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## Introduction to Monist Alternatives to Physicalism

Max Velmans and Yujin Nagasawa

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In the history of Western thought, attempts to understand the relationship of mind and consciousness to body and brain have largely been shaped by competing monist versus dualist convictions about whether these are different *types* of entity or process. Bodies and brains *seem* to be very different from minds and consciousness. Arms and legs for example seem to be made of completely different “stuff” to thoughts and feelings. Nor can one find qualia by examining bits of the brain. Consequently, dualists argue that body/brain and mind/consciousness are different *types* of thing. There is also extensive evidence that the body and brain affect mind and consciousness via the senses (for example that the visual system affects visual experience) and that mind and consciousness affect the body and brain (for example in the way that visual experiences, thoughts, and conscious choices influence subsequent actions). Dualists therefore suggest that mind and consciousness *interact* with body and brain. As far as it goes, nothing could be simpler—and for this reason, interactionist-dualism has provided a natural place of departure for alternative theories of consciousness or mind. Any alternative theory would have to account for the same facts in an equally plausible way. Yet in contemporary science and philosophy of mind there are very few defenders of interactionist-dualism.

Why? Within dualism the ontological nature of consciousness and mind remains essentially mysterious. According to Descartes, the father of modern dualism, mind and consciousness are *res cogitans* (substance that thinks), while the material world is *res extensa* (substance that has extension in space). But what kind of substance is a “substance that thinks”? And how could substances as different as thinking stuff and extended stuff causally interact? As Hume (1739), Moore (1910), and Russell (1948) have pointed out, differences in *appearance* between entities and events do not in themselves eliminate the possibility of their causal interaction—witness the mutual influence of magnetic fields and electric currents. Yet, if consciousness or mind is truly immaterial then the differences between the mental and the material world seem to be more fundamental than any differences that obtain amongst physical energies and events. How could experienced *wishes* or *desires* affect the behaviour of *neurons*? And how could *electrochemistry* give rise to *subjective experiences*? According to Spinoza (1677) and Leibniz (1686) the causal interaction of *res cogitans* with *res extensa* is literally inconceivable.

It is not surprising therefore, that monists have searched for some way of unifying mind and consciousness with body and brain. In principle, this can be done in one of three ways:

1. Mind and consciousness might be nothing more than particular aspects or arrangements of physical matter (physicalism; functionalism).
2. Physical matter might be nothing more than particular aspects or arrangements of mind and/or consciousness (idealism).
3. Mind, consciousness and physical matter might be aspects or arrangements of something more fundamental that is in itself neither “mental” nor “physical” as

normally understood (dual-aspect theory; neutral monism; panpsychism).

Given the spectacular advance of materialist science it is not surprising that contemporary philosophers and scientists have largely favoured option 1. According to physicalists, for example, there is only one type of thing in this world. Everything, including conscious experience is ultimately physical. Although we observe a wide range of objects and properties in nature, this world is ontologically uniform and there is nothing over and above the physical. If true, the problem of how brains might produce conscious experiences and how conscious experiences affect brains should be discoverable by neuropsychological research, and the physical sciences should in principle be able to provide a complete explanation of everything, including consciousness, in the way that thermodynamics provides a complete physical explanation of the temperature of a gas or meteorology provides a complete physical explanation of lightning. In some respects, the rise of modern neuropsychological and related sciences has encouraged this conviction, for example in the way that brain imaging techniques have provided new insights into the neural causal antecedents and correlates of particular experiences. However, in spite of over 50 years of effort following the modern introduction of physicalism by the psychologist U. T. Place (1956) and philosophers such as J. J. C. Smart (1962) and D. M. Armstrong (1968), physicalism has been unable to provide a satisfactory explanation of *how* or *why* something like a brain state could produce something like an experience. Viewed from a third-person perspective, the neural causal antecedents of conscious states simply produce other neural events—the neural correlates of those conscious states. Why are those correlates accompanied by phenomenal experience at all? Why do we have a red experience, instead of a blue experience, when a certain part of the brain is stimulated? To these questions, physicalism provides no real answer.

Physicalism also faces a more fundamental problem. Given their inaccessibility to third-person scrutiny, what are the *grounds* for categorising seemingly mental events such as the first-person observable qualia of consciousness as “physical”? Physicalists such as Place and Smart entirely accept that conscious states *seem* to be different from their neural causal antecedents and correlates and, consequently, that our natural language descriptions of brain states and experiences will differ. However, they argue, science will ultimately *discover* these to be one and the same, i.e. a contingent, rather than a necessary identity will be established between them.

Instances where phenomena viewed from one perspective turned out to be one and the same as seemingly different phenomena viewed from another perspective do occur in the history of science. A classical example is the way the “morning star” and the “evening star” turned out to be identical (they were both found to be the planet Venus). But viewing consciousness from a first- versus a third-person perspective is very different to seeing the same planet in the morning or the evening. From a third-person (external observer's) perspective one has *no direct access* to a subject's conscious experiences. Neurophysiological investigations are limited, in principle, to investigating the neural causes and correlates of those experiences. Consequently, one has no third-person evidence about the *experiences themselves* that one can compare or contrast with the subject's first-person evidence, and therefore no way of challenging the veracity of first-person evidence by these means.

### **Common physicalist arguments and their fallacies**

Physicalists nevertheless commonly argue that the discovery of (a) the neural causes of conscious experiences and/or (b) their neural correlates would *establish* the experiences themselves to be nothing more than brain states. Let us call these the “causation argument” and the “correlation argument”. Unfortunately, these arguments are based on a fairly obvious fallacy: For consciousness to be nothing more than a brain state, it must be *ontologically identical* to a brain state. But *correlation* and *causation* do not establish *ontological identity*.

Ontological identity is *symmetrical*: if A is identical to B, then B is identical to A. Ontological identity also obeys *Leibniz's Law*: if A is identical to B, all the properties of A are also properties of B and vice-versa (for example, all the properties of the “morning star” are also properties of the “evening star”). Correlation is also *symmetrical*: if A correlates with B, then B correlates with A. But correlation does *not obey Leibniz's Law*: if A correlates with B, it does not follow that all the properties of A and B are the same. For example, height in humans correlates with weight, but height and weight do not have the same set of properties. Causation, by contrast, is *asymmetrical*: if A causes B, it does not follow that B causes A. If a rock thrown in a pond causes ripples in the water, it does not follow that ripples in the water cause the rock to be thrown in the pond. And causation does *not obey Leibniz's Law* (flying rocks and pond ripples have very different properties).

Once the obvious differences between causation, correlation and ontological identity are laid bare the weaknesses of the “causation argument” and the “correlation argument” should be clear. Under appropriate conditions, certain brain states may be shown to cause or correlate with conscious experiences, but it does not follow from this that conscious experiences are nothing more than brain states, or, for that matter, functions of the brain. To demonstrate that, one would have to establish an ontological identity in which all the properties of a given conscious experience and a corresponding brain state were identical. Unfortunately, few if any properties of experiences (described from a first-person perspective) and brain states (described from a third-person perspective) appear to be identical. Although this point is a very simple one, it poses a fundamental problem for physicalism.

### **False analogies from science**

To overcome this problem, physicalists have often turned to analogies from other areas in science, where a reductive, causal account of a phenomenon led to an understanding of its ontology that is very different to its phenomenology. Francis Crick (1994), for example, made the point that in science, reductionism is both common and successful. Genes for example turned out to be nothing but DNA molecules. So, in science, this is the best way to proceed. While he recognises that experienced (first-person) “qualia” pose a problem for reductionism, he suggests that in the fullness of time it may be possible to describe the *neural correlates* of such qualia. And, if we can understand the nature of the correlates we may come to understand the corresponding forms of consciousness. By these means, he claims, science will show that “You're nothing but a pack of neurones!” (Crick 1994, p. 3).

However, it should be apparent from the above that finding the neural correlates of consciousness won't be enough to reduce consciousness to neurones. The reduction of consciousness to neurones is also quite unlike the reduction of genes to DNA. In the

development of genetics, “genes” were initially hypothetical entities inferred to exist to account for observed regularities in the transmission of characteristics from parents to offspring. The discovery that genes are DNA molecules shows how a theoretical entity can sometimes be discovered to be “real.” A similar discovery was made for bacteria, which were inferred causes of disease until the development of the microscope, after which they could be seen. Viruses remained hypothetical until the development of the electron microscope, after which they too could be seen. These are genuine cases of materialist reduction (of hypothetical to physical entities).

But it would be absurd to regard conscious experiences as “hypothetical entities”, waiting for their neural substrates to be discovered to make them real. Conscious experiences are first-person *phenomena*. To those who have them, they provide the very fabric of subjective reality. One does not have to wait for the advance of neuroscience to know that one has been stung by a bee! If conscious experiences *were* merely hypothetical, the mind-body problems, and in particular the problems posed by the phenomenal properties of “qualia” would not even exist.

U. T. Place (1956) focused on causation rather than correlation. As he notes, we now understand lightning to be nothing more than the motion of electrical charges through the atmosphere. But mere correlations of lightning with electrical discharges do not suffice to justify this reduction. Rather, he argued, the reduction is justified once we know that the motion of electrical charges through the atmosphere *causes* what we experience as lightning. Similarly, a conscious experience may be said to be a given state of the brain once we know that brain state to have *caused* the conscious experience.

The fallacy of the “causation argument” has already been dealt with above. But the lightning analogy is seductive because it is partly true. That is, *for the purposes of physics* it is true that lightning can be described as nothing more than the motion of electrical charges. However there are three things that need to be accounted for in this situation, not just one—an event in the world, a perceiver, and a resulting experience. Physics is interested in the nature of the event in the world—and psychology is interested in how this physical event interacts with a visual system to produce *experienced lightning* in the form of a perceived flash of light situated in a phenomenal world. This experienced lightning may be said to *represent* the same event in the world that physics describes as a motion of electrical charges. But the *phenomenology of the experience itself* cannot be said to be nothing more than the motion of electrical charges! Prior to the emergence of life forms with visual systems on this planet, there presumably was no such phenomenology, although the electrical charges which now give rise to this experience did exist. In sum, the fact that motions of electrical charges cause the experience of lightning does not warrant the conclusion that the *phenomenology* of the experience is nothing more than the motion of electrical charges. Nor would finding the neurophysiological causes of conscious experiences warrant the reduction of those experiences to states of the brain.

There have, of course, been many other arguments for and against physicalism and its related functionalist variants (Chalmers 1996, Gillett and Lower 2001, Koons and Bealer 2010, Ludlow, Nagasawa and Stoljar 2004, Robinson 1996, Stoljar 2010, Velmans, 2009, chs. 3, 4 & 5), but for the purpose of this brief introduction we do not need to go into these in any detail. Although no one doubts that there is an *intimate relationship* between first-person viewable human experiences and their third-person viewable physical causes and correlates, it is by no

means self-evident that experiences can be reduced to their causes and correlates, thereby showing them to be physical. Nor, given its restriction to third-person investigation, is it easy to see how this situation can be changed by the advance of neuroscience. While the physical sciences are good at explaining system structure, function and dynamics, there appears to be no third-person route by which they can fully explain the nature of conscious experiences or what it is like to have them. If these arguments are sound, the explanatory gap between conscious experiences and associated brain states will have to be crossed in a different way.

In this *JCS Special Issue* we present a number of unifying (non-dualist), explanatory alternatives—hence our title, “Monist alternatives to physicalism.” Rather than *reducing* mind and consciousness to the body and brain or vice-versa (options 1 and 2) the papers in this issue explore option 3—the possibility that mind, consciousness and physical matter might be aspects or arrangements of something more fundamental that is in itself neither “mental” nor “physical” as normally understood. One can adopt this unifying strategy at microcosmic, intermediate and macrocosmic scales, for example by reconceptualising (a) the basic building blocks of which mind, consciousness and physical matter are made, (b) the relationships among mind, consciousness and the material world as these present themselves in science and everyday experience, and (c) the nature of a universe able to rise to such mental, experiential and material manifestations. In any unified understanding, these explanatory levels must interconnect. Roughly speaking, however, the papers in this issue are arranged in sequence, according to whether their primary focus is microcosmic, intermediate, or global.

### **The papers**

The authors of the first two papers explore panpsychism as a unifying strategy at microcosmic level. Panpsychism is the view that some form of mentality, most plausibly consciousness, is fundamental and ubiquitous. In paper 2 William Seager defends a version of panpsychism that he calls ‘emergentist panpsychism’. According to Seager, emergentist panpsychism respects physics as a branch of science that tries to discover the fundamental building blocks of the world. However, it denies that what physics reveals exhausts their fundamental nature. Emergentist panpsychism claims that each element of fundamental physical reality possesses, in addition to its basic physical properties, a primitive and simple form of consciousness. Seager formulates emergent panpsychism in terms of epistemological emergence. That is, according to Seager, consciousness is epistemologically emergent but not metaphysically emergent. Thus, given the way the world is at the fundamental level, it is metaphysically and nomologically impossible for the emergent (i.e., consciousness) to fail to appear. He then addresses several objections to panpsychism, including what is widely known as the ‘combination problem’. This objection says that panpsychism is untenable because it fails to explain how high level or complex states of consciousness are (epistemologically) dependent on the experiential aspects of the fundamental constituents of the relevant high level subject. Seager suggests a solution to this problem which appeals to a new kind of combination that goes beyond the ordinary sort of inter-relatedness. He calls this “combinatorial infusion” of an analogous kind to that found in quantum mechanical entanglement.

In paper 3, Anderson Weekes' analysis of Alfred North Whitehead's panpsychism introduces a shift in how to conceptualise the mind/matter relationship that remains genuinely fresh

and surprising some 80 years or so after Whitehead produced the bulk of his philosophical writings in the 1920's and 1930's. Whitehead, a mathematician as well as a philosopher, was initially concerned with the fundamental nature of the material world. For example, unlike his contemporaries, Whitehead did not take the persistence of material stuff over time for granted. If persistence can never be assumed, then its appearance must be explained as a kind of continual re-enactment, which implies some element of spontaneity (otherwise we will find that persistence is still being tacitly presupposed). It is this element of spontaneity in bringing about the projection of the past into the present that Whitehead calls Creativity, which for him has to have the status of a first principle, comparable to the indestructibility of matter in a classical materialist framework. Weekes gives a detailed and in various ways novel account of how this Whiteheadian analysis of physical duration "naturalises" mental properties, making them a necessary requirement of the physical world's persistence. He then shows how this analysis can be extended to give a non-reductive, natural account of qualia that avoids the problems sometimes thought to be associated with panpsychism, for example of how compound individuals such as human beings can have unified, complex experiences (alternative solutions to the 'combination problem' are also addressed by Seager in paper 2 and Alter and Nagasawa in paper 4).

In Paper 4, Torin Alter and Yujin Nagasawa consider Russellian monism, which can also be seen as a strategy to unify matter and consciousness at a microcosmic level. Russell himself adopted neutral monism, but in contemporary philosophical discussions "Russellian monism" is more broadly defined. Although this is an alternative to physicalism as normally understood, it maintains that the phenomenal and the physical are deeply intertwined; more so, at least, than traditional interactionist dualism allows. For example, one version of Russellian monism says that phenomenal properties are the categorical bases of fundamental physical properties, such as mass and charge, which are dispositional. The contemporary debate on Russellian monism tends to be complicated because there have been many distinct formulations of the view. For example, while the above-mentioned version is formulated in terms of the contrast between dispositional properties and categorical properties, other versions are formulated in terms of other contrasts, such as of extrinsic properties and intrinsic properties, relational properties and non-relational properties, and structural-and-dynamic properties and non-structural-and-non-dynamic properties. Alter and Nagasawa try to tease these differences apart and argue that, depending on how we understand the experiential aspect of reality, Russellian monism can be formulated as distinct metaphysical views, such as idealism, physicalism, neutral monism, panpsychism and panprotopsyism. They consider two powerful arguments against Russellian monism. The first is the argument from weirdness, which rejects Russellian monism as counterintuitive. The second is the combination problem mentioned above. They argue that neither of these succeeds in refuting Russellian monism and conclude that Russellian monism is an attractive view that deserves serious consideration.

While papers 2, 3 and 4 largely consider the mind-matter relationship in microcosm from a variety of philosophical perspectives, paper 5 by Harald Atmanspacher approaches this relationship from the joint perspectives of physics and psychology drawing in particular on the recently published discussions of this relationship by Wolfgang Pauli (one of the founders of quantum mechanics) with the psychologist Carl Gustav Jung. Although these discussions were informed by quantum mechanics, they also viewed the mind-matter

relationship from intermediate and global levels (in terms of how these relationships manifest in everyday experience and in terms of the underlying unified reality (the *Unus Mundus*) from which these arguably emerge. As Atmanspacher notes, the triad of mind, matter, and underlying reality that they developed expresses a contemporary form of Spinozan dual-aspect monism (DAM) that combines an ontological monism with an epistemological dualism. Atmanspacher outlines some of the key features that distinguish DAM from neutral monism, for example in the way DAM postulates an ontic ground that can be known via its complementary mental and material aspects but which is itself neither mental nor material as normally understood. Given this common source one would expect common mind-matter organising principles, and Atmanspacher summarises Pauli and Jung's understanding of these in terms of (1) the relation between local realism and holism in (quantum) physics, (2) the relation between consciousness and the unconscious in Jung's psychology, (3) the common, psychophysically neutral ground of both the mental, conscious realm and the physical, local realm, and (4) the relation between these realms as a consequence of or mediated by their common ground. Atmanspacher also develops an elegant mathematical principle underlying the emergence of distinguishable properties from their undifferentiated ground in terms of "symmetry breaking", and goes on to suggest how such emergents can be meaningful.

Paper 6 by Ramakrishna Rao presents ways in which the body-mind-consciousness relationship is commonly understood in the Indian subcontinent. As in the West, Indian philosophical systems explore a range of options, including dualism, materialism and idealism. However, the Indian tradition cuts up and categorises the relationships among body, mind and consciousness in a different way. Unlike the classical Western mind-body distinction, "mind" in Indian thought is typically thought of as a refined form of material system—not unlike the way mental processes are thought of in terms of information processing in modern psychological research. Consequently, in Indian dualism, e.g. of the kind adopted in Samkya Yoga philosophy, the material world is distinguished not from mind but from consciousness, while mind is thought of as that aspect of the material world that mediates between the material body and consciousness. The classical dualist versus monist opposition in India also differs in a major way from that in the West. Whereas in the latter the current default monist view is likely to be a form of materialism, in Advaita Vedanta, the dominant monism of India, the one reality is "pure consciousness" and material forms are thought to be conrescences of that consciousness. Indian philosophy is also closely intertwined with Indian psychology in the way that both provide an analysis of the human condition along with prescriptions for transforming it, thereby realizing its potential. In this paper, Rao presents these dualist and monist traditions and suggests how Indian psychology focuses on their extensive commonalities, leaving ontological differences for philosophical discussion. He also argues that Indian psychology supports a unified mind-body-consciousness model of the person that goes beyond ontological dualism and monism, and is consistent with a process view of reality.

Adopting a global psychological/philosophical approach in paper 7, Max Velmans describes how reflexive monism provides a multidimensional map of the complex relationships among consciousness, mind, brain and the external world that both follows the contours of everyday experience and the findings of science. He then suggests how these relationships can be thought of as forms of internal differentiation within a unified, self-knowing



universe, and how this global map can be used to evaluate the utility and resolve some of the oppositions of the many other “isms” that currently populate consciousness studies. While physicalism viewed as a *global system* can be shown to be incoherent, with some absurd consequences, physicalism, functionalism, dualism, neutral monism, and dual-aspect monism can all be seen to provide useful ways of understanding different aspects of the relationships among consciousness, mind, brain and the external world when these are viewed in either a first- or a third-person way from within this web of relationships by sentient creatures such as ourselves. For example, physicalism and functionalism provide a useful understanding of consciousness, mind, brain and the external world when these are viewed from a third-person perspective, while neutral monism provides a useful way of understanding first- versus third-person views of external phenomena. On the other hand, dual-aspect monism provides a useful way of understanding first- versus third-person views of the mind, including Eastern versus Western views of mind. And mind itself can be thought of as a psychophysical form of information processing. Dual-aspect monism also provides a way of thinking about the “unconscious ground of being” that gives rise to, supports and embeds all these observable phenomena. Velmans argues that to understand consciousness, mind, and the material world one needs to understand how these phenomena and relationships all combine to form an integrated whole.

Whatever the fundamental nature of Nature might be, it must have the power to give rise to its observable manifestations. Consequently, all the papers in this issue are concerned to give a “natural” account of the relationships among consciousness, mind, and the material world that is entirely consistent with the findings of science, and they all accept that for a unified understanding, mind, consciousness and the material world must have a common base. We hope that these monist alternatives to physicalism will contribute to a deeper understanding of that base, and will stimulate novel thinking about its nature.

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