



UNDERSTANDING DOWNWARD CAUSATION: ANALYZING PAUL HUMPHREYS' ARGUMENTS IN HIS ARTICLE "HOW PROPERTIES EMERGE"

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ABSTRACT

This paper aims to analyze Paul Humphreys Arguments on "Emergence of properties". It brings to the surface the presumptions of him in regard to the possibility of emergence of properties. And this paper is merely an analysis of the loopholes of the arguments and the mistreatment of certain principles or facts which should have been rather left as they are.

Key words: Downward causation, Emergence, Physical Determinism, Positivism, etc.

The format of the paper is such that it is divided in three major sections. In Section 1 we put forward the Yablo's formulation of the argument against mental causation because Humphreys tends to debunk this argument only in the article named "How properties emerge?" In section 2 we analyse the generalised versions of Yablo's argument. Here Paul Humphreys' generalisation of Yablo's arguments is critiqued. In section 3 We will analyse the picture of the reality that Humphreys tries to construct and we will see if this picture follow from substantiated and true

premises or not. This paper only focuses on one article of Paul Humphreys, titled-“HOW PROPERTIES EMERGE”.

Section-I

In this section we will see Paul Humphreys’ summarisation of Yablo’s formulation of the argument against the possibility of downward mental causation as follows:

(1) If an event x is causally sufficient for an event y, then no event x* distinct from x is causally relevant to y. (Exclusion)

(2) For every physical event y, some physical event x is causally sufficient for y (Physical Determinism).

(3) For every physical event x and mental event x*, x is distinct from x* (dualism).

(4) So: for every physical event y, no mental event x* is causally relevant to y (epiphenomenalism).

(Yablo 1992, 247–248) (Emphasis by me.)

The “exclusion argument” is found problematic by Humphreys in the above mentioned format of it. According to Humphreys it proves to be devastating for any position which ‘considers the mental properties to be real’, including those non-reductive views that suppose mental properties to be causally supervening upon the physical properties (Humphreys, 1997). We will prove that exclusion argument is not devastating for any position which holds that mental properties are real. The “exclusion argument”, according to Humphreys, puts the ontological status of mental phenomena/properties in problem. This concern appears to have some weight because we have not even a single instance where we can say that a mental phenomenon is exclusively sufficient for any mental or physical consequence. In that scenario, mental phenomena or property is a use-less by-product of physical substances. This is how we see the case of “exclusion principle” is related to “consequence of epiphenomenalism”. For example: it can be argued that when I am writing the article, there are two causes which are into play, namely, mental state of fear of missing the deadline and a corresponding brain state. It seems that in all the cases where we have a consequence seemingly due to mental phenomenon, there is a physical correlate of the mental cause as well. It appears that if “exclusion principle” is true then it mental phenomena have not task in Nature. It seems that there is no point in having mental events in our ontology if they are

idle. Therefore, the existence of mental phenomena seems to be a clear case of epiphenomenalism.

My own take on the “exclusion argument” is that it is valid, by definition of “sufficient reason”. Moreover, it does not create any problem for the downward mental causation. In downward mental causation we believe that the physical event (P1) is caused by the following two causes: 1) The mental cause and 2) The physical cause. We can escape Epiphenomenalism by arguing that mental cause was the necessary cause and physical cause was the sufficient cause. The logical definitions of the necessary and sufficient conditions that we will take as premises are as follows: “*Definition: A necessary condition for some state of affairs S is a condition that must be satisfied in order for S to obtain. For example, a necessary condition for getting an A in 341 is that a student hand in a term paper. This means that if a student does not hand in a term paper, then a student will not get an A, or, equivalently, if a student gets an A, then a student hands in a term paper. Definition: A sufficient condition for some state of affairs S is a condition that, if satisfied, guarantees that S obtains. For example, a sufficient condition for getting an A in 341 is getting an A on every piece of graded work in the course. This means that if a student gets an A on every piece of graded work in the course, then the student gets an A.*” (htt)

It is surely wrong to think that there is an event, such that it is caused by two sufficient reasons, considering mental and physical causes to be independently sufficient the same cause at the same time. But, this dilemma of accounting for both the mental and physical cause can be avoided without bringing in epiphenomenalism. In fact, epiphenomenalism is not there in the scene under following explanation: There are two kinds of physical events depending upon whether they are caused by mental events or physical events or both.

1) The events which are consequent only upon the physical cause and physical cause is the sufficient for it to happen. Let us call them E_1 . For example: The rising of sun.

2) The events which are consequent upon two causes, one of which is physical and the other is mental. Let us call them E_2 . For example: The making of a cup of tea. These E_2 type of events have a mental cause which acts as necessary cause and a physical cause which is a sufficient cause. This is my own claim. These mental causes are never the sufficient for the happening of an event, but, they are qualified to be a necessary cause because their absence may inhibit the happening of the sufficient cause as well, and there by stops the event E_2 from happening. For

example: A person, named, Raj may be willing to have some tea. His willingness may be taken as the mental cause, for the execution of the physical process which is required to make the tea. And this physical process of making the tea may be taken as the sufficient reason for the consequence of making the tea. We see that, Abraham's mere desire is not sufficient to get him the tea, but it comes out that his desire is a necessary cause of making the tea in the cases where the desire precedes and relates to the making of tea as a cause. Desire is a mental state and is necessary in this case because the necessary cause, by definition, is such that the absence of it may inhibit the effect, and the absence of desire in this case may render impossible of the happening of the event E_2 . There are two things in it: Firstly, we need an argument to establish that in the above case the mental cause was even necessary in the first place. We need to prove that mental events are necessary whenever they precede the consequent event under consideration, say, " E_2 ". If we fail to prove it then, mental events would be epiphenomenal. It can be questioned that when mental phenomena are neither necessary nor sufficient for the event " A ", then, what their necessity in the structure of reality/world is. Or, we need to admit that we do not have enough tools and methods to locate the mental in the structure of reality (Tallis, 2010)). The reductionist programme is not considered as an alternative view here by me. Again the argument comes from Tallis when he says that we do not have any argument either to tell what cannot be calculated in neuroscience is not there at all. That there are selves in neuroscientists is believed by them as well because they do not believe that what there they are mere cluster of atoms (Tallis, 2010) Secondly, to establish the ontological status of mental phenomena, it is important to explain why mental cause is always accompanied by the physical but, the physical need not be accompanied by the mental. We need to give an argument for it if we have to establish the ontological independence of the existence of mental events. If we cannot prove the independence of mental events, we need to prove why they are not independent. My contention on this is that no physical event is independent of mental event. I merely point out the ontological issue: that if mental is dependent on the physical, it demands an explanation. One of the many available explanations is that we don't encounter disembodied spirits in the world. But, the counter-argument can be this: what is disembodied cannot be encountered through human senses. For one, we know only two fundamental ingredients of the nature: Matter and energy, and they are inter-convertible, 'so monism is maintained'. The ontological status of mental states does not come under matter or energy. But, we have the phenomenological evidence of its existence (Tallis, 2010). Therefore, 'dualism seems non- escapable'. For example: pain, colour

sensation, consciousness of one's own body, etc. Are the facts which are not explicable in terms of physical reality.

Further, if mental does not depend on physical events then also, there is need of explanation as to where to locate it. Searle maintains that there can be neural correlate of consciousness or intentionality (Searle J. R., 2004), however, Raymond Tallis, a neuroscientist, seems more appropriate when he points out that Searle is merely complicating the thing. Tallis tells that we do not have and cannot have a correlate of what we call "experience" (Tallis, 2010). For example: Rising of sun does not have a non-physical event as its correlate. But, the instances of making a tea, teasing siblings playing chess, or watching rainbow have a mental correlate. It is true that phenomena can be given physical explanation. For example: Rising of sun can be given physical explanation. But, the phenomenology cannot be given physical explanation. For example: there is no method to "see" how the received rays of light lead to the formation of perception of say, a rainbow. There is no neural correlate to tell how we develop the awareness of self or how we have consciousness of our own body (Tallis, 2010). It is further argued by Tallis, that although, we cannot have a neural correlate of our experience, it does not mean that it has no ontological status. Phenomenology is not the subject-matter of physics. Therefore, even mental phenomena aren't subject matter of physics (Tallis, 2010). Thereby, the problem of exclusion argument does not come from the fact that it renders mental phenomena unexplainable. The problem is that the 'Exclusion argument' is incapable of explaining the mental phenomena. Therefore Humphreys' argument that the exclusion argument would render the mental phenomena as epiphenomenal is problematic because exclusion argument does not intersect with the arguments for or against the mental phenomena. Further exclusion argument is not devastating for any position which holds that mental phenomena are real. Further what is here referred as exclusion argument here is actually the principle of sufficient reason/ Cause. Therefore this is mistreatment to the principle of sufficient reason to assume that it is an argument.

Next, Humphreys' criticism of the argument of "physical determinism" which is the Second argument is that of 'Physical Determinism'. We can say that we need for the sciences, especially physics, to progress to get an answer to it. For now, it is generally believed that the mental world is not mathematical. The doctrine of positivism advocates this view (Kafatos, Robert Nadeau and

Menas, 1999). There are a whole lot of positivists and physicalists who have said this or subscribe to this view. They are firmly committed to classical physics. Therefore, it does not qualify as a subject matter of physics because it is not mathematical. That is, the world in which we live, love and die is alien to physics. (Kafatos, Robert Nadeau and Menas, 1999). But, the hope is that it is not confirmed yet that the mental world is non-mathematical. Physical determinism has lost its weight with the advent of quantum physics. Bohr's principle of complementarity has gained weight since then. (Kafatos, Robert Nadeau and Menas, 1999) As regards first case, which demands the argument to establish that wherever the mental cases are available they are necessary and not epiphenomenal, it can be argued that their absence may render the non-happening of the consequence (as mentioned earlier). My argument is through an example: Suppose if there are two pathways which lead to the same destination, say Dwarka in New Delhi, then both ways are sufficient in themselves to lead me to Dwarka, but, it depends on my decision (mental cause) which path I choose. We can say that certain brain state (physical cause) may be the sufficient reason for my taking one way or the other. But, my argument is that such a brain state won't also have the status of the sufficient cause. I might have a certain brain state which is necessary for my choosing, say second path. But, if my legs are tied then I might not be able to reach the destination. In such a case neither the mental event, nor the physical correlated event is sufficient. The whole debate is between the mental state and the brain state. The question is whether there is some mental state which can affect the future physical events. As long as we believe that there is something called "intentionality", as argued by Searle, we can say that mental events have the capacity to impact the future events, without leading to over-determinism, because they are never the sufficient cause, they are just necessary cause in the happening of some events. They are necessary, by the hypothesis of intentionality because, this is 'intentionality' which has the onus to provide 'the meaning' to an event (Searle J. R., 2004). As long as we accept that we are capable of 'subjective experience' and that subjectivity has a role in meaning generation of an event, intentionality cannot be over-ruled. Intentionality should not be confused with the term "intention" (Tallis, 2010). Intentionality refers to "about-ness" or "directed-ness" of our mental states. For example: desire is a mental state which is directed towards something. In regard to intentionality it is also said that all states are not intentional. For example: state of anxiety is not intentional because it is not directed towards anything. And the events, which have a mental cause in addition to a sufficient cause would lack in meaning if the mental cause are not considered as necessary. Therefore, by "the

hypothesis of intentionality”, downward mental causation can be established without getting entrapped into over determinism, because, mental causes are never, by themselves, sufficient to cause a physical event. This is my own conclusion. Therefore the arguments from necessary cause and the argument from intentionality secure the reality of mental states.

Humphreys further says: *“Much is wrong with the exclusion argument, but what it shares with the downward causation argument is a pinched commitment to a dualist ontology, a laudable but usually un-argued allegiance to the causal closure of the physical realm, and (nowadays) the idea that supervenience is the right way to represent the relation between the lower and higher levels of the world’s ontology. Each of these is popular and each is wrong.”* (Humphreys, 1997)(Page no.4)

Here he puts forward his view that theories of dualist ontology and the theories of supervenience are not the right way to relate different strata of the reality. My objection is that because he accepts the ontological status of abstract objects then, he is already a dualist. He does believe that there is physical world and there are abstract entities. So, He is a dualist, because he believes in the ontologically positive status of two kinds of entities/events: the abstract and the physical. It can be questioned if mental states are physical or abstract or a third kind of a thing. Further, the downward causation is already there when the abstract objects are affecting the phenomena in the physical realm. For example: We realize the causal efficacy of the abstract entities when there are two birds and three fish who do not add up to five hundred. They just add up to five. There is no upward causation in case of abstract entities, but the downward causation cannot be denied. We need to investigate if there is downward causation as regards the mental phenomena.

Section 2

In this section we will see the Humphreys’ generalised version of the Yablo’s argument and their analysis from our understanding of it:

“At the very least, one would have to consider this an idealization of some kind, and we shall see that the assumption that there is a discrete hierarchy of levels is seriously misleading and

probably false” (Humphreys, 1997). He gives the generalised version of each argument to see if they are refutable or acceptable in their modified versions, in regard to downward causation of mental phenomena.

Generalisation of 1st argument by Humphreys and our analysis of it:

Here is the generalised version of 1st argument as, 1’: “If an event x is causally sufficient for an event y, then no event x* distinct from and causally disconnected from x is causally relevant to y.” (Exclusion Argument).

He gives the counter- argument to reject this claim in the following lines: “This criterion is needed to exclude cases where x is sufficient for y but x*, which is causally disconnected from x, brings about (a somewhat earlier analogue of) y before the connecting process from x has brought about y. Such a strict criterion, called “fragility” by David Lewis, is controversial, and rightly so, but I shall accept it here simply because its adoption avoids distracting issues and does not affect the essential features of the argument.”

My problem is that he has not argued out how his above mentioned criterion, called “fragility”, is called in to reject the “exclusion argument”. I think that exclusion argument is true in its own right. Rejecting the above mentioned “exclusion argument” would mean to reject the hypothesis of “sufficient reason”. It would invoke the sense that Nature may work over-deterministically. That would mean that events can be consequent upon the surplus causes. This would put extra burden on all sciences, including physics, to explain what necessitates over-determinism in the happening of any event. And this process of justification would go ad-infinitum.

He mentions the generalised form of the 2nd argument, as:“(2’) For every 0-level event y, some 0-level event x is causally sufficient for y (0-level-determinism)” (Humphreys, 1997).

The argument which he gives against this generalised form of 2ndargument is as follows: “So a generalization of (2) is not plausible for any level above the most fundamental level of all, which we call the 0-level, and so we shall restrict ourselves to a formulation of (2) for that level only, the level of whatever constitutes the most fundamental physical properties..” (Humphreys, 1997) (Page no.9).

The problem is that the rejection is based on an assumption that there are some hierarchies in the science. However, as Campbell and Bickhard have rightly argued, there isn’t any such hierarchy

and there is no “fundamental level “to come down to (Richard J. Campbell, Mark H. Bickhard). His argument is based on the current knowledge in physics which advocates the quantum-field theory of reality. The electrons emerged from the same source have their motion as clockwise and anti- clock wise; and when the direction of motion of one electron is changed from clockwise to anti-clockwise, the direction of motion of the other electron is automatically changed. The change exceeds the speed of light. That is, there is possibility of transfer of information faster than the speed of light, and this is taken as an evidence of the continuity of reality because light is all motion (Zero mass), so the transfer of any information at any speed greater than the speed of light is an impossibility. But, the evidence shows that it is happening.

The third point is this:“For every physical event x and mental event x^* , x is distinct from x^* (dualism).” It has been generalised as follows: (3’) “For every 0-level event x and every i -level event x_i^* ($i>0$) x is distinct from x_i^* , (pluralism)” (Humphreys, 1997), (page: 10).

It is evident that in the process of generalising the 3rd point in the form as 3’, Humphreys has slipped into “category mistake”. In the former case the distinctness is asserted on the basis of the fundamental distinctness of the entities involved in the events x and x^* respectively. However, the difference in the generalised version is based the differences in events/phenomena’ of the levels. The characterisation of levels on the basis of the entities of which they are comprised is one thing and the distinct-ness on the basis of the events of which the levels are comprised is another thing.

As regards 4th point (viz: “For every physical event y , no mental event x^* is causally relevant to y (epiphenomenalism).” (Humphreys, 1997) (page: 1) , Humphreys says: First, 4’, as he mentions, is as follows: “For every 0-level event y , no i -level event x_i ($i>0$) that is causally disconnected from every 0-level event antecedent to y is causally relevant to y .” (Humphreys, 1997) (page: 10). This generalisation of 4th point is in no way a justified generalisation, the mental event, in the former case, is not considered to be causally irrelevant or disconnected to every physical (o-level) antecedent of it. Only, it (mental event) has been shown to be causally redundant or epiphenomenal.

Section 3

Here he is trying to picturise reality by maintaining that the hierarchy can be explained as difference in the kinds of interactions that the fundamental entities go under in different levels.

For this, he first debunks the rational concept of hierarchy of disciplines and later on he gives his “fusion argument” to substantiate his standpoint. He says, “(5) Every emergent property is supervening upon some set of physical properties.” Can be generalised as: (5’) Every j-level property ($j > 0$) is supervening upon some set of i-level properties for $i < j$.” (Humphreys, 1997). We can see that he is again falling into “Straw man’s fallacy” because, he is trying to beat an argument which has not been given in the first place. He is presupposing that there are discrete levels forming a hierarchy. Next three points that he makes are as follows: “(6) The only way to cause an emergent property to be instantiated is by causing its (set of) emergence base properties to be instantiated. Its generalization will be (assuming that supervenience is a transitive relation) :(6’) the only way to cause a j-level property to be instantiated is by causing a set of i-level properties ($i < j$), the subvenient basis, to be instantiated.” And, that, “Then we have the important condition :(7) A property is emergent only if it has novel causal powers. We can retain this unchanged for the generalized argument.” (Humphreys, 1997) (Page no.12). Point 7 is a backward looking argument. Here he is trying to picture the reality as comprising the emergent phenomena. But seventh point and point sixth do not offer much of an explanation which is required. He wants to maintain non-reductive monism. Therefore , he tries to counter physical reduction-ism in the following way.

Again, in 5th section of article “Can properties emerge?”, which is, “An Emergentist answer to the Second Argument”, he gives another refutation of the argument of “physical determinism” from an emergentist’s point of view in the following way, which he named as ‘fusion argument’. Firstly, he reframes their argument in the following way, diagrammatically:

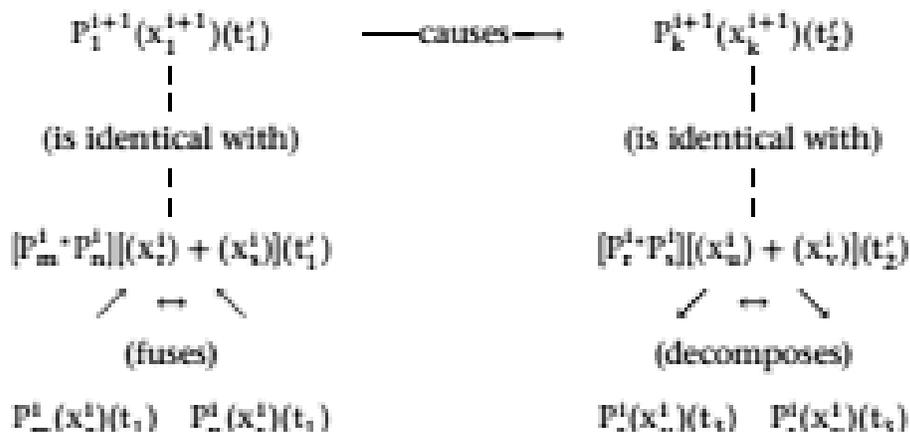


Figure 1 (Humphreys, 1997)

In the last step, according to him, the decomposition does not need to occur. The whole argument of “physical determinism” depends on this step. Also, if decomposition is possible then, according to Humphreys, the downward causation by mental phenomena would fall into problem. But, the crucial point is that Humphreys has rejected this step of decomposition without giving any justification or reason.

Further, his introduction of “fusion operation” is not very illuminating. It does not explain how the fusion occurs. It does not provide us with a methodology to tell if a fusion has occurred at all. It does not explain the principles under which phenomena at different level can come in interaction with each other. Ultimately, I agree with Humphreys that we need to be patient to get more insights regarding mental phenomena. But, Humphreys needs to explain the principle on which “Fusion Operation” should work.

Further, He also needs to tell how dualism is escaped when abstract entities are accepted.

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