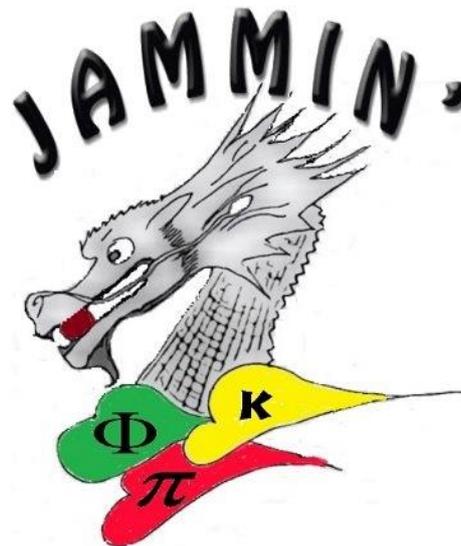


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**THE MAIN FEATURES OF
'INTERACTIONIST' AND 'EPIPHENOMENALIST'
VERSIONS OF MIND-BODY DUALISM.**

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INTRODUCTION

This essay looks at two versions of dualism: 'epiphenomenalism' and Interactionism. It looks at the similarities and differences between the two theories and looks at some of the arguments for and against them.

DUALISM

Dualism is the position that mental phenomena are, in some respects, non-physical or that the mind and body are not identical. Descartes claimed that there were two types of substance (matter and mind) and they interact with each other. This position is generally called "*interactionism*." A related position is that of '*epiphenomenalism*' which claims that although there are two substances consciousness is an experience that does not interact with matter. For the 'epiphenomenalist' consciousness is just like a picture show – just a pure experience that we are not involved in!

DUALISM, COMMON SENSE AND NEUROSCIENCE

Interactionism has the advantage of concurring with common sense since most people would assert that mental states, such as beliefs and desires, causally interact with physical states. What's more, consciousness is the prime experience we have as human beings and even matter is only seen through consciousness experience. When we touch something we only experience it through our conscious mind meditating the event and not the event itself.

Interactionism also appeals to common-sense because we appear to experience mental states effecting physical events in everyday life. For example, if a child caught her hand in the door (physical event) which causes her to feel pain (mental-event) and then yell and scream (physical event) which causes her parents to experience a sensation of fear and protectiveness (mental-event) and so on.

Epiphenomenalism on the other hand seems strange in this situation but has some evidence from neuroscience to support it. In epiphenomenalism the event of feeling pain (mental-event) is caused by the firing of specific neurons in the brain (brain-event). However, when the mouth moves to yell (physical-event) this is not caused by the preceding '*mental-event*', nor by the '*mental-event*' and '*brain-event*' together, but only by the '*brain-event*'. The physical causes are in principle reducible to fundamental physics, and therefore mental causes are eliminated using this reductionist explanation. And although this seems somewhat counter intuitive it has some support from the findings of neuroscience.

For example, neuroscientists studying the brain activity were able to detect activity related to a decision to move, and the activity appears to be occurring briefly before people become conscious of it (Libet, 1985). Other studies have predicted a human action several seconds early (Soon, Brass, Heinze, & Haynes, 2008). These studies and various others show that some actions - like moving a finger - are initiated unconsciously at first, and enter consciousness afterward and the consciousness believes it was the cause (Haggard, 2011). However, these findings from neuroscience are far from conclusive (see section below on arguments against epiphenomenalism).

EPIPHENOMENALISM AND MATERIALISM

Materialism is the belief that physical events are primary and that either mental events are an illusion or that mental events emerge from a certain configuration of physical events (eg, the working brain). In the sense that mental events are considered secondary both materialism and epiphenomenalism agree. However, epiphenomenalism denies that physical events cause mental events and so it views things differently.

Some materialists go even further than saying the physical events are primary and deny any mental events. For example, '*eliminativist materialism*' holds that some mental phenomena simply

do not exist at all, and that talk of those mental phenomena reflects a totally spurious "*folk psychology*" and an introspection illusion.

ARGUMENTS AGAINST EPIPHENOMENALISM

There are many arguments against epiphenomenalism. For example, Dennett denies the existence of qualia as a category mistake whereas functionalists assert that mental states are well described by their overall role, and activity in relation to the organism as a whole (Levin, 2010).

Others, such as eliminative materialists believe that we should abandon primitive concepts such as *mind*, *desire* and *belief*, in favour of a future neuro-scientific account.

Although certain results of neuroscience (see above) are quoted in favour of epiphenomenalism it seems that subjects still have a "conscious veto" since the readiness potential does not invariably lead to an action (Libet, 1985) and this would mean epiphenomenalism is false.

Furthermore, in *Freedom Evolves*, Daniel Dennett argues that a no-free-will conclusion is based on dubious assumptions about the location of consciousness, as well as questioning the accuracy and interpretation of Libet's results. Similar criticism of Libet-style research has been made by neuroscientist Adina Roskies and cognitive theorists Timothy Bayne and Alfred Mele (*Arguments_for_epiphenomenalism*, 2014). Others have also challenged those finding claiming that motor decisions involve multiple stages of goal evaluation, intention formation, and action execution (Mottaz, 2013).

Others have argued that techniques to gather the data from the neuroscience, such as the Bereitschaftspotential undermine epiphenomenalism because these experiments rely on a subject reporting the point in time at which a conscious experience occurs, thus relying on the subject to be able to consciously perform an action (Aaron Schurgera, 2012). That ability would seem to be at odds with epiphenomenalism (Aaron Schurgera, 2012).

Donald Symons dismisses epiphenomenalism from an evolutionary perspective saying that the view that mind is an epiphenomenon of brain activity is not consistent with evolutionary theory, because if mind were functionless, it would have disappeared long ago, as it would not have been favoured by evolution (Symons, 1979). However, the mind might simply be a byproduct of other properties such as brain size or pathway activation synchronicity, which are adaptive.

ARGUMENTS AGAINST INTERACTIONILISM

One supposed problem with interactionilism is explaining how these two substances interact as they are different. I cannot personally see why it is a conceptual difficulty that two types of substance (so called material and non-material) cannot interact. After all, very different types of substance are seen to interact all the time. For example, light interacts with water in diffraction and light is made up of wave/particles with zero mass and size and are classified as gauge bosons (force carriers) while water is a composite of fermions and has mass, size and so on. There are other non-material things that also influence matter such as magnetism, space, time and so on.

Another objection is that the world is '*closed under physics*' and so mind influencing matter would include a flowing in and out of the physical system, and therefore energy would not be conserved (conservation of energy being a fundamental scientific principle). However, energy is not conserved in general relativity, quantum theory, or in the universe taken as a whole (Collins, 2011) so why should we insist on it in mind-brain interaction? Another possibility is that it might be possible for mind to influence the *distribution* of energy, without altering its quantity (Averill, 1981) or that since the '*[t]he interactionist denies...that the human body is an isolated system*', so the *principle is irrelevant* (Larmer, 1986).

There is another argument from physical closure and overdetermination but a discussion would involve delving into the significance and consequences of quantum theory which is well beyond the scope of this paper – although extremely interesting!

CONCLUSION

Dualism generally presents the very common sense view that there is matter in the world but also consciousness. Interactionism expands on this common sense view that mind and matter interact in a human being. Epiphenomenalism leaves common sense behind, in my opinion, and while it claims some support from neuroscience there are many problems with this approach.

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