is like to be a bat. The point is that if having mentality is exhausted by some physical

mechanism then just by knowing that mechanism we would know everything about mentality. But this is not the case.

And third, the mystery remains. Take the case of the mind-body problem. The Cartesian *Interactionism* is often criticized for portraying the mind-body relation as utterly mysterious, but most alternative accounts are also criticized for being equally, if not more, mysterious. Leibniz's *Parallelism*, for instance, tries to explain away the said mystery by saying that there really is no mind-body interaction and that the seeming interaction between them is just an illusion brought about by the pre-established harmony set by God. But rather than resolving the mystery, it creates more mysteries. Among others, what is the point of God in creating a totally deterministic world? Another is *Epiphenomenalism* which claims that mental states, as mere by-products of the physical processes of the body, have no causal powers. That being the case, it is however mysterious why we have mental states in the first place.

LANGUAGE AND THE MYSTICAL

It is normally assumed that language can be used to *adequately* represent *anything* in the world. This assumption is implicit in the existence of multifarious views about reality or the world, philosophical or otherwise, each claiming that it best represents what the world really is. Ludwig Wittgenstein, in his *Tractatus*, evaluates this assumption by looking into the conditions that make linguistic representation possible. And one of his important conclusions is that language in its representative function has limits.

Wittgenstein begins his analysis by clarifying the conditions for the meaningfulness or sense of *elementary propositions*, the most basic units of language in its representative function. Accordingly, the sense of these propositions, that is, their having truth-values, is explained by the *picture theory of propositions*, according to which for a proposition to be meaningful it should give us a clear idea of what state of affairs we should look for in the world in order to determine its truth or falsity, otherwise it is meaningless. The truth-values of elementary propositions then logically determine the truth-values of complex propositions.

There are two possible reasons why a given proposition fails to be a picture of a possible state of affairs. The first is that the alleged proposition is not really a proposition but is just mistaken to be such because of its deceiving grammatical form. The second, which Wittgenstein focuses on, is that the proposition tries to represent what it cannot really represent. Here, there is something that the proposition tries to represent but that something lies beyond the representing capacity of the proposition. While the first case is brought about by the ambiguities of language, the second one is brought about by the properties of language constitutive of language's unique mode of representation. These properties are what enable language to represent objects and events in the world in its peculiar mode. To further understand this, just contrast language's mode of representation with those of graphs, maps, computer simulations, toy replicas, and others.

What lies beyond the limits of linguistic representation is what Wittgenstein calls the *mystical*. And since the mystical is beyond what can be represented, then any attempt to

represent it would eventually result in meaninglessness. Now, the kind of language that Wittgenstein considers in his analysis is of the *truth-bearing* kind, of which scientific language is the paradigm model. In the framework of scientific language, Wittgenstein's concepts of meaningfulness and meaninglessness would thus correspond to scientific meaningfulness and meaninglessness, while the limits of language to the limits of scientific language. Consequently, scientific discourse would have its own mystical realm.

The human mind may very well be part of this mystical realm, for statements made about it often do not give us clear pictures of the possible states of affairs that must obtain in the world in order to determine the truth-values of such statements. This explains why the theories of mind advanced thus far run into the kinds of difficulties that we have earlier identified. Such difficulties arise despite the rigor of the various scientific frameworks, such as neuroscience, computer science, behaviorist psychology, biology, and quantum physics, used in investigating the nature of the mind. Furthermore, most intellectuals who carried out such investigation are not really lacking in the necessary expertise. The only way to make sense of this is to acknowledge the transcendental nature of the mind, which escapes scientific explanation.

CONCLUSION

The project of coming up with a science of the mind has taken a revolutionary turn with the emergence of computers. But difficulties surround this project in every stage of its development. Using Wittgenstein's analysis of the limits of linguistic representation as a framework, these difficulties are shown to be manifestations of the incapacity of scientific language to represent the nature of the mind. What science can meaningfully account for are merely the physical manifestations of the mind, such as its neural correlates and behavioral outputs. In this light, no scientific account of the mind can claim to be exhaustive of the full nature of the mind. But then it is only by acknowledging its limits, or by acknowledging the reality of transcendence, that science becomes a truly rigorous discipline.

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