

# **compos mentis**

## Mental Causation Under Two Types of Closure

**Jonah Branding**

Central Michigan University

### **ACKNOWLEDGMENTS**

In the process of writing this paper, I benefited greatly from the help, criticism, and encouragement of many wonderful people, including Dr. Hope May, Dr. Matthew Katz, and Dr. Joshua Smith. I owe similar debts of gratitude to The Student Philosophers of Central Michigan University, particularly Derek Sturvist, Savannah Dozhier, Francesca Ferrara, and Brendan Mantey. Finally, I must thank Cody Hatfield-Meyers, the University of Michigan-Flint, and all the attendees of the Michigan Undergraduate Philosophy Conference for giving me a critical environment in which to present my work.

### **ABSTRACT**

In this paper, I argue that if mental events can cause behaviors, there is no way in which we could know. This is because belief in mental causation fails to satisfy what I refer to as the “descriptive condition for justified belief in causation” (DC), which states that a person  $p$  is justified in believing that event  $c$  causes event  $e$  only if  $p$  can give some account of how  $c$  causes  $e$ . It follows that in order to be justified in believing that a mental event  $m$  causes a behavior  $b$ , we must know what it is about the phenomenal content of  $m$  (rather than the mere physical correlates of  $m$ ) which necessitates  $b$ 's occurring. In this way, to know that  $m$  causes  $b$  would require an answer to the problem of mental causation itself. Thus, insofar as we do not currently have an answer to the problem of mental causation, the belief that  $m$  causes  $b$  cannot be justified, since it fails to satisfy (DC). I go on to remark that if mental events do cause behaviors, the mechanism by which this cause occurs could even be unknowable in principle; that is, a solution to the problem of mental causation could be cognitively closed to human minds. I conclude that we should not hold mental events as being causally efficacious.

### **KEYWORDS**

Philosophy of Mind, Philosophy of Science, Mental Causation, Epiphenomenalism, Justification, Mysterianism, Physical Closure, Cognitive Closure, Knowledge of Causation, Causal Inference

## INTRODUCTION: CARVING A NICHE FOR MENTAL CAUSATION

How do our mental states cause our behaviors? How can my desire to drink tea levitate my arm toward this cup of earl grey? How does my opinion that Cage The Elephant is a wonderful band cause my fingers to click on their page on Spotify? How can the airy phenomenal experiences of our thoughts, feelings, desires, emotions, and proclivities impact the motions of our bodies, things which exist in the physical world?

It has been several hundred years now since Princess Elizabeth of Bohemia first framed this problem (known as *the problem of mental causation*) in a letter to Rene Descartes: "How [is it that] the mind of a human being can determine the bodily spirits in producing voluntary actions, being only a thinking substance[?]" (Soom 2010, 37) An objection which will be inevitably raised to anyone addressing the problem of mental causation in a modern context is that the problem itself is supposed to have been solved by modern science. Our new secular age has exorcised Descartes' supernatural discourse about "souls," and the "mind-body nexus." We recognize that mental states are linked in some fundamental way to states of the brain, and thus, it is thought, we no longer must worry about the difficulties involved in the messy dualism of Elizabeth and Descartes.

However, as Stephen Yablo notes, dualism "is not dead, only evolved. Immaterial minds are gone, it is true, but mental phenomena (facts, properties, events) remain. And although the latter are admitted to be physically *realized*, and physically *necessitated*, their literal numerical identity with their physical bases is roundly denied" (Yablo 1994, 264). We may no longer speak of minds as being fundamentally separate from their respective brains, but we still speak of the phenomenal content of our mental events (e.g., *the smell of roses* or *the feeling of happiness*) as being different in some vital respect from their physical correlates (e.g., *the uptake of 2-phenylethanol* or *the release of serotonin in the cerebral cortex*). Even if mental and physical events are in some sense two sides of the same coin, we can still reasonably speak of them as being at least superficially distinct. After all, even coins have a heads-side which is different from the tails-side.

None of this is to say that the footprint of our modern secular age is yet to grace the debate over mental causation. One of the principal contributions of our scientifically minded culture is that of "physical closure" (Crane 1992). It is supposed that every event in the universe has a sufficient cause in some

## Branding

prior physical event; on this view, all causal systems are physically “closed.” For example, strawberries don’t magically materialize on strawberry plants. Rather, the plant is determined to grow a strawberry by a set of prior physical conditions (e.g., the plant’s receiving such an amount of water and sunlight, the soil being such a way, the plant’s having such a genetic code). Similarly, it is supposed that since all human behaviors can be explained with reference to some prior set of physical conditions in the brain and body (e.g., *this set of nerves firing at this time, the release of this particular antagonist*), there is no room for mental conditions like desires, beliefs, opinions, etc. to cause behaviors.

Some authors have responded that behaviors could be “overdetermined” by having sufficient cause in both physical and mental prior conditions. On this view, it is both my neurophysical and mental states of say, desiring ice cream, which cause me to buy an ice cream cone. This might seem ad hoc, as it did to Jaegwon Kim, who referred to positing such overdetermining causal entities as “absurd” (Kim 1993, 281). I agree with Kim that we don’t have reason to believe that mental particulars overdetermine physical behaviors, but I think that we can give even more reason as to why this notion of overdetermination is unsatisfying.

In the following sections, I will not argue that mental causation does not occur. Rather, I will make the case that if some of our mental states do in fact cause some of our behaviors, there is no way in which we could know. This is because, lacking an account of *how* a mental event *m* causes a physical behavior *b*, we would not be justified in believing that any causal relationship exists between *m* and *b* in the first place, since such a belief would fail to satisfy what I will call the *descriptive condition for justified belief in causal relationships*. Though the arguments offered in this paper will thus be epistemic, rather than metaphysical in nature, the fact that we could not know that mental events cause behaviors (if in fact they do) should make us especially skeptical about the existence of any causal connection between mental events and behaviors at all. I conclude that an inference to the best explanation would explain human behaviors as being caused by merely physical events in our nervous and endocrine systems, with mental events arising as “epiphenomena” which lack causal power.

## THE DESCRIPTIVE CONDITION FOR JUSTIFIED BELIEF IN CAUSAL RELATIONSHIPS

The following is what I refer to as *the descriptive condition for justified belief in causal relationships*:

- (DC) A person  $p$  knows that event  $c$  causes event  $e$  only if  $p$  knows what it is about  $c$  which is causally relevant to  $e$ 's occurring

To see how the descriptive condition is necessary for justified belief in a specific causal relationship, let us consider two different cases.

- I. Dr. Bruins is a modern-day physician with acute knowledge of how viruses affect the body. A patient comes to her one day complaining of a fever. After discovering the presence of a flu virus in the patient's body, Dr. Bruins concludes that the virus is the cause of her patient's fever.
- II. Dr. Grifka is a medical researcher in the 1930's who is just discovering the existence of the flu virus, and as of yet knows little about it. A patient comes to him one day complaining of a fever, and Dr. Grifka discovers that the virus is present in the patient's body. He also concludes that the virus is the cause of the fever.

In (I), it seems clear that Dr. Bruins is justified in believing that the flu virus is what is causing her patient's symptom. However, in the second case, it does not seem like Dr. Grifka is equally justified. The critical difference is that while Bruins has some idea as to *how* the virus is causing the fever (being a contemporary physician with extensive knowledge of viral behavior), Grifka has no such notion. If you were to ask Dr. Bruins *what it is about the flu virus* which is causing the fever, she would describe that the virus is prompting the release of pyrogens into the bloodstream, which are bonding to certain receptors in the patient's thermoregulatory system and raising his body temperature. If you were to pose the same question to Dr. Grifka, he would have to shrug his shoulders. In brief, Dr. Bruins' belief in virus-fever causation satisfies the descriptive condition, whereas Dr. Grifka's does not.

## Branding

(DC) allows us to distinguish between those factors which are genuine causes from those factors which are false causes. The fact that we have a clear account of how viruses cause fevers is why we can be so certain that it's the viruses, and not say, the tomato soup or the motrin tablets, which are causing the patient's fever. Dr. Grifka is not justified in believing that the virus is the true cause of the fever because he cannot say for certain whether the presence of the virus is a cause, rather than a mere correlate, of the fever. By giving a description of how one event causes another event, we can say which relations are true cases of causation, and which relations are merely cases of "constant conjunction."

I think that a causal belief's satisfaction of (DC) is a necessary condition for it to be considered justified. On a qualifying note, there are some cases where belief in a causal relationship does not need to satisfy the descriptive condition.

1. In cases where an event has only one possible cause, (DC) does not need to be satisfied. For example, if I put an egg on the stove and observe it to thicken and turn white only after I turn on the heat, I can conclude that the heat is what is causing the egg to thicken and turn white, since heat is the only variable being manipulated. This is why experiments in the physical sciences try to isolate one possible causal variable—called the independent variable—when trying to learn about causal relationships.
2. (DC) can also be satisfied indirectly. For example, I believe that smoking often causes lung cancer, even though, as a person with minimal training in physiology, I do not know how smoking causes lung cancer. My own belief in smoking-lung cancer causation thus fails to satisfy the descriptive condition, and would seem, from our prior discussion, to be unjustified. However, I do have good reason to believe that there are some people (namely, those with superior training in physiology) who do know how smoking causes lung cancer. In this way, my belief in smoking-lung cancer causation can indirectly satisfy the descriptive condition.

In this section, I have outlined what I take to be a necessary condition for a belief in any causal relationship to be justified, namely, the descriptive condition for justified belief in causal relationships (DC). I have explained that (DC) says that in order to be justified in believing that some first event is an actual cause of a second event, one needs to be able to provide some account of *how* the first event causes the second event. Finally, I have outlined two types of cases in which beliefs in causal relationships can be justified without meeting the descriptive condition: when there is only one causal variable worth considering, and when (DC) can be satisfied indirectly. In the next section, I will show that belief in mental causation fails to satisfy the descriptive condition, and therefore cannot be justified.

## WHY BELIEF IN MENTAL CAUSATION FAILS TO SATISFY THE DESCRIPTIVE CONDITION

To repeat one last time, the descriptive condition states that in order for some person  $p$  to know that an event  $c$  causes another event  $e$ ,  $p$  must know what it is about  $c$  which is causally relevant to  $e$ 's occurring; that is,  $p$  must know how  $c$  causes  $e$ . To translate this into terms of mental causation, we replace the arbitrary cause  $c$  with mental event  $m$ , and the arbitrary effect  $e$  with behavior  $b$ . Thus, in order for us to justifiably believe that  $m$  causes  $b$ , we must have some idea as to how  $m$  causes  $b$ . This means that before we can form a justified belief in mental causation, we must first be able to answer the problem of mental causation itself (which asks how it is that mental events cause behaviors).

To make this all more concrete, let's fix concrete values for  $m$  and  $b$ . Say it's the first Tuesday after November 1st (election day), and I go into the polls ready to cast my ballot. I have the opinion that Evan is the most qualified candidate for city council, so he is the person for whom I decide to vote. If we really believe in mental causation, we would say that the mental event *my belief that Evan is the most qualified candidate* ( $m$ ) causes the behavior *my voting for Evan for city council* ( $b$ ).<sup>1</sup> Now, the question which should leap out from our prior discussion of justified belief in causal relationships is the following: what is it about my belief that Evan is the most qualified candidate which causes my behavior of checking off his box on the ballot?

---

1. Of course, this cause itself would be held effective only relative to a certain set of background conditions, e.g., *I will vote for the candidate whom I think is most qualified*.

## Branding

The immediate answer (and in fact, the one which I endorse) is that *the physical state of my brain which corresponds to my belief* is what causes me to vote for him. But notice: by maintaining that the neural correlates of my mental state *m* are what cause my behavior *b*, we deny any causal agency to *m* itself; that is to say, we end up maintaining that the phenomenal content of *m* is causally inert. This is nothing less than a wholesale rejection of mental causation (since it is the brain, not the mind, which is supposed to be doing the causing here). In order to preserve our belief in mental causation, we would have to say that there is something about the phenomenal experience of *m* which necessitates *b*'s occurring. Furthermore, we would have to say exactly what that something is, lest our belief in *m*-*b* causation fails to satisfy the descriptive condition. To do so would require an understanding of how the phenomenal content of a belief can cause a physical behavior like voting. Therefore, if we do not currently have a solution to the problem of mental causation, we cannot justifiably maintain that mental events cause behaviors at all.

Of course, it could be responded that mental states are nothing more than brain states. If we maintain this, then since brain states can cause behaviors, our mental states can cause behaviors, and we can keep our notion of mental causation under a mind-brain identity thesis. Such a position was outlined by J.J.C. Smart in his 1959 essay "Sensations and Brain Processes," (Smart, 1959) but the identity thesis has its share of problems. The most troublesome of these problems, I think, is that of intentionality (i.e. aboutness). We readily admit that mental events can be "about" things: for example, I can have thoughts about the Dalai Lama. However, it would seem strange to hold that I can have a physical brain structure which has this same property of "about the Dalai Lama." For this and other reasons, many people hold that while mental states may arise from brain states in a purely naturalistic way, the two have certain differences. I mean to argue that insofar as we admit that mental states are somehow distinct from brain states, we must admit ignorance as to whether these mental states are causally efficacious.

Here I have stated why (DC) entails that we do not know whether our mental states are causally efficacious. Below, I will discuss how it may be possible that there is no way in which we could know how our mental states cause our behaviors by applying the work of "mysterians" such as Colin McGinn and Noam Chomsky to mental causation.

## TWO KINDS OF IGNORANCE ABOUT THE CAUSAL EFFICACY OF MENTAL STATES

Here I would like to distinguish between two ways in which we can be ignorant of the causal efficacy of mental states, and briefly argue that the latter ignorance is the one from which we suffer.

The first type of ignorance is what I will call *contingent causal ignorance*. We are contingently ignorant of whether mental states can cause behaviors insofar as we are contingently ignorant of how this cause occurs (by [DC]). By “contingently ignorant,” I mean to say that the problem of mental causation is solvable, but we have not yet discovered its solution. Many problems in natural science are like this. For example, astronomers currently do not understand the nature of dark matter, and how it does what it does to the structures of galaxies. However, it is thought that the scientific problems associated with dark matter are solvable in theory—that we or our descendants will eventually come to understand what dark matter is, and how it makes galaxies behave as they do. In this way, we are *contingently ignorant* of the nature of dark matter.

However, I do not think that we are merely contingently ignorant of how our mental states cause our behaviors (if in fact they do at all). Rather, we may be *necessarily ignorant* of how this cause occurs. We are “necessarily ignorant” of how to solve a certain problem if and only if the solution to that problem is unattainable by us in theory—that is, the solution is *cognitively closed* to us. Just as a dog will never understand how the Krebs Cycle generates chemical energy due to the obvious cognitive limitations of dogkind, it is possible that humans will never understand how mental events interact with physical events, due to the cognitive limitations of humankind. This line of reasoning, dubbed “mysterianism” by philosopher/neurobiologist Owen Flanagan (Flanagan 1997, 313) has been well developed in the discourse about the hard problem of consciousness (that is, how physical events in the brain can cause mental events in the mind). In what follows, I will review the arguments in favor of mysterianism, and show how they can apply not only to the hard problem of consciousness, but also to our own discussion of mental causation.

Noam Chomsky, a defender of the mysterian camp, develops cognitive closure with the following examples: “we are not surprised to discover that rats are unable to run prime number mazes no matter how much training they receive; they simply lack the relevant concept in their cognitive repertoire. By the same token, we

## Branding

are not surprised that humans are incapable of the remarkable navigational feats of ants and bees; we simply lack the cognitive capacities" (Chomsky 2014, 7). Chomsky and others suspect that the relationship between the mind and brain is something which is "cognitively closed" to humans in the same way that an ability to run prime number mazes is cognitively closed to rats, or the workings of the Krebs Cycle are closed to dogs. For Chomsky, a solution to the hard problem of consciousness may be something about which humans are *necessarily ignorant* (as I have defined the term above). Other writers have more thoroughly argued skepticism about our ability to solve the hard problem of consciousness, which I think can be adapted directly to the problem of mental causation. Such skepticism has been articulated by Colin McGinn in his seminal 1989 paper "Can We Solve the Mind-Body Problem?"

McGinn argues that there are two ways in which humans can conceivably study the mind and brain. The first way is via introspection: the personal investigation of our own subjective mental lives. However, introspection alone will not be of help to the philosopher who wishes to solve the hard problem of consciousness. As McGinn notes, "Can we tell just by introspecting what the solution to the mind-body problem is? Clearly not. We have direct cognitive access to one term of the mind-brain relation, but we do not have such access to the nature of the link" (McGinn 1989, 354). For similar reasons, we would not be able to discover the link between mind and brain using purely empirical methods of neuroscience and psychology, what McGinn calls "perception" (as a contrast to "introspection"): "Conscious states are simply not potential objects of perception... No matter what recondite property we could see to be instantiated in the brain we would always be baffled about how it could give rise to consciousness" (McGinn 1989, 357).

To explain this last point, say that neuroscientists were to discover a certain strand of grey matter *B* just below the temporal lobe, which is somehow known to give rise to consciousness. No matter how thoroughly we investigate *B*, it would seem impossible for us to understand *how* consciousness emerges from it. To use McGinn's phrase, we would not understand how "the water of the physical brain is turned into the wine of consciousness" (McGinn 1989, 349). The conclusion McGinn and many other "mysterians" reach is that since we lack a means of studying the mind-brain *relation* (being limited perceptively to the domain of merely the brain, and limited introspectively to that of merely the mind), we will

never arrive at a satisfactory conclusion as to how conscious experiences are generated by the brain.

We can adapt McGinn's analysis of the hard problem of consciousness to our own discussion of the problem of mental causation. If we lack a means of discovering how events in the brain cause events in the mind (the hard problem of consciousness) due to the limits of our investigative capacities, then it seems like we must also lack a means of studying how events in the mind affect events in the body (the problem of mental causation), if they do at all. It follows that the belief that some mental event  $m$  causes some behavior  $b$  necessarily cannot be justified. This is because since (according to Chomsky and McGinn) the mechanism by which  $m$  causes  $b$  is cognitively closed to us; the belief fails to satisfy the descriptive condition.

I think that this limitation on our understanding of mental causation should give us even more reason to abandon the notion of mental causation entirely, and simply explain human behavior in physical terms. I will develop this conclusion in the following section.

### **IMPLICATIONS FOR A HUMBLE METAPHYSICS OF MINDS**

Above, I argued that if mental causation occurs, there is no way we could know it occurs, since any belief in mental causation must fail to satisfy the descriptive condition, barring a solution to the problem of mental causation more broadly. I have elaborated that it's entirely possible that the problem of mental causation is unsolvable, by adapting the work of Chomsky and McGinn. If this is the case, then we could not even conceivably be justified in believing in mental causation. Given this epistemic conclusion, I think that we have good reason to exorcise the notion of mental causation from our discussion of the mind-brain relation.

As noted in the introduction, there is already more or less an established consensus regarding physical closure (that all physical events have prior physical cause). Most people believe that we can explain human behavior in entirely physical terms, by discussing the causal relationships between neurons, neural networks, and the organs with which they communicate. Belief in physical closure provides a problem for belief in mental causation, but not an unsolvable problem, since those who believe in mental causation can still say that physical behaviors are "overdetermined." However, if it is impossible for us to know how mental causation occurs, the idea of overdetermination seems much more suspicious.

## Branding

If we could specify how mental causation occurs, and we could also (as we can now) specify how physical causation occurs, then we would have two rival scientific theories: one of mental causation, and one of purely physical causation. We could somewhat plausibly maintain both types of cause to be co-occurrent, and our behaviors to be overdetermined. But if we cannot specify how mental events cause behaviors, we do not have two equally valid scientific theories. We have one theory (that of the physical causation of behavior) and one conjecture of sorts (mental causation), since the latter fails to satisfy (DC) and thus cannot be justifiably believed in.

Allow me to spell out what I mean with the following example: Say that two botanists are debating about what causes plants to grow. Botanist A posits that the moon exerts a "growing force" which causes the plant to become larger over time. She gives an account of the nature of this growing force, and describes how it causes plants to grow. Botanist B posits that plants have a genetic code which acts as a blueprint for how and when the plant's cells will reproduce over time, given adequate physical conditions. They run some experiments and discover that Botanist B is in fact correct. However, Botanist A is not yet ready to eliminate her idea of moon-plant causation as theoretically superfluous; instead, she holds that both her moon model and B's cell-reproduction model operate at the same time, thus overdetermining that the plant will grow.

It would seem strange (or even, to borrow Jaegwon Kim's phrase, "absurd") for Botanist A to cling to her belief in the growing force, given the newfound evidence for B's model of plant growth. However, as long as A has detailed how the moon acts on these plants, A's belief in the growing force satisfies the descriptive condition, and there are perhaps not any dire problems with her maintaining that the growing force model is co-occurrent with B's model. But take a second case: everything is the same as the first example, except B leaves it completely ambiguous as to how the moon exerts the growing force on the plants. In fact, she claims that the mechanism by which the growing force operates is unknowable (as the mechanism by which mental events cause behaviors may be). Now it seems like B wasn't at all justified in holding the moon to cause plant growth in the first place; her belief failed to meet the descriptive condition, and now that a satisfactory explanation of how plants grow (A's model) has been verified, we have no reason to suppose that the growing force exists. We can eliminate it from botany.

Similarly, since belief in mental causation fails to satisfy (DC), belief in mental causation is unjustified. We would only have reason to believe that mental causation occurs if such a belief meets one of the two criteria in which satisfying (DC) is not necessary for justification as outlined above: (1) if mental states are the only potential causal variables, or (2) if we know that someone else has a belief in mental causation which can satisfy (DC) indirectly. Before we had a thorough account of physical closure, we could justify our belief in mental causation by appealing to (1). But now that we understand the body and brain to be a causal system at least principally physical in nature, and are able to view every behavior in the context of the physical background conditions which generate it, we can no longer do so. It is time to relinquish belief in mental causation; we have neither sufficient need nor understanding of it in our discourse.

## REFERENCES

- Chomsky, Noam. 2014. "Science, Mind, and the Limits of Understanding."
- Crane, Tim. 1992. "Mental Causation and Mental Reality." *Proceedings of the Aristotelian Society* 95: 185-202.
- Flanagan, Owen. 1991. *The Science of the Mind*. Cambridge, MA: The MIT Press.
- Galles, David, and Judea Pearl. 1997. "Axioms of causal relevance." *Artificial Intelligence* 97: 9-43.
- Mcginn, Colin. 1989. "Can We Solve the Mind–Body Problem?" *Mind* 158 (391): 349-66.
- Papineau, David. 2000. "The Rise of Physicalism." *The Proper Ambition of Science* 2: 174-203.
- Smart, J.J.C. 1959. "Sensations and Brain Processes." *The Philosophical Review* 68 (2): 141-156.
- Soom, Patrice. 2011. *From Psychology to Neuroscience: A New Reductive Account*. Heusenstamm: Ontos Verlag.
- Yablo, Stephen. 1992. "Mental Causation." *The Philosophical Review* 101 (2).