

## Perspective

# Interactionism, Evolution, & the Initial Alteration

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### Abstract

Unlike many other articles in philosophy of the mind, this is not an article which aims to prove or even give evidence for an ontological position regarding the mind. This article *assumes* a position regarding the mind and then draws implications from it. This article aims to show that if we assume two things as given, that of an interactionist view point and the theory of evolution by mutation and natural selection, it follows that there is a particular moment in time I label the *initial alteration*. The initial alteration is the original instance of the change in behavior of matter in the brain of some organism in our evolutionary history. I will show that this moment in time is of great interest and opens the possibility of moving the mind-body problem towards experimentation. I list several possibilities surrounding this moment, though I will not explore them all in detail.

**Keywords:** Philosophy, mind, interactionism, evolution, initial alteration.

### The Initial Alteration

In philosophy of the mind, there are a multitude of different positions one can take regarding the ontological nature of the mind in relation to the physical brain. Famously, the issue was broken into two stances by the philosopher Rene Descartes. The positions, Monism and Dualism, have been continued to be debated for hundreds of years. These two positions should be very well known to those interested in the mind-body problem. For the purposes of this article I am only going to give very basic definitions of each because comparing them is not my purpose here. I will also list two of their more popular sub-positions even though there are more.

A simplistic definition of Monism is that it attributes a kind of oneness to the mind and brain. Monism has positions such as Property Monism and Substance Monism. Property Monism is loosely the idea that all properties are a single type, and so all properties are physical properties - *or* they are all mental properties. Substance Monism is the view that only a single type of substance exists, and everything is some form or another of this substance, including the mind and brain.

Dualism believes that the mind and the brain are distinct and separable. Dualism has positions such as Interactionism and Epiphenomenalism. Interactionism posits that the mind and body are two separate entities which causally affect one another. Epiphenomenalism posits that mind and body are two separate entities, but the only causal affect is from the body on the mind, the mind does not causally affect the body. In this article, we are going to be looking at a sub-position for dualism. That of interactionism. Even though we are going to be assuming interactionism and

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drawing implications from it, I believe many of my conclusions will be of importance to anyone interested in the mind-body problem.

A more formal definition of interactionism is given by the Stanford Philosophical Dictionary as (Robinson, 2017):

[T]he view that mind and body—or mental events and physical events—causally influence each other”. (Robinson, 2017) The specific part of interactionism I am going to be addressing is that the mind having a causal influence over the brain implies that some matter in the brain of humans (and possibly some other organisms) is behaving differently than would be expected if that matter had been governed completely by the conventions established for their behavior by physics and chemistry. This feature of the interactionist position draws opposition from some who say it seems to violate what is called the *physical closure* of physics – defined as “every physical event has a physical explanation.

Sometimes the term *causal closure* is used instead.

What is also important to understand for this article is the theory of evolution by mutation and natural selection. Only a rudimentary understanding is necessary, and I will give a brief overview for those who are not familiar.

When organisms reproduce (replicate their genetic codes), they create offspring. The genetic codes of their offspring are copies of their own code, but there are what are called *mutations* which are errors in the copying. The effect these mutations can have varies. They can be harmful, essentially ineffective, or beneficial.

Organisms who have beneficial mutations tend to have more offspring and their genetic codes (mutation included) get passed on to future generations. As this process happens over and over, organisms begin to change in a way that correlates strongly with them being better adapted to surviving in their respective environments. This process is the widely accepted scientific view on the development of life on earth. As stated, we are going to be talking about interactionism and its implied behavior changes on matter in the context of evolution.

A constant theme in the discussions surrounding the mind and its relation to the brain are what are called *The Neural Correlates of Consciousness* or “the minimum neuronal mechanisms jointly sufficient for any one specific conscious experience.” (Wu, 2018) The Neural Correlates of Consciousness reference the set of objects in the brain which give rise to consciousness but does not exactly mention the reaction of the brain to consciousness.

Science has made progress through experimentation in identifying regions in the brain which seem to be strongly correlated with aspects of consciousness. This is a hugely important endeavor, but for the implications I am going to draw using interactionism and evolution, it is not important what *particular* objects are involved or at what scale the changes are taking place (i.e. the quantum probabilistic level or the more macro level of variation in the charges within neurons). It is only important that *some* objects in the brain at some level are causally associated with the mind in the way interactionism posits.

In the interactionist view, how does the mind evolve over time?:

For an example, we can look back to our nearest common ancestors with chimpanzees. This family of organisms is called *Homonini* by taxonomists. Assuming that chimpanzees have a more primitive mind and have some form of subjective experience such as experiencing sensations of pain and pleasure – which does seem to be the view held by the large majority of interactionists - it is safe to assume this creature also had a primitive mind and experienced *Qualia* (the name given to single instances of subjective experience). So how did we get from these organisms to humans today?

Like with any organism, there were mutations that happened when these organisms reproduced. One place these mutations happened was in the brain. Some of these mutations would have affected the *Neural Correlates of Consciousness* for that creature in some way. Some of these changes would have been harmful - perhaps rendering the creature mentally unstable. Others of these changes would have been beneficial – possibly making the creature more creative. The organisms who gained evolutionary benefit from the altering of their minds would have outcompeted their rivals and passed these genes onto the next generation.

This process happened repeatedly: a mutation leading to a change in the Neural Correlates of Consciousness for that creature (when compared to its parent), a change in behavior of matter in the brain, and the changes that lead to evolutionary benefit being carried over - until we arrive at humans today. Again, I will remind my reader that this follows if we accept both an interactionist perspective as well as accept the evolutionary model of the development of life. This would not necessarily apply to non-interactionist positions.

This is actually very similar to how *any* feature of an organism evolves except that most evolutionary changes that take place for an organism do not change the behavior of the matter itself, only utilize that matter in a way consistent with the conventions of physics and chemistry.

So in analyzing the evolution of the mind from an interactionist view we can see there is a process going on in the brains of some organisms where the behavior of matter is constantly being changed overtime via mutation and selection. Since life has only been around on earth for a finite time, this process must have had a beginning. Meaning, there was a first time the behavior of matter in the brain of some organism in our evolutionary past was altered from its behavior that would be expected if it were behaving purely by the conventions of physics and chemistry. So for those who believe in the *causal closure* of physics, this would be the initial instance of the causal closure being violated.

From an interactionist standpoint, the only alternative to this conclusion is that the initial alteration in the behavior of matter happened before organisms developed brains. This is an interesting possibility, especially from an experimental standpoint, but I will not be addressing it in this article. Here I will assume the initial alteration took place in the brain of some organism in our evolutionary past.

This initial instance of change has several questions surrounding it. Some questions that could be asked are: In what organism did this take place? How long ago in our evolutionary history did it take place? What objects in the brain were involved? How many objects in the brain were involved?

A question I want to highlight surrounding the initial alteration (this could also apply to those alterations that evolutionarily follow relatively soon afterward). *Was consciousness involved or not?* Or is it possible there was something else involved that consciousness later evolved from? The first idea seems like it might be appealing because the thing associated causally with the change in behavior of matter is something that we are familiar with: that of the mind or one of its features (such as a Qualia).

The other idea has been discussed, though. Bertrand Russell wrote about what he called *protophenomenal* properties. David Chalmers gives a good summary of Russell's view: "...protophenomenal properties are special properties that are not phenomenal (there is nothing it is like to have a single protophenomenal property) but that can collectively constitute phenomenal properties, perhaps when arranged in the right structure." (Chalmers, 2013) Bertrand Russell himself was not an interactionist as interactionism is part of dualism and Russell was a monist. That being said, I believe the basic essence of the idea can be translated over to an interactionist perspective. Specifically that consciousness arose from a smaller scale phenomenon, but here we would be positing that this phenomenon causally affected matter in the brain in a way that changed its behavior from that if it had been governed by the conventions of physics and chemistry. When we ask the question *was consciousness involved or not*, one could argue that such a view is more compatible with the smaller scale an *initial* change in behavior might seem to entail.

To look at one last possibility somewhat related to the previous one I described, I would like to examine mind-brain interaction in humans again. To do so, I will ask a question. *How many objects in the brain give rise to consciousness?* For the purposes here, a specific number is not needed. All that we need to observe is that more than one or two objects are involved in giving rise to and (if interactionism is true) reacting to the mind. The alternative to this: that our entire minds are being produced and reacted to by one or two objects, would seem absurd.

The fact that there are multiple objects that are causally associated with each other in a way different from the normal limitations of chemical reactions is a very important implication of the interactionist viewpoint. It is not the purpose of this article to examine this implication of interactionism, but I will point it out because I believe objects becoming causally associated with each other in ways they could not before could be a lead for examining the initial alteration both experimentally and logically, due to the possible evolutionary benefit this type of effect could produce even at a low-scale.

## Experimentation

I believe the most important aspect about the initial alteration from the perspective of people interested in the mind-body problem today is the possibility of experimentation. The smaller scale changes that the initial alteration would seem to imply might be easier to detect and understand than the behavior changes of matter going on in the brains of humans.

If the view that consciousness arose from some smaller scale phenomenon is correct, (such as the interactionist adaption of the *protophenomenal properties* view), then we may be able to detect such a thing by replicating smaller-scale nervous systems involving matter thought to be used in

brains of organisms in the past. These types of experiments would be difficult but certainly possible with today's technology and dedicated people. If that view did not turn out to be true, perhaps we would have to experiment with a system more complicated before changes were detected. Even then, it might very well still be possible though more technological innovation would be required to produce the systems where the effect took place. Perhaps observing the brains of smaller organisms such as insects could provide inspiration.

## Conclusion

I believe the *initial alteration* is an inescapable implication if we assume both interactionism and evolution by mutation and natural selection. For people who hold this view, many important questions arise from examining the issue. It also may provide substantial possibilities in the way of moving the mind-body problem further into the realm of experimentation.

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