

The Emergence of Subtle Organicism

A Reply to Comments from M. Bussey, T. Dolan, W. Halal and T. Lombardo

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Introduction

It will be helpful to begin my reply with a personal disclosure. I am by training a biologist and computer scientist. My career of the past 40 years as an experimental scientist has given me an appreciation of the scientific method. I embrace its discipline, its commitment to honest investigation and to the primacy of experience over theory. Science offers society a robust defence (although not its only defence) against dogma and superstition.

During the same 40 years I have also practised *astanga yoga*, with sufficient dedication that it influenced my life in three ways. First, the regular practice of meditation gave me access to states of consciousness that, while they may have physical correlates, do not appear to have physical origins. Second, I read a sophisticated philosophy that acknowledges physical reality but also speaks of mental worlds. Third, I was introduced to a culture in which the ability to 'read minds' and 'know-at-a-distance' is not considered impossible.

I must admit to not finding a comfortable synthesis of these two parts of my life. I managed by keeping them separate. 'Consciousness' may no longer be a dirty word with colleagues but there remains a gulf between the materialism/physicalism¹ of Western science and the spirituality which underpins Eastern philosophy. Materialism, I believe, survives not just because Western science is obviously powerful in its own domain, but because it ignores other worlds which it has no capacity to comprehend. Even worse, it denies that such worlds exist.

I was asked by Dr. Sohail Inayatullah to write an essay that would motivate a symposium on the future directions of Western science. Perhaps I pushed my speculations further than I ought but the resulting essay has elicited a range of responses from the supportive ('however you should have gone further') to the highly critical ('you have it completely wrong'). I structured the essay around Kuhn's notion of competing paradigms and scientific revolutions. Dolan appears uncomfortable with this approach because it is too concerned with "drawing distinctions". Nevertheless I believe Kuhn offers useful insights. He tells us why introducing mind and consciousness into our account of the natural world involves more than just weighing the empirical evidence. In particular his notion of *incommensurability* warns us that changing our conceptual map of reality changes the meanings

of words so that proponents of different paradigms end up talking past one another. That certainly seems to characterize discussions of mind and consciousness. Another purpose of my essay was to introduce Sarkar's approach to paradigm change in Western science. His view is interesting because he comes from an Eastern spiritual tradition but he also embraces Western science.

According to Kuhn, a dominant paradigm gives way only after it has accumulated so many anomalies that a competing paradigm appears to offer a 'better explanation' of experience. I began my essay with an account of various materialist anomalies that have been discussed over the past 100 years or so. It is self-evident that theories of matter and the physical world are abstractions. The relevant issue is the *consistency* of those abstractions with experience and the *constraints* they place on how we experience and interpret the world. In Kuhn's view consistency does not turn on logic alone and not all anomalies are of equal significance. Lombardo's defence of the anomalies I described was quite legitimate from the materialist perspective. It is true that a representation of reality does not have to agree with our common-sense notions of it (admitted in my essay). It is also true that a purely physicalist explanation of the origin of life may one day emerge. But if an accepted paradigm is facing difficulties, why should we not pursue other ideas that escape its constraints?

Lombardo considers my comparing materialism to a faith to be "one of the most invalid ... statements" in my essay. It is true, as Lombardo says, that physicalist explanations of the natural world have had remarkable successes, thus lending weight to the adequacy of physicalism as a foundation for Western science. But defending physicalism by pointing to its successes is rather like defending capitalism by pointing to its billionaires, ignoring debt and poverty. Is not such selective attention an example of the blindness of faith? As Kuhn points out, a successful paradigm opens some doors but closes others. In the case of physicalism, success has come at considerable cost – the emasculation of the mental and spiritual worlds. Furthermore I would argue that the success of Western science is not due to materialism but to empiricism. Disentangling materialism from empiricism in order to expand the kinds of experience that inform the latter was one of the important themes of my essay.

Enactivism

A colleague has suggested that *enactivism* (Varela, Thompson & Roche, 1991; Di Paolo, Rohde, & De Jaegher, 2010) satisfies the requirement for a paradigm to replace physicalism. Enactivism can be approached as a synthesis of the organicist school of biology, the connectionist/dynamical systems school of cognitive science, phenomenology and Buddhism. Enactivism argues that the mind-body dichotomy is false because the two are co-determined and co-created – in other words, mind is inextricably *embodied*. In fact enactivism treads the "middle-path" with all the traditional dualisms (mind-body, subject-object, self-other, idealism-materialism) by arguing that each pair is co-dependent and neither pole offers firm ground on which to found scientific certainty. Instead, drawing on the Buddhist concept of *Sunya* (the Void), Varela et al. (1991) argue that the only defensible option is to accept "groundlessness".

Enactivism is well-placed to become the natural successor to physicalism and is a further demonstration that biologists are doing the hard work to construct a new paradigm of the sciences. Important features are that it integrates a range of Western scientific disciplines with a contemplative tradition from the East, that it accepts conscious experience *a priori* and that it situates purpose and values non-reductively.

Despite its achievements, I do not believe enactivism takes us far enough. Di Paulo et al. (2010) describe enactivism as *non-reductive naturalism*. Naturalism is the belief that only physical laws and forces (as opposed to supernatural ones) operate in the world and that nothing exists beyond the natural world. It is interesting that Chalmers (1995, cited by Lombardo) describes his philosophy as *naturalistic dualism*. Both Chalmers and enactivism recognize the deficiencies of physicalism but neither (despite their different solutions) steps too far from it. Perhaps it is inevitable that paradigm change can only proceed in small steps, yet if a new paradigm of the natural sciences is to embrace the richness of human life and the cosmos, it will have to make a clean break with materialism in all of the following respects. It will need to accept: 1. a substantive theory of mind; 2. non-dualism;² 3. a theory of spiritual purpose; and finally, 4. modes of knowing besides the sensory-motor and intellectual.

A Substantive Theory of Mind

One of the ideas I wished to convey in my essay was that, if we are to develop a technology of mind (eventually achieving some kind of a capability comparable to material technology) then we require a substantive theory of mind. Mind certainly exists in close association with matter, but mind is also its own thing. Sarkar's theory of microvita is of interest if only because it emanates from a culture in which mental power is taken seriously. There are four parts to the theory relevant to my essay:

- 1) In the context of particle physics, there exists a layer of parts more fundamental than electrons and quarks.
- 2) Matter and mind are arrayed on a spectrum of particle/waves from crude to subtle.
- 3) Any account of the subatomic realm must include both mind and matter.
- 4) The scientific method must eventually cultivate a mode of knowing which Sarkar calls a "power of conceiving" and which I understand to be a highly sharpened intuition.

The above proposals need not be reductionist – on the contrary they might be considered non-reductive. They simply add another ingredient to our account of the world, just as Chalmers describes his approach as adding "an extra ingredient" (Chalmers, 1995, part 5). Of course we should not add ingredients without justification but microvita theory is minimalist in the sense that its abstraction of mind is similar to its abstraction of matter – the fundamental elements of both are described using the metaphors of wave and particle. Indeed the theory is not inconsistent with the enactivist agenda. The participation of mind in a living organism emerges out of the metabolism of its precarious autopoietic physical structure.³ But the ingredients of an emergent mind are already present in the parts. In fact the substance of mind is everywhere, just as the substance of space-time is everywhere.

The unusual feature of Sarkar's proposal is that it objectifies mind. Just as there are first and third person descriptions of the physical world, there are also first and third person descriptions of the mental world. Third person descriptions (derived from measurements performed on the substance of mind) will yield power but they will also have all the problems of third person descriptions if they alone prevail. Sarkar is explicit about this. The world of mind is a vast domain which humans must inevitably explore. But entering this domain does not, of itself, bring wisdom or spiritual insight. However just as the exploration of the physical universe has brought humanity to the frontiers of mind, so entering the world of mind will eventually take humanity beyond mind.

Lombardo rejects the theory of microvita on the grounds that it is "totally unsubstantiated scientifically". This is only partly true and partly misses the point. Concerning the first postulate, there is growing evidence from experiments with confined electrons that they are not fundamental (Webb, 2009, p.31). Such results invite speculation that the electron may be a stable configuration of more fundamental entities. Theoretical physicists construct many theories that have no immediate prospect of validation or falsification, yet the activity is considered useful because it provides a rich source of possibilities to be sifted by future observations.

Concerning the second postulate of microvita theory, it is noteworthy that in pursuit of an understanding of matter we have been led to increasingly subtle concepts such as the substance of space-time, dark energy, "it from bit", non-locality and a computational universe. The substance of mind is but one step further. It is significant that Chalmers introduces information theory into his account of consciousness and both Bussey and myself find the concept helpful in approaching microvita. Information theory may offer a stepping stone to a substantive theory of mind.

Non-dualism

I accept Lombardo's criticism that I was not sufficiently careful in my essay to distinguish the varied meanings of the word 'consciousness'. Wilber's All-Quadrants-All-Levels (AQAL) schema (1997) is probably the most comprehensive in which to situate discussions of consciousness. Within AQAL we discern two kinds of subject-object relationship. The first and most obvious is that between interior and *exterior*. Interior refers to conscious experience and self. Each (AQAL) level has its own interior-exterior relationship. As we ascend levels on the exterior side, we observe a hierarchy of parts becoming wholes – a *holoarchy*. As we ascend levels on the interior side, the quality of conscious experience becomes more subtle and the domain of self expands. The effect is that in ascending the holoarchy, each level acts as subject to its lower object levels – in short, there is a hierarchical sequence of subject-object relationships. To this schema we must add the dynamics of evolution and individual development. These ideas are described by Wilber in detail in *Eye to Eye* (1990, chapter 4). Sarkar's concept of Supreme Synthetic Subjective Appropriation (SSSA) introduced in my essay covers some of the same territory.

If we ascend the levels in Wilber's AQAL schema, we eventually arrive at a conscious universe. Likewise, Sarkar's SSSA proposition leads to the same conclusion.

Biologists such as Lynn Margulis accept that planet earth and even galaxies are autopoietic systems and alive in that sense. Are they also conscious? Chalmers, despite his adherence to naturalism, hints at another way to approach this question. He postulates that behind subjective experience and objective physicality there is something more fundamental – information. "[Conscious] Experience arises by virtue of its status as one aspect of information, when the other aspect is found embodied in physical processing" (Chalmers, 1995). He then takes a speculative step: if all information processing systems have conscious experience then perhaps conscious experience is widespread through the universe because information is everywhere. In Tantra and Vedanta, the consciousness of the universe is Cosmic Consciousness. This idea is important because it takes us from the dualism of subject-object relationships to non-dualism.

Varela et al. (1991) reject dualism and link the groundlessness of scientific knowledge to the *Sunya* (Void) of Buddhism. Sarkar agrees that dualism is not the ultimate reality but he accepts it as a practical description of a prevalent state of consciousness. Even Varela et al. (1991) admit that dualism is persistent and not transcended without some form of mental endeavour, for example, by meditation. Further, we cannot imagine an empirical science without the dualism of observer and observed, even if they are co-determined. In Sarkar's philosophy, we escape dualism by expansion of consciousness (that is, by ascending Wilber's levels of mind) which leads ultimately to the union (yoga) of unit consciousness with Cosmic Consciousness. "Human beings can become one with [Cosmic Consciousness] with the help of their unit consciousness. Only when they attain this stage can they realize that there is no difference between the microcosm and the Macrocosm; that is, knowledge, knower and known lose their individual existences. The knower and knowable become practically one, and the connecting link between the two, that is, knowledge, stands nullified" (Sarkar, 1971).

There is a growing acceptance amongst Western scholars that non-dualism (variously called *advaita*, One without a second, Spirit – the name varies according to tradition and context) is the ultimate state of consciousness. There is also much interest in the relationship between *advaita* and scientific endeavour. Physicist John Wheeler (2004) wrote on *advaita* and there are international conferences on the question <<http://www.scienceandnonduality.com/>>. Perhaps the closest English word to *advaita* is Spirit. Wilber uses it as does Hegel (in translation). I acknowledge Halal's comment that spirit ought to be central to our understanding of consciousness and accordingly I have made two small changes to Figure 2. Depending on context, Sarkar uses several terms for *advaita*, including *unqualified consciousness*. However spirit avoids confusion with other meanings of consciousness and it makes the source of human spirituality explicit.

A Theory of Purpose

Richard Dawkins would have us believe that human life and therefore indirectly all of human culture is about the survival of genes. At whatever level of description (molecular to society), purpose in the physicalist paradigm comes down to technical accounts of surviving a regime of natural selection. It may be true, as Lombardo says,

that physicalism offers accounts of purpose and ethics, but how well do those accounts engage with the richness of human experience? Di Paulo attempts to capture that richness using enactivist terms such as "intrinsic teleology", "natural purposes", "sense making" and "constructed values". Yet, in his hands, all of these concepts ultimately appear to fall back on the "viability" of precarious autopoietic systems and his efforts to distinguish 'viability' from 'survival' are unconvincing.

Drawing on Buddhism, Varela et al. (1991) consider dualism (the separation of self from other) to be the source of all suffering and thus the letting go of dualism is necessary to avoid suffering. The self has boundaries and therefore it has *self-interest*. Self-interest, in turn, leads to 'the tragedy of the commons', a parable which Varela et al. (1991) use to characterize the state of planet Earth and obstacles to planetary thinking. In Buddhist philosophy, dissolving the boundary between self and other leads to the emergence of *compassion* and in this movement from dualism to non-dualism Varela et al. (1991, chapter 11) find the basis for a system of both personal and social values.

Non-dualism must be an integral part of any new paradigm of the natural sciences because it is the necessary starting point for an adequate account of purpose and values. Sarkar's approach is to describe the movement from dualism to non-dualism in terms of expansion of consciousness, by which process *self* progressively embraces *other*. In that process, one enjoys a lightness of being, comes closer to Spirit and ultimately to advaeta (non-dualism). From advaeta there is nowhere else to go because it is all-inclusive, without boundary. There are two sides to expansion of consciousness, self-realization and effort to establish universal family. Both are required because, as Wilber's AQAL schema makes explicit, expansion of consciousness has both individual and collective dimensions.

Gilbert Ryle (1949) dismissed the existence of a non-physical mind as a *category error* resulting from the misuse of language. Similarly Lombardo argues that giving ethics (values that arise from an acceptance of purpose) ontological status is a "conceptual confusion". So it is when ones starting premise is objectivist materialism, for, in the logic of materialism, mind can only be an attribute and, in the logic of objectivism, ethics can only be normative. Let go objectivist materialism and other approaches become possible.

A complete account of ethics requires accepting that they are *both* constructed by humanity *and* prior to humanity, or that they are a synthesis of both relative and absolute factors. On the relative side, ethics are constructed to help us survive in a contrary universe. In the language of enactivism, ethics assist the viability of precarious autonomous systems. On the absolute side, ethics are informed by our 'sense' of spiritual potential and that sense I attribute to what Wilber calls the Archetypal mind (the *Vijñānamya kosa* in Vedanta). It is the level of mind where archetypes such as virtue, beauty, truth, justice and love first differentiate from Spirit and give multiple kinds of meaning to our lives (hence the inclusion of ethics in Figure 2). Importantly, as Wilber (1990) notes, the Archetypal mind is "above and prior" to the physical and mental worlds which we ordinarily inhabit. Again, this is not to deny the importance of social normative factors in constructing particular ethical and aesthetic systems but these are superimposed on the prior dynamics of the Archetypal mind. The impulse to

bridge the separation between small self and Spirit has as important consequences in our internal lives as gravity has in the external world.

Other Modes of Knowing

Enactivism places much stress on the co-determination of subject-object relationships and, in the case of science, on the co-determination of observer and observed. A consequence of co-determination is that there can be no fixed ground in science. Objectivity is always in "parenthesis" or, in Bussey's words, "the subject's story is never complete". As Sarkar and others have emphasized, empirical science can produce only *relative knowledge*. Nevertheless Sarkar admits that relative knowledge is useful in selecting a path through life.

A new paradigm of the sciences must accept that humans have multiple modes of knowing. In fact the logic of Wilber's AQAL schema suggests that humans have a mode of knowing for each level. Wilber simplifies his schema to three modes, the eye of contemplation, the eye of reason and the eye of the flesh. Western science is founded on the eyes of reason and flesh, Eastern science on the eye of contemplation. The eye of contemplation reveals that which cannot be seen with Western science, in particular purpose and meaning. Spirit may be compared to a light, the effect of which is to suffuse the human mind with elevating ideas such as the oneness of the human family, sacrifice for justice, the beauty of truth and even the curiosity to find the source of that light. Any attempt to find the source of these ideas with the eye of flesh and reason will not satisfy. Only the eye of contemplation can recognise the play of Spirit in the world.

The theory of Microvita adds a fourth eye to Wilber's schema, the eye of intuition. In the context of Sarkar's cosmology, the result of human evolution is to sharpen older modes of knowing and to unfold new modes of knowing, like the unfolding of a flower. Intuition is of course an existing mode of knowing but imperfectly developed. It is not easy to appreciate the new scientific possibilities that might arise from a sharpening of intuition but this is what Sarkar is forecasting in his theory. There appear to me clear parallels between the current condition of the divided human mind and Julian Jaynes' notion of a bicameral-unicameral transition in the ancient past. It is also clear that any future development of the Western scientific method will have to be seen from the perspective of all four quadrants and all levels of the AQAL schema. Note that Bussey also understands the theory of microvita to imply a new kind of empiricism, "transcendental empiricism", one which transcends materialism but which preserves a "subtle rigor".

Conclusion

Australian biologist, Charles Birch, refers to an occasion (around 1940) when Alfred Whitehead introduced Bertrand Russell to a lecture audience at Harvard University. Whitehead and Russell had worked together for many years developing symbolic logic but the two eventually parted philosophical company. Russell remained an advocate of materialism while Whitehead developed process philosophy

in which matter is treated as conscious. In his introduction Whitehead quipped: "Bertie says that I am muddle-headed. But I think that he is simple-minded" (Birch, 1990, p.11). Almost 100 years later, this comment still succinctly contrasts the attitudes of those grappling with the physicalist paradigm and its successor. I have no doubt that the issues discussed in this symposium will remain at the core of philosophical, scientific and social debate for decades to come.

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Notes

1. In this essay the term *materialism* is used interchangeably with the now more popular term, *physicalism*.
2. Non-dualism refers to the concept of *Advaita* from Eastern philosophy and *not* to the material monism of Western philosophy.
3. This is the language of enactivism. A precarious system is one that lies far from stable equilibrium. Balancing a broom on one's fingertip or walking a tight-rope are appropriate analogies. An autopoietic system is one which self-creates. It may be an open system but is always operationally closed.

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