

Mind and Body

The Nature of Their Causal Interaction and the Rise of Consciousness

By Nikolas Karalis, PhD Student, Centre for Integrative Neuroscience, Tübingen

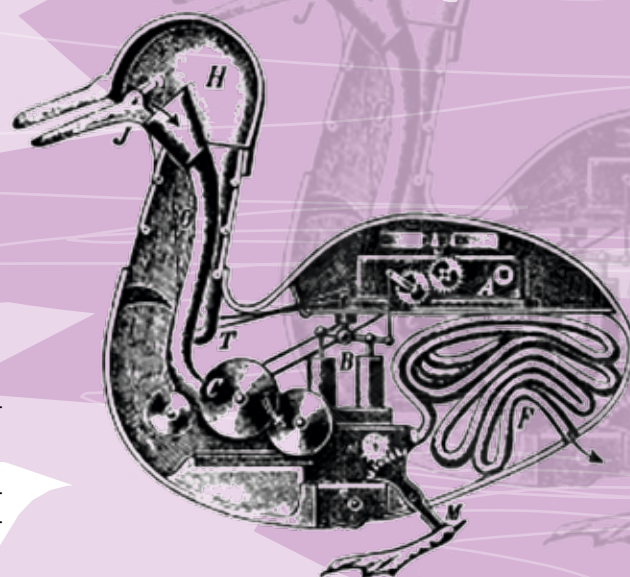
Ever since the earliest times of human thought, one major recurrent question that still remains unanswered relates to the inquiry into the nature of the human mind and its relationship with our corporeal existence. This primordial theme has provided the backdrop for much of classic and modern philosophy, and the answers proposed are almost as numerous as the attempts made to answer it. The ability to pose this question and reflect on it (i.e. meta-cognition) might be one of the defining characteristics of the human species. It builds on the concepts of introspection and personal identity (or self-awareness), concepts which some believe, however, might not be specific to humans [1].

The three major schools of thought on the mind-body problem are Dualism, Idealism and Physicalism. Dualism, with its roots in Plato, Aristotle, and later Descartes, makes a clear distinction between mind and body. Substance Dualism in particular differentiates the two on the level of substance (mental and material), while Property Dualism makes an ontological distinction, asserting the irreducibility of mind to matter. At present, modern neuroscience has provided arguments leading philosophical thought past these dualist ideas. Many non-western traditions incorporate concepts that refer to dualistic approaches (e.g. the five skandhas concept in Buddhism [2]). However, other traditions have a clear idealistic approach. In Idealism, whose different forms were brought forward by the great German philosophers of the 19th century, is primarily concerned with mind being the only true reality that underlies the world, and matter is seen as just being a phenomenon arising from the mind [3]. Physicalism, at the other end of the idea spectrum, treats the world as composed purely of physical objects. In this context, body is the only thing that exists and mind is merely the functioning of the brain. According to Reductive Physicalism, mind can be analytically reduced to material processes while Non-reductive Physicalism holds that mind emerges from but cannot be reduced back to physical events [4].

The mind per se is not easily defined. It can contain conscious as well as non-conscious components. The latter com-

prises unconscious emotions, automatic motor responses and pre-conscious components of low-level sensory processing, although the classification of these components as part of the body or the mind is not definitive. The conscious mind is, in contrast, composed of sensations, feelings, thoughts and imagination. The Extended Mind thesis, proposed by Andy Clark and David Chalmers, challenges the traditional division of mind and environment and promotes the concept of active externalism that treats some material objects that are involved in the cognitive process as extensions of the mind [5]. This proposal gives rise to many interesting questions related to the philosophy of the World Wide Web, since the modern interconnected world dissolves the boundaries between mind and external world. On a related topic, the Embodied Mind thesis argues that the body and its shape determine the mind. According to this theory, as well as its implementation on the emotional level in the somatic marker hypothesis [6], the mind emerges fully only through its materialization into the body and bodily functions modulate the functioning of the mind.

In addition to philosophical inquiry, neuroscience has provided some answers to questions about attention, emotion, and the mechanisms of learning and memory. However, the major question that remains unanswered is how the brain generates the mind, and in particular, assuming the Physicalist approach, how it generates consciousness. According to many contemporary philosophers of mind, this approach seems to be the most plausible and is aligned with the description of the world offered by our current scientific understanding. The question has been posed in many different ways, such as the Explanatory Gap (how physical properties give rise to the way things feel when they are experienced) of Joseph Levine and the Hard Problem of Consciousness (how and why we have qualia or phenomenal



Canard Digérateur - A graphical depiction of the reductionist position on complex systems
Source: http://en.wikipedia.org/wiki/Digesting_Duck

experiences and how sensations acquire characteristics) of David Chalmers [4]. Although a meta-physical substance, as necessitated in the Dualist approaches remains elusive, Physicalism has not yet provided an answer to the explanatory gap.

However, according to the Reductionist rhetoric, these problems arise from a misconception of the nature of consciousness and the questions do not really exist.

The problem of consciousness and the relationship between body and mind have troubled philosophers and laymen for the past few thousand years. The advent of the neuroscience era is bringing with it the promise and possibility of elucidating the mysteries of the healthy and ailing brain. But will science be able to provide a conclusive answer to these tantalizing questions and trace the fabric of consciousness?

References

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