

## DENNETT'S ACCOUNT OF MIND VERSUS KIM'S SUPERVENIENCE ARGUMENT

ZBIGNIEW JAN MARCZUK

*Claremont Graduate University*

**Abstract.** This paper challenges Daniel Dennett's attempt to reconcile the performance of mind and brain within a physicalist framework with Jaegwon Kim's argument that a coherent physicalist framework entails the epiphenomenalism of mental events. Dennett offers a materialist explanation of consciousness and argues that his model of mind does not imply reductive physicalism. I argue that Dennett's explanation of mind clashes with Jaegwon Kim's mind-body supervenience argument. Kim contends that non-reductive physicalism either voids the causal powers of mental properties, or it violates physicalist framework. I conclude that Dennett's account of mind does not escape or overcome Kim's mind/body supervenience problem. If Kim's argument does not prove Dennett's explanation of mind to be either a form of reductive materialism, or a logically inconsistent view, it is due to the ambiguity of concepts involved in Dennett's theory.

This paper challenges Daniel Dennett's attempt to reconcile the performance of mind and brain within a physicalist framework with Jaegwon Kim's argument that a coherent physicalist framework entails the epiphenomenalism of mental events. In several publications, such as *Elbow Room* (1984), *Consciousness Explained* (1991a), *Darwin's Dangerous Idea* (1995), *Kinds of Minds* (1996a), and *Freedom Evolves* (2003), Dennett offers a materialist explanation of consciousness and argues that his model of mind does not imply reductive physicalism. Reductive physicalism—the view Dennett rejects—assumes that all properties are ultimately reducible to the properties of fundamental physics. In this view, all the properties of mind and their causal powers are reducible to the neurobiological phenomena taking place within an organism.<sup>1</sup>

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<sup>1</sup> Reductive identification of higher-level properties with the ontologically simpler properties is one of several models of reduction discussed in the philosophy of mind. In this pa-

The theory of mind Dennett advocates is a type of non-reductive physicalism, grounded in the claim that consciousness (mind) evolved from brains as a complex virtual subsystem, designed for self-improvement by the natural evolution. This subsystem consists of many functional properties, such as thinking, wanting, and believing, which have powers to cause one another and also to cause bodily activities. Dennett claims that the properties of mind and their powers are not reducible to the neurobiological activities of the brain and to the forces of their underlying physical conditions. Thus, the properties of mind evolved from, but are not identical with, the activities of the brain.

I think Dennett's explanation of mind clashes with Jaegwon Kim's mind-body supervenience argument. Kim argues that non-reductive physicalism either voids the causal powers of mental properties, or it violates physicalist framework. His argument rests on two principles: a) Within a physicalist framework all mental events are instantiated in an organism by an underlying set of exclusively physical base conditions; b) Physical causal conditions are both necessary and sufficient for all physical properties to occur in a system. According to these conditions, one of the two obtains, either a) mental properties do not have causal powers to instantiate any mental or physical properties in the system and they are reducible to the neurophysiological properties of the brain, or b) the theory violates the physicalist groundwork.

Dennett declares his theory of mind as physicalist and coherent. He denies epiphenomenalism of the properties of mind. However, he does not explain how his theory avoids Kim's dilemma. In what follows, I examine whether Dennett's theory of mind is immune to Kim's argument. I demonstrate that Dennett's theory is committed to the non-reductivist physicalism. Then, I discuss two examples of the supervenience argument to illustrate Kim's point that the non-reductive physicalist groundwork eliminates causal powers of mental events. Also, I consider whether Dennett's theory can avoid Kim's dilemma or solve it. Finally, I conclude that Dennett's account of mind does not escape or overcome Kim's mind/body supervenience problem. If Kim's argument does not prove Dennett's explanation of mind to be either a form of reductive materialism, or a logically inconsistent view, it is due to the ambiguity of concepts involved in Dennett's theory.

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per I appeal to Kim's model of reduction, as Kim uses it in the context of the supervenience argument. The model is: "If Xs are reducible to Ys, then Xs are noting over and beyond the Ys." For example, the gene, a mechanism in an organism that encodes and transmits genetic information, is reduced in molecular biology to the DNA molecules, as it is the DNA molecules that perform the task of encoding and transmitting genetic information. The DNA molecules are the genes (Kim 2005, 34, 163).

## 2. REDUCTIVE AND NON-REDUCTIVE PHYSICALISM

Reductive physicalism is a materialistic theory committed to the statement that in this world all existing entities are physical, and that all properties are ultimately reducible to the properties of fundamental physics. The physical domain consists of properties of basic physics, their aggregates, and relations between basic physical particles. This domain is causally closed, as it is restricted by the following conditions: a) any entity aggregated out of physical entities is physical, b) any property that is formed as micro-based properties in terms of entities and properties in physical domain is physical, c) any property defined as second-order property over physical properties is physical (Kim 1998, 113-114). The basic reductivist formula assumes that: "If Xs are reduced, or reducible, to Ys, there are not Xs *over and above* Ys" (Kim 2006, 275-276). Accordingly, the reductive psycho-neural identity thesis holds that there are no properties of mind (mental properties) *in addition to* neural properties, or, to use the more common reductivist expression, properties of mind are 'nothing over and above brain processes' (Smart 2004, 119).<sup>2</sup>

Thus, in this view, mental events do not have causal powers to instantiate any physical or mental events that are different from the powers of these events' underlying neurobiological basis.<sup>3</sup> Causal powers of mental phenomena, such as, thinking, believing, and wanting, are all reducible to the performance of the brain. But suppose that mental phenomena fail to reduce: these phenomena become epiphenomenal, that is, causally impotent mental properties. This would push mental properties into mental irrealism, for, within the physicalist framework, the reality of events is determined by the principle that Kim calls "Alexander's dictum": "*To be real is to have causal powers*" (Kim 1993, 202). For Samuel Alexander, to deprive something of causal powers is to deprive this thing of existence (Kim 2005, 158).<sup>4</sup> Denying independent causal powers of mental events, reductive physicalists assume that all human actions depend on the neurobiological conditions.

Non-reductive physicalists accept that all concrete existing things in this world are physical, but they claim that at least some "higher-level" properties produced by complex physical systems are not reducible to their

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<sup>2</sup> The expression "over and above" was coined by J.J.C. Smart in 1959. Since then it is frequently used by the contemporary philosophers of mind.

<sup>3</sup> An "event" can be defined within a physicalist theory as the instantiation of a certain property (physical or mental) at some particular time by a material object.

<sup>4</sup> Kim refers to Alexander's discussion in, Alexander 1927, 8.

physical base.<sup>5</sup> Accordingly, Dennett claims that “We are each *made* of mindless robots [cells] and nothing else, no non-physical, non-robotic ingredients at all.” But he also says that “These communities of cells are fascistic in the extreme, but *your* interests and values have little or nothing to do with the limited goals of the cells that compose you—fortunately” (Dennett 2003, 2-3). He admits that all mental activities depend in a certain way on the operation of the brain. But he denies the reductivist thesis that the mental events (that is, “you”) are nothing over and above the physical events, and that they do not have their own causal powers (Dennett 2003, 246). As he writes, some activities of mind bring about other activities of mind and they cause bodily actions:

We are transformers. That’s what a mind is, as contrasted with a mere brain: the control system of a chameleonic transformer, a virtual machine for making more virtual machines (Dennett 2003, 250-251).

... some of our actions ... result from decisions we make in the course of trying to make sense of ourselves and our own lives (Dennett 2003, 251).<sup>6</sup>

Our evolved capacity to reflect gives us—and only us—both the opportunity and the competence to evaluate the ends, not just the means. ... we can formulate, criticize, revise, and—if we are lucky—mutually endorse a set of design principles for living in society (Dennett 2003, 268).

Thus, Dennett grounds his theory in materialism. But, in his view, the properties of mind are not identical with their underlying physical properties. Also, having powers to bring about other mental or physical activities, they are not epiphenomenal properties.<sup>7</sup> This mind/body property dualism makes Dennett’s theory a form of non-reductive physicalism.

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<sup>5</sup> Kim formulates the non-reductive physicalist thesis as: “all concrete individual things in this world are physical, but complex physical systems can, and sometimes do, exhibit properties that are not reducible to ‘lower-level’ physical properties. Among these irreducible properties are most notably, mental properties, including those investigated in the psychological and cognitive sciences” (Kim 2006, 275).

<sup>6</sup> Dennett credits Mary Coleman for this view.

<sup>7</sup> Dennett distinguishes between the epiphenomenalism of Thomas Huxley and Charlie D. Broad. According to Huxley, “every mental event is caused by a physical event in the brain, but mental events have not causal power of their own, being the absolute terminal links of causal chains. So all mental events are effects of the physiological processes going on in our nervous system, but they are powerless to cause anything else—not even other mental events” (Kim 2006, 86). According to Broad, to say that “*x* is epiphenomenal” is to say that “*x* is an effect but itself has no effects in the physical world whatsoever” (Broad 1925, 118). Dennett rejects Broad’s description as being too strong. For, if an epiphenomenon *x* has no physical effect, it cannot be detected at all (Dennett 1991a, 402). He views Huxley’s description as unproblematic and irrelevant to his argument (Ibid., p. 405).

### 3. DENNETT'S MODEL OF CONSCIOUSNESS (MIND) AND ITS CAUSAL POWERS

At the basis of Dennett's theory of mind lies the view that consciousness evolved in some organic systems during several billion of years as a result of the self-preservation drive, which naturally arose in organic systems. In Dennett's account, consciousness is a complex self-improvement system designed and driven by avoidance and prevention of harm. Consciousness evolved from brains, as a set of advanced and specialized subsystems gathering and processing information about organisms' internal and external living conditions, to secure and improve these organisms' self-generated living. Explaining his view of consciousness Dennett writes:

... we are *designed* by evolution to be "informavores," epistemically hungry seekers of information, in an endless quest to improve our purchase on the world, the better to make decisions about our subjectively open future. The moon is made of the same sort of stuff that we are, obeying the same laws of physics, but its nature, *unlike* ours, is fixed. [...] The difference between us and the moon is not a difference of physics; it is a higher-level difference of design. We are the product of a massive, competitive design process; the moon is not (Dennett 2003, 93).

The relevant information about organisms' external environment and internal functioning enables these organisms to advance in their present and future living environment.

Some information is genetically transmitted, some is non-genetically acquired. Non-genetic information is obtained via memes. Memes are units of information residing in brains, able to replicate from one brain system to another:

... a meme is an information-packet with attitude—a recipe or instruction manual for doing something cultural. Memes are thus analogous to genes. What is a meme made of? It is made of information, which can be carried in *any* physical medium. Genes, genetic recipes, are all written in the physical medium of DNA, ... Memes, cultural recipes, similarly depend on one physical medium or another for their continued existence (they aren't magic), but they can leap around from medium to medium, being translated from language to language, just like... recipes! (Dennett 2003, 176)<sup>8</sup>

At the early stage of the control systems memes were instinctively selected. With the advancement of mind memes became methodically select-

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<sup>8</sup> Also, see, Dennett 1991a, 201-208. Dennett adopts the theory of memes from Richard Dawkins.

ed, according to the systems' foresight and planning for the future (Dennett 2003, 267). The human decision-making process and the selection of actions depend upon the relevant memes being hosted by the brain and accessible to the consciousness. The mind's choice of memes and actions may, or may not, be monitored by the system.

One late development of consciousness was the capacity to evaluate anticipated future actions. This faculty evolved with the activity of sharing ideas with others, particularly with communicating the actions and plans. The *self* eventually evolved from the ability to consider future actions and intentions, to arrange plans, and to communicate with others. Dennett describes the self, a functional subsystem, as "a center of narrative gravity ... to provide *me* with a means of interfacing with myself at other times" (Dennett 2003, 253). But, the self—the conscious awareness, is only a part of a much larger consciousness which often operates unmonitored. Dennett writes that "a lot of what *you* are, what you are doing and know about, springs from structures down there in the engine room, causing the action to happen" (Dennett 2003, 253).

Again, this account of mind shows that properties of consciousness have powers that can effect organisms' immediate living conditions. As he explains:

Many creatures have evolved simple instinctual behaviors for what might be called home improvement, preparing paths, lookouts, hideouts, and other features of their neighborhoods, generally making the local environment easier to get around in, easier to understand. Similarly, when the need arises, creatures evolve instincts for sprucing up their most intimate environments: their own brains, creating paths and landmarks for later use. The goal unconsciously followed in these preparations is for the creature to come to know its ways around itself, and how much of this internal home improvement is accomplished by individual self-manipulation and how much is incorporated genetically is an open empirical question (Dennett 2003, 247).

It is the self-preservation force that is driving organisms' activities of mind and of the body "to come to know its ways around itself." Moreover, it seems that according to Dennett some organisms are able to coordinate this force, since he suggests that a variety of "this internal home improvement" is a subject of self-manipulation. He strengthens his claims about the causal powers of the properties of mind: "... *I*, the larger, temporally and spatially extended self, can control, to some degree, what goes on inside of the simplification barrier, where the decision-making happens" (Dennett 2003, 253). "We can ask each other to do things, and we can ask

ourselves to do things. And at least sometimes we readily comply with these requests" (Dennett 2003, 251).

Furthermore, he claims that building upon what had already evolved, some information-sensitive subsystems of consciousness gradually acquired the capacity to recognize reasons for acting in a certain way, to reflect on these reasons and to convert some reasons into alternative reasons in order to serve another purpose (Dennett 2003, 260).

The theory of consciousness Dennett offers entails causal relations between: a) various mental events, for example, between deliberating about reasons for acting and making a certain decision, and also b) mental and physical events, for example, between willing to obtain some goal and acting for this particular aim. In fact, his account of mind is committed to the general non-reductive physicalist claims that: a) all existing entities and their mereological aggregates are physical, b) all properties of mind evolved from their underlying physical bases, c) properties of mind are distinct from their underlying physical properties (chemical, biological, neural), d) properties of mind are not epiphenomenal, that is, these properties possess causal powers that are irreducible to the powers of their supporting neurophysiological bases. Dennett's claims about the causal powers of mental events and the commitment to non-reductivist physicalism make his theory of mind a target of Jaegwon Kim's supervenience argument.

#### 4. KIM'S SUPERVENIENCE ARGUMENT: CAUSAL POWERS OF MENTAL EVENTS

According to Kim, the supposition that within a physicalist framework mental events have powers to cause either other mental or physical events is indefensible.

Kim argues that the claim that any mental event has sufficient power to bring about another mental event violates the *physicalist supervenience thesis*, which may be formulated as: All mental properties are instantiated in organic systems upon their physical base properties, which are both necessary and sufficient for all mental properties to occur in the system (Kim 2000, 9-10, 39). Also, he argues that the possibility of a mental event having the power to cause a physical event violates the *physical causal closure* principle: Every physical event is causally instantiated in an organism by this event's preceding set of exclusively physical causes (Kim 2000, 40). The nomological conception of causality states that: "an instance of

$M$  causes an instance of  $N$  just in case there is an appropriate causal law that invokes the instantiation of  $M$  as a sufficient condition for the instantiation of  $N$ " (Kim 1993, 204).

#### 4.1. Case Study 1: Mental to Physical Causation

Suppose a person wants to smoke and she does smoke. Can we consider this person's volition (mental property) to be causally efficacious for her actual smoking (physical property) without violating the physicalism? The physicalist supervenience thesis requires that the desire for smoking must have its own physical realization base, which is necessary and sufficient to instantiate this desire. Now the desire for smoking is considered to cause the actual smoking. But according to the physical causal closure principle, the act of smoking (just as every physical event) has to be causally instantiated in an organism by its preceding set of *exclusively* physical causes. It is not possible to hypothesize that the desire for smoking may have sufficient causal power to instantiate appropriate physical base conditions, which are necessary to cause the actual smoking, for this hypothesis violates the principle of physical causal closure again. All physical base conditions must have exclusively physical causes.

The only possible causal explanation is that the preceding physical conditions that cause the desire for smoking are also causally responsible for the actual smoking. But now there is no reason to view the desire for smoking as being a cause of the actual smoking. If the preceding physical conditions are causally sufficient for the act of smoking, how could the desire for smoking also be a sufficient cause of the act of smoking? It seems we need to accept that either a) the desire for smoking has no causal power at all and it can be by-passed as an epiphenomenon, or b) it inherits its causal powers from its underlying physical state(s). Dennett denies that thinking, willing, and other phenomena of mind are epiphenomenal.<sup>9</sup> But Kim argues against the possibility of mental properties inheriting causal powers of their underlying physical conditions.

In Kim's view, if we assume that a) the desire for smoking shares in the causal power of its underlying physical basis (and this is how the desire becomes a sufficient cause of the act of smoking), and at the same

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<sup>9</sup> Dennett writes that consciousness "has lots of work to do, but its accomplishments seems to disappear when we ask ourselves what work it is doing *right now* (at time  $t$ ). ... it can seem that it is an utterly epiphenomenal accomplishment, along for a free ride. An evolutionary perspective shows us why this is mistaken" (Dennett 2003, 246).



time we assume that b) the underlying physical basis of this desire is also a sufficient cause of the act of smoking, we end up having two independent sufficient causes of a single act of smoking. That would be unacceptable causal overdetermination. For here, the desire for smoking is causally sufficient for the act of smoking, and so is the underlying physical basis. These two causes together do not gather more causal power to bring about the act of smoking than each of them alone. Also, this overdetermination allows arguing that a) all mental causes are dispensable, as there always is a physical cause available to substitute for every mental cause, and b) it is conceivable that a mental cause causes a physical event in absence of a parallel physical cause. The latter violates the physical causal closure.

Furthermore, we cannot suppose that the desire for smoking and its underlying physical basis constitute a single *jointly sufficient* cause for the actual smoking, such that each of them is necessary but individually insufficient, because, according to physical causal closure, all physical events have *exclusively* physical causes. Now, via Alexander's dictum, the desire for smoking, being a real mental event, is supposed to have its own causal power that is not identical with its underlying physical basis. But what smoking-related work is this desire to cause? There is no causal work for this desire to do. Thus, we reach Kim's *exclusion dilemma*: "... given that *P* [a physical property] is a sufficient physical cause of *P\** [another physical property], how could *M* [a mental property] *also* be a cause, a sufficient one at that, of *P\**? What causal work is left over for *M*, to do?" (Kim 1993, 208)

Kim's argument shows that within the physicalist groundwork mental events do not have causal power to instantiate physical events.

#### 4.2. Case Study 2: Mental to Mental Causation

Suppose a person believes that high-risk sport activities are hazardous and undesirable. For that reason she decides not to join the rock-climbing club, where many of her friends spend much of their free time. Assuming physicalism obtains, is this person's belief causally responsible for her decision not to be a member of the rock-climbing club? To make the question more general, do mental events have sufficient power to cause other mental events within the physicalist framework? Kim argues that according to the Physical Realization Thesis,

... for a mental property to be instantiated in a system, that system must instantiate an appropriate physical property, and further that whenever any system instantiates this physical property, the mental property must of necessity be

instantiated by it as well. Mental events and states require physical bases, and when required physical bases are present, they must occur (Kim 1993, 200).<sup>10</sup>

Again, within the physicalist framework a belief cannot be a sufficient cause of some person's decision, because all mental events must have their appropriate underlying physical bases that are causally necessary and sufficient for mental events. Accordingly, the belief that high-risk sports are hazardous must have its own preceding physical base conditions that are causally efficacious for it, and likewise, the decision not to join the rock-climbing club must have exclusively physical base conditions that are necessary and sufficient to cause this decision. There is no causal relation between the belief the person has and the actual decision this person makes.

These two above cases eliminate causal powers of mental events to instantiate either physical or mental events within physicalism. Thus, Kim's argument shows that non-reductive physicalist theories, such as Dennett's, are logically inconsistent. Given that physicalism obtains, mental events, such as, willing, believing, thinking, being content, or being in pain, are functionally useless. According to Kim's reasoning, physicalist explanations of human behavior can disregard mental properties. Does Dennett solve or avoid Kim's dilemma?

## 5. MATERIALIST "MENTAL" PROPERTIES

I think Dennett aims to avoid Kim's supervenience argument by modifying the meaning of "mental" events. In Dennett's view, all the activities of mind occur in the system due to the information obtained by consciousness via memes. For example, if a system is in a mental state of pain at a certain time, this system has some tissue damage at this time, which activates C-fibers (where C-fiber activation is the pain realizer in the human system). The system's experience of pain means detecting the C-fiber pain-memes by some specialized subsystem that gathers/distributes information. The information, perceived as pain, initiates a self-protective behavioral response within an organism. The information gathering/distributing subsystems developed from brains and are brain driven.

Similarly, for a human system to have a certain belief, or a desire, is for that system to detect the best (most coherent and most beneficial) part of the interpretive scheme within the total domain of information concerning

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<sup>10</sup> The Physical Realization Thesis is a form of the mind-body supervenience thesis. See, page 9 in this paper.

propositional attitudes that this system possesses. This information is also carried by memes. To Dennett, beliefs, desires, self-exploration thoughts, and other properties of mind are kinds of informative processes, performed by various subsystems of the brain upon memes:

Human consciousness is *itself* a huge complex of memes (or more exactly, meme-effects in brains) that can best be understood as the operation of a “*von Neumannesque*” virtual machine *implemented in the parallel architecture* of brain that was not designed for any such activities. The powers of this *virtual machine* vastly enhance the underlying power of the organic *hardware* on which it runs (Dennett 1991, 210).

There is no single, definitive “stream of consciousness,” ... Instead of such a single stream (however wide) there are multiple channels in which specialist circuits try, in parallel pandemoniums, to do their various things, crating Multiple Drafts as they go. ... Some of this design is innate, and is shared with other animals. But it is augmented, and sometimes even overwhelmed in importance, by microhabits of thought that are developed in the individual, partly idiosyncratic result of self-exploration and partly the predesigned gifts of culture. Thousands of memes, mostly borne by language, but also by wordless “images” and other data structures, take up residence in an individual brain, shaping its tendencies and thereby turning it into a mind (Dennett 1991, 253-254).

Apparently, for Dennett “mental events” are not the kind of non-physical properties that Kim contrasts with the physical properties. Consider these claims that Dennett makes about mind:

- A) Consciousness consists of various kinds of specialized virtual machines that receive/provide information and operate on “the brain’s parallel hardware” (Dennett 1991, 218).
- B) Information is carried by memes that are gene-like data units nesting in brains.
- C) Properties of consciousness have causal powers to effect activities of mind and brain.

In Dennett’s account of mind there are no properties that correspond to Kim’s “mental events.” If we accept that memes are physical gene-like information units residing in brains, the properties of mind seem to be results of the operation of the brain. For that reason, Dennett’s theory seems to avoid the mental/physical property dualism, as well as Kim’s causal relation problem between the mental and physical properties. Dennett describes mind as a set of brain-operated subsystems. These subsystems are machines processing information. Information consists of sets of gene-like data-carriers located in brains.

This theory of mind distinguishes between operations of mind and brain, but the properties of mind and those of brain appear to be of rather similar nature. Since both of these properties appear to be physical, Dennett does not face Kim's dilemma. In his account of mind, properties such as thoughts can cause bodily activities without violating physicalist groundwork, as he writes:

One of the phenomena that Wegner exposes for a better view is "ideomotor automaticity." This is the name for the familiar—but always unsettling—phenomenon in which thinking about something can bring about a bodily action related to that thing without the action being an intentional action. For instance, you might betray a secret sexual thought with a telltale hand motion that you didn't intend and, in fact, would be embarrassed to discover. In such a case, you are not conscious of the causal relation between the thought and the act, but there it is, as good as the causal relation between the aroma of good food and salivation (Dennett 2003, 246).

Here, the causal relation between "a secret sexual thought" and the unintentional "telltale hand motion" is unproblematic, because it neither violates the *physical causal closure*, nor the *physicalist supervenience thesis*. The "thought" is a mechanical processing of some particular memes by an appropriate information-sensitive subsystem of the brain that triggers another information-sensitive brain center causing specific bodily activities, related to this information. Similarly, "the aroma of good food," which is a certain way of receiving information, excites an organism causing its salivation.

But the explanation of mind as a complex subsystem of the brain, operating upon the brain-hosted memes, seems to classify Dennett's theory to reductive physicalism. But reductive physicalism is not the view Dennett embraces. Thus, the emerging question is how Dennett views the nature of mind and its properties; are they physical or otherwise?

## 6. REDUCTIVISM OR KIM'S CAUSAL RELATION PROBLEM

Dennett does not provide a clear answer to the question concerning the nature of mind. He writes that his theory bridges physical activities with those of mind by finding the "mediating level" within consciousness that is neither neurophysiological nor phenomenological:

... recently Colin McGinn has claimed that consciousness has a "hidden structure" that lies beyond both phenomenology and physiology, and while this

hidden structure could bridge the gap, it is probably forever inaccessible to us. ... The "software" or "virtual machine" level of description I have exploited in this book is exactly the sort of mediating level McGinn describes: not explicitly physiological or mechanical and yet capable of providing the necessary bridges to the brain machinery on the one hand, while on the other hand not being explicitly phenomenological and yet capable of providing the necessary bridges to the world of content the worlds of (hetero-) phenomenology (Dennett 1993, 433-434).

How should we view the mediating "software" or "virtual machine" level of description Dennett offers? If we take it as a physical structure of mind, Dennett's theory of mind becomes a form of reductive physicalism. If the mediating level is not a physical structure, Kim's dilemma returns. The only difference would be that this time Kim's question would regard the causal relation between the physical properties and the properties of the "virtual machine."

Dennett does not explain the causal relation between his mediating level of consciousness and the brain, for he believes that the causal relations are not perceptible. He appeals to Hume's view that what we externally perceive or introspect as "causes" and "effects," are sets of consecutive events (or states of affairs) which we interpret as causing one another. These chains of events are effects of an extensive network of events that are indiscernible to us. Based on Hume's view, Dennett argues that the causal powers of consciousness are multiply instantiated in an organism. These powers may involve so many factors that it would not be possible to list all the conditions that constitute them. For that reason, neither these powers nor their source can be demonstrated. Thus, Dennett believes that "Consciousness has lots of work to do, but its accomplishments seem to disappear when we ask ourselves what work it is doing *right now* (at time *t*). Since at each moment it 'doesn't really do anything'" (Dennett 2003, 246).

## 7. IS DENNETT'S THEORY OF MIND IMMUNE TO KIM'S DILEMMA?

Does Dennett's appeal to the mediating level of consciousness free his theory from reductive physicalism and enable his theory to either solve or avoid Kim's supervenience argument? I think it does not. If the nature of the mediating level is clarified, Dennett's theory either has to address the dilemma or it becomes a reductive physicalism. The appeal to the mediating

level of consciousness that is “not explicitly physiological or mechanical” simply shifts Kim’s causality problem from the level of mental-to-physical causation to the ambiguous platform of his “virtual machine”-to-physical causation. In addition to this ambiguous relation, Dennett’s theory of mind heavily depends on the theory of memes. But, the nature of memes is ambivalent. Unlike genes, memes are not physically observable entities and neither a microscope nor any other tool allows their examination. Thus, it is an open question whether it is justifiable to regard information as a data structure made of gene-like units. The mediating level of consciousness and the uncertain nature of information make Dennett’s explanation of consciousness obscure. And, if his interpretation of mind seems to by-pass Kim’s dilemma it is only due to the ambiguity of these concepts.

Alternatively, if Dennett’s theory of consciousness depicts the “virtual machine” as physical, operating upon physical properties of data-carriers, memes, the consciousness is reducible to the functions of the brain. In this account of mind, thoughts, beliefs, desires and all the other so-called properties of mind become ways in which specialized subsystems of the brain receive and process information. There is no significant difference between, for example, deliberation about how to construct a bridge and the eye-perception of a sudden beam of light, resulting in eye-blinking. Both events are ways of gathering and processing information by a relevant subsystem of the brain. This view does not need to connect the phenomenological realm of mind with the neurophysiological realm of brain, for such a theory of mind entirely voids the phenomenological realm of mind. For the same reason, this theory becomes a *type physicalism*, denying that there are any mental properties over and above physical properties. Considering the above objections, it is regrettable that Dennett did not address Kim’s supervenience argument.

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