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Joint Causation, Emergence Theory and Panentheism

Abstract

In this paper I will discuss how joint causation as suggested by Arthur Peacocke can on the one hand serve us in the defense of downward causation within emergence theory and on the other hand lead to a deeper understanding of divine action and interaction in panentheism. The question of downward causation lies at the heart of emergence theory and is of great significance for the question whether emergent properties in general and the human mind specifically can have causal efficacy of their own. Peacocke's approach of joint causation seems to be a promising attempt to avoid the problems in common arguments against downward and mental causation - like those by Jaegwon Kim -, which usually appear to be related to a linear understanding of causation. The idea of Peacocke's joint causation may be extended by understanding joint as jointly depended in a network. Such 'networked' joint-causation may not only make it possible to at least in principle understand downward causation and the interaction between the mental and the physical, but since in panentheism God is understood as being affected by the world, 'networked' joint-causation within a process philosophical framework may - together with and in support of the analogy between mind/body and God/world' - also open up for a better insight to how divine action may be possible in the world. This may also have the consequence that God - alike to the mind - develops and evolves during time.

Introduction

The theological position of panentheism claims - very simplified - that the world is in God and that God - in contrast to pantheism - is not exhausted by the universe, but is 'greater'. One important question that arises in all theistic positions and thus even in panentheism is how divine action could be understood. How could God, the divine, act upon the physical world, if at all? A similar question arises in relation to the mind/body problem: how can the mind, mental properties, consciousness, self-consciousness have causal influence on the body? One possible and promising approach to the mind/body problem avoiding reductive physicalism and dualism is emergence theory. A central problem at the heart of emergence theory is the question of downward causation, of the causal efficacy of emergent properties. The question I specifically will attempt to investigate in this paper is whether Arthur Peacocke's ideas about causation on the one hand can serve us in the defense of downward causation within emergence theory and on the other hand lead to a deeper understanding of divine

action and interaction in panentheism. To start with I shall give a brief account of some basic ideas from emergence theory.

The Importance of Downward Causation for Emergence Theory

Emergent properties are quite common in nature, we only have to think of the patterns in ice crystals, the dynamics of fluids, patterns in plant or animal life, the mental functions and properties of higher animal life and we would have examples for emergent properties. All these examples have in common that it is not - at least not simply - possible to reduce them to phenomena at a lower level. How could we explain, predict or deduce the specific structure of an individual ice crystal merely from the physical laws governing water? How could we deduce the ability of humans to create and appreciate music from the laws governing the neurons? How could we predict or deduce how animals and humans seem to be acting autonomously on their bodies and their surroundings on the basis of the bodily processes happening in them? These questions do not seem to have simple answers, even with present day scientific knowledge. Instead these properties and phenomena can be classified as emergent. Theologian and philosopher Philip Clayton lists four features relevant to the concept of emergence: (1) ontological monism, (2) property emergence, (3) the irreducibility of the emergent properties and (4) downward causation. Especially the third and fourth feature stating that emergent properties have to be "[...] irreducible to and unpredictable from, the lower-level phenomena from which they emerge. (Clayton 2004:4)"[1] and that they should have causal influence on other - and especially lower-level - phenomena (Clayton 2004:4) are of importance in the context of this paper. Although these features seem to give a good basis for the description of emergence, the question remains whether emergent properties at least in principle could be explained by lower-level phenomena or not. This question leads to a further distinction between weak and strong emergence, the former meaning that the irreducibility, unpredictability and causal impact could still - at least in principle - be explained by lower-level phenomena, the latter meaning that such explanations in principle are not possible. Weak emergence, I suspect, could be accepted by most philosophers,

1 The dependency of emergent properties is sometimes used as an argument against them. On the basis of a fundamentalist ontology Elisabeth Barnes suggests that there may be four different kinds of entities: fundamental and independent, fundamental and dependent, derivative and independent and finally derivative and dependent. Examples would be mereological simples, emergent entities, necessarily existing abstracta (such as numbers) and complex objects in order. (Barnes 2012:882-886) The question is if this approach can successfully be combined with concepts like supervenience or causation.

theologians and scientists even if they strictly defend a reductionist position, but it is not the position of interest here. Strong emergence, in contrast, has - as the name says - a stronger claim: emergent phenomena are ontologically irreducible, unpredictable and at least some have causal influence of their own. It is this last feature, the causal influence, downward causation which has most often been attacked by opponents and requires further defense and explanation.

In the context of the mind/body problem downward causation is sometimes referred to as mental causation. One of the philosophers who has repeatedly made clear and detailed analyses of mental causation is Jaegwon Kim. In a recent essay he divides his argument into two separate parts: the exclusion and the supervenience argument. First the exclusion argument: presupposing the causal closure of the physical, if a mental property M causes a physical property P*, then the physical property P* by the causal closure also has a sufficient physical cause P which by assumption is not identical to M.[2] Thus the physical property P* is overdetermined and we have the choice that either *all* mental-to-physical causation is overdetermined or to reject one of the causes. Rejecting the physical cause P contradicts the causal closure of the physical. Thus, the mental cause M should be rejected. The argument of supervenience is roughly as follows: Suppose a mental property M is the cause of another mental property M*. Given supervenience there has to be a physical property P*, that serves as a supervenience base which means that P* is necessarily sufficient for M*, no matter if M had instantiated M* or not.[3] Therefore M must also cause the supervenience base P* and we have a case of the previous exclusion argument by which the mental cause M should be rejected. Together both arguments establish Kim's claim that neither mental-to-physical causation nor mental-to-mental causation is possible and thus the mental understood as supervenient and irreducible seems to be epiphenomenal. (Kim 2009:39-41)

From this short and sketchy description of Kim's argument it becomes clear that there are at least two major interrelated problems for emergence: (1) The physical event P* is apparently overdetermined, it is caused by both M and P. (2) The other problem is – as Kim points out – the causal closure of the physical and since according to the causal closure event P* should have a sufficient physical cause, the mental cause should become redundant. Consequently, the emergentist should

2 Kim argues against anti-reductionism. He therefore assumes that M and P are not identical and shows that this leads to the problems for mental causation mentioned further down.

3 Kim gives a simple definition of supervenience: "Let me give a brief definition of supervenience: […] to say that M supervenes on $N_1,\ldots..,N_n$ is to say that any system that has the base properties $N_1,\ldots..,N_n$ will necessarily have the supervenient property M. (Kim 2006:193)"

arrive at the conclusion that she either must choose to "[…] provide sufficient and compelling reasons for rejecting the closure principle or else show that downward causal efficacy of irreducible emergent properties is consistent with physical closure. (Kim 2006:200)"

Peacocke's joint-causation

Attempts to defend downward causation or specifically mental causation have thus basically the following possibilities or a combination of them: reject the causal closure, show that downward causation – against Kim – does not violate the causal closure, show that overdetermination is an acceptable possibility, redefine supervenience, redefine causation. [4] For my goal in this paper it seems most appropriate to mainly rethink the concept of causation and partly the possibility of overdetermination.

One possible and promising approach to defend mental causation developed by Peacocke is based on an alternative understanding of causation. Peacocke is well aware of the significance of downward (top-down) causation not only for an adequate understanding of the mind/body problem but also for emergent phenomena in general.[5] (Peacocke 1993:53-61) Now in neuroscientific research the brain is understood as an enormous network of neurons and it is not difficult to realize that - at least on a global perspective - there are *no* neuronal states which are exactly alike a previous state. The totality of neuronal states is in constant change. Of course similar states will occur and can be correlated to similar mental events and properties. So although it is possible to correlate specific neural states to specific mental properties, these neural states will never be exactly the same. Furthermore, what

4 In her book "Mythos Determinismus" the German physicist and philosopher Birgitte Falkenburg – although neither a emergentist nor a non-reductive physicalist - argues against the causal closure of physics. She suggests that the trilemma of the incompatibility of the causal closure, mental causation and that mental and physical phenomena are fundamentally different (Falkenburg 2010:28-29) should be resolved by understanding the causal closure not as the strong metaphysical assumption it usually is taken to be. Following ideas based on her interpretation of Immanuel Kant the causal closure should rather be understood as a *methodological* principle used and accepted by scientists. (Falkenburg 2012:45-51) She points out that apart from the fact that the causal closure has been and is a basic metaphysical assumption for most scientists and philosophers in the Western tradition, the causal closure historically also has been used against superstition, to get rid of spirits, ghosts and other immaterial beings in our descriptions of nature. (Falkenburg 2012:49)

E.J Lowe argues that only the strong claim that *no* physical event has a mental or non-physical cause is in conflict with mental causation not the claim that every physical event has a set of causally sufficient physical causes. (Lowe 2004:225-239)

5 It would certainly be possible to argue that the burden of proof lies with the defenders of a reductionist approach and *not* with the defenders of downward causation. The experience of mental or downward causation seems to be basic and part of a common-sense understanding of the world. Given this common-sense approach, it may be possible to argue that since we *experience* that we actually cause events in the world we should assume that this is probably a *real* experience and thus those who think that mental causation is epiphenomenal should have the burden of proof.

becomes conscious is not only one single mental state but is a combination of several inputs and possible anticipated outputs which in turn are at least partly dependent - both in space and time - of each other. (Dehaene et.al. 2001:153-155) [6] This means that even from the point of view of the physical neuronal reality everything happening in our brain and in our mental life is somehow interconnected and interdependent. Although neural correlates can be observed in real time with modern techniques, they cannot be isolated neither from the rest of the neuronal activity in the brain nor from the other mental states occurring simultaneously. So if we were to analyze causation in mental life we would need a form of causal theory which accounts for this kind of dependency, recurrence and interconnectedness. This is what Peacocke more recently has suggested. Commonly causation is understood as a temporal, linear chain of events, but Peacocke deems that this understanding is insufficient and should be broadened. "A wider use of 'causality' and 'causation' is now needed, one that includes the kind of whole-part, higher-to-lower-level relationships that the sciences have themselves recently been discovering in complex systems, especially the biological and neurological ones. (Peacocke 2006:264)" The basic idea in Peacocke's alternative description of downward causation is that events at lower-levels should be regarded as "[...] the result of the *joint* operation of both higher- and lower-level influences. (Peacocke 2006:269)" The joint operation of higher-level – and in the case of the mind – mental influences with those at a lower-level could be understood as an overdetermination of the kind encountered in Kim's argument.[7] Now in the case of Kim's argument it seems that he does not explicitly account for this interdependence in his argument. He certainly does connect the physical to the mental via supervenience, which allows dependency in *one* direction, from

6 Cognitive neuroscientist Stanislas Dehaene introduced a global workspace model of consciousness consisting of the global workspace itself and attentional systems, evaluation systems, memory, perception and the motor systems connected to it. Groups of neurons will in the event of effortful task operate in a top-down manner on other populations of workspace neurons. (Dehaene et.al 2001:153-155)

7 Both Lynne Rudder Baker and Nancey Murphy have developed arguments for how downward causation could be made compatible with the causal closure principle. In relation to overdetermination Baker argues that only given that the causes are independent does overdetermination pose a problem. But the mental and physical events in mental downward causation are *not* independent, but metaphysically connected. (Baker 2009:114) She also developed the concept of *property constitution* avoiding the concept of supervenience. In her account of property constitution the constituted property-instance is not reducible to the constituting event since it is only constituted under certain relevant circumstances. (Baker 2013:209-214) Nancey Murphy presents a solution, which is based on redefining supervenience, attempting to show that downward causation could be made compatible with the causal closure principle: "Property S supervenes on property B if and only if *e's* having B constitutes *e's* having S under circumstance *c.* (Murphy 2006:231)" This solution suggests that mental properties generally do not supervene on just one specific set of physical properties. Instead, the relation of physical properties to mental properties is many to one (or may be even may to many). Interestingly, all of these approaches point into the direction that the mental and the related physical properties are intimately interdependent and interconnected.

the subvenient base to the supervenient property. So Kim's argument may be questioned on the grounds whether it correctly describes the relationship between the mental and the physical. I think, especially the form of linear causation involved in Kim's argument does not describe the relationship between the mental and the physical in the most adequate way. It seems to be - at least in the case of mental causation - a more adequate and hopefully more successful approach not to understand causation as a linear connection but a form of 'network'-relationship.[8] Now although Peacocke does not use the term 'network', the joint causation proposed by him would certainly be able to incorporate a form of networked-causal-relationship and in the light of the networked structure of the brain, it seems appropriate to emphasize this feature even in relation to causation. Therefore I will subsequently use the term networked-joint causation. This idea must certainly be defended in greater detail. Presumably, a reductionist physicalists for example would still claim that all causation ultimately can be construed as linear causation and it should be an interesting and important task to show that this is not possible.

I will in the remaining part of this paper assume that the idea of networked-joint causation can be successfully defended and that it at least is a possible theoretical approach. Assuming this, the linear causation, bottom-up and downward causation would all be a special cases of networked-joint causation. Causation understood as a temporal, linear chain of events would still be applicable in certain cases but not in the description of mental phenomena in relation to the physical. The question is now whether and how a panentheistic understanding of divine interaction is supported and strengthened by a networked understanding of causation.

Process theism, panentheism and networked-joint-causation

As mentioned in the beginning of this paper panentheism could very simply be described as the position that the world is in God and that God is not exhausted by the universe, but is 'greater'. Of course the idea of God's immanence in the world is not new and can also be found in classical theism as for example in the works by Thomas Aquinas about the immanence of God in the universe. (Aquinas ST I 8)[9] Taking further aspects into account Niels-Henrik Gregersen has based a definition

8 Michael Silberstein arrives at similar conclusion. He suggests a combination of ontological emergence and systemic causation in effect rejecting both the causal closure of physics and the kind of supervenience defined by Kim. (Silberstein 2006:217-220)

9 Aquinas discusses four subquestions: Is God really present in all things? Is God everywhere? Is God everywhere by his essence, power and presence? Does to be everywhere belong to God alone? He answers these four questions affirmative. (Aquinas ST I 8)

of generic panentheism on the following two features: "1. God contains the world, yet is also more than the world. Accordingly, the world is (in some sense) 'in God'. 2. As contained 'in God', the world not only derives its existence from God but also returns to God, while preserving the characteristics of being a creature. Accordingly, the relations between God and world are (in some sense) bilateral (Gregersen 2004:22)." So one very important difference to classical theism seems not to be the focus on the immanence of the divine in the universe, but rather the idea that the divine *interacts* with the world. This feature of being affected apparently stands in contradiction to understanding God as unchangeable, immutable and all-powerful God, a position often supported in classical theism. [10]

Both classical theism and panentheism have to deal with the question *how* God is connected to the world. God's affecting the physical must somehow cause events in the physical although God is understood as a transcendent being. So one problem - as pointed out by Peacocke - is that critics could claim that divine action in classical theism amounts to breaking the laws of nature since God - if understood as ontologically separate from the world - must act from 'outside' the world. (Peacocke 2004:145)[11] This situation has an analogy in the interaction between the mind and the body as understood within (substance) dualism. If we assume that the mind is independent and ontologically different, then any action of the non-physical mind upon the physical in substance dualism could be interpreted as breaking the laws of nature.

Although panentheism alike to classical theism has to account for divine action and interaction, the situation here is slightly different. First, it must be noted that the relationship between God and the world is twofold. God in panentheism is also affected by the world. Second, since the world is part of God, God is connected to the world and the universe in total. So anything that happens in the world affects God and God can – in the framework of what is logically and metaphysically possible – act

10 Especially, if we assume that human freedom is possible and God interacts with humans then God not only should not have the possibility to directly affect these free decisions or at least should refrain from exerting this kind of power - else these decisions would not be free -, but God would also be affected by the free decision of creaturely beings in the world. This position, that God's omnipotence somehow is restricted if human free will is assumed possible, has been developed by both process theists and open theists, Of course, there are other possible *compatibilist* positions defended by historical and contemporary thinkers in relation to human free will than the one stated here.

One non-compatibilist position describing how God could affect human decisions - at least indirectly - without coming in conflict with human free will would be by persuasion instead of coercion. This has been suggested for example by David Ray Griffin (Griffin 2001:143-144).

11 It is usually assumed that God is both transcendent and immanent. Various attempts to reconcile God's transcendence with God's immanance have been made. One example is certainly the above mentioned work by Aquinas. Yet God's transcendence still could be used to argue that God cannot act upon the physical without breaking the laws of nature.

upon anything in the world. If, in addition, the parts in the physical interact with each other, any action of God upon the world would in some form be present in the rest of world.

Given the aforementioned basic understanding of panentheism it seems easy to see an analogy between mind/body and God/world:[12] The parts of the body and especially of the brain are interconnected, the mind can affect the body to a great extent and the mind is affected by the body. The corresponding ideas in relation to God and the world would be that the parts of the world are interconnected, that God can affect the world in the scope of what is logically and metaphysically possible and that God is affected by everything in the world. Now if we were to stick to linear causation, to temporal linear chains of events, then an understanding of God's interaction with the world would encounter problems similar to those encountered in the mind/body problem. Linear causation would alike to the situation in the mind/body problem result in an overdetermination of physical events. For any physical event - given the causal closure - there would be a physical cause and in the case of divine action a competing divine cause. Which should we choose?[13] If we chose a single divine cause separate from the possible physical cause then the divine cause and thus God's interaction could - in a similar way as briefly discussed in the case of classical theism above - be interpreted as potentially breaking the laws of nature.[14] If we chose the physical cause, then by the causal closure and the linearity any preceding cause would always be a physical cause. Now instead a networked-joint-causation together with a process philosophical view on the world could be applied to God's interactions with the world. We have already seen that networked-joint causation seems to be more appropriate for the description, understanding and explanation of how the mind interacts with the body. According to David Ray Griffin, who defends and has developed a process theistic position on the basis of the philosophy of Alfred North Whitehead, Whitehead's concept of prehension provides the kind of connection between the physical which we may need to strengthen the analogy between mind/body and God/world. Prehension means somewhat simplified that everything in the world both is experienced and experiences something else in the world, although it is important to realize that neither Griffin nor Whitehead understood these experiences as conscious experience. (Griffin 2001:79-80,

12 The analogy between mind/body and God/world is relative common in panentheism. Philip Clayton actually gives this analogy a name: The *panentheistic analogy.* (Clayton 1997:101)

13 There are obviously other approaches and possible solutions to the question of divine action and causality one famous option not discussed here is of course occasionalism.

14 Admittedly, God's omnipotence could be construed such that it allows for the breaking of physical laws. But I would prefer understanding God's interaction with the world as action compatible with the laws of nature.

Whitehead 1978:19-20) Even more general accounts of process philosophy, as for example given by Nicholas Rescher, emphasize the interactive relatedness of all that is involved in a process and thus the world in total could certainly be regarded as an enormous process (Rescher 1996:34-42).[15] Now if it is possible with the help of networked-joint causation to understand the actions of the mind upon the physical without breaking physical laws given that the brain is a vast interconnected network of neurons, then it should be likewise possible to understand the actions of God upon the physical without breaking physical laws given that everything in the world - by for example prehension - is interconnected to the rest of the world. Furthermore, networked-joint causation also includes the bottom-up causation, in the case of the mind and the body, the mental can (obviously) be affected by the body. Similarly, such causation in the case of a panentheistic understanding of God allows for God being affected by the world. Observe that although it is even possible to understand God as emergent, I think that the analogy should not be taken so far. Instead, I suggest, that it should be restricted to the nature of the causal interaction between God and the world.

Nevertheless it is possible to take the analogy one step further in another direction. We know that the mind develops, evolves, changes through time. The causal interconnection of the physical and mental is not restricted to a specific point of time. Actually it is *important* to realize that this interconnection is both distributed over space *and* time. In analogy the connection between God and the world is not punctual but spread out over space and time. As a consequence the effects on God are not only never lost but they even affect future actions of God upon the world. So alike to the human mind God could also be understood as ever-changing and evolving. (Or shouldn't it at least in Christian context rather be the other way round: alike to God the human mind is ever-changing and evolving?) Certainly, at first glance this may seem an odd idea. How could for example God's experience 'increase'? Wouldn't that mean that God at some point did not have experience and that God's experience always is - although great - just finite? The answer, I think, is no. Since God is infinite and has been infinite, adding something to the infinite does not change the fact the it is still infinite. In other words in the case of God's omniscience this would mean that God does not know *more* by experiencing the world in time but knows differently. God's knowledge changes but does not increase.

15 Nicholas Rescher also understands the mind as process: "[...] what we designate as 'mind' form an integral component of the diversified flow of natural processes [...] (Rescher 1996:114)". But he avoids the problems of causation briefly discussed in this paper by distinguishing between causal explanation and meaning explanation. This at least does not exclude the possibility that the mind is the causal product of matter. (Rescher 1996:114-115)

Summary, Conclusion and Outlook

In the mind/body problem we have seen that a linear understanding of causation seems insufficient for an adequate understanding and description of the relationship between an emergent mind and the body and especially of downward causation. The problems of this linear understanding are avoided by networked joint causation which also describes the involved phenomena better. In analogy to this, if we understand the world as interconnected in the sense some process philosophers do, networked joint causation could be applied to a panentheistic understanding of God as immanent and affected by the world, giving a basis for the description of the causal connection between the divine and the world. This leads to a further conclusion, namely that God alike to the mind is ever-changing and evolving. Apart from the need to develop and defend the above stated ideas in greater detail, some interesting questions arise. It would for example be possible to ask how the practice of prayer can be understood in this framework. A more theoretical theological question from a Christian perspective would be how the idea of humans as the image of God could be understood given a panentheistic view and a networked-causal-relationship.

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