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Panpsychism as Paradigm

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I come to panpsychism not from an attempt to explain *consciousness* but from an attempt to explain the *world* – to explain what kind of world this world of ours is, and consequently how we ought to fit into it. My entry point has been, in other words, not through the philosophy of consciousness but through the *philosophy of nature*, philosophy of nature construed as the attempt to understand the metaphysical make-up of the world at large. The philosophy of nature has become urgently relevant in our time because the environmental crisis is pointing to a misalliance between humanity and its world. Panpsychism has thus for me been a project of metaphysical rehabilitation conceived within the discourse of environmental philosophy.

The argument that I shall put forward in this chapter however focuses strictly on the metaphysical rather than the environmental. The gist of the argument is that a holistic or cosmological version of panpsychism, according to which the universe as a whole is the ultimate locus of mind, or of mind-like properties, can function as a rival to materialism, materialism being understood as the view which denies that mind, or any mind-like property, inheres in an essential way in matter or in other fundamental elements of physical reality. Moreover, I shall suggest that, in relation to materialism, cosmological panpsychism functions not merely as a rival *theory* but as a rival *paradigm*. I make this suggestion because materialism generates a number of intractable anomalies, anomalies that have become so entrenched in the philosophical tradition of the West as to seem inevitable. We perhaps forget that they *are* anomalies, and treat them instead as the very substance of metaphysics. It might be in consequence of this conflation that we have concluded that metaphysical questions are in principle undecidable, and consequently not worth pursuing. Tackling these intractable questions from the viewpoint of an alternative paradigm might then have implications for metaphysics itself as a discipline.

I would like to emphasize that it is panpsychism in a holistic or cosmological guise, as exemplified in, for instance, Spinoza or Schelling, rather than in the more “distributed” guise favoured by process theorists, that can serve as an anomaly-dissolving alternative to materialism. Perhaps there are parallel arguments for the distributed panpsychism of process theory, but this is not a question I shall be taking up here. Nor shall I, regrettably, be linking my argument, to any great extent, with current philosophy of consciousness. There

is no excuse for this apart from my own unfortunate fallibility, as I have not yet had a chance to make the bridge between environmental philosophy and philosophy of consciousness, though this bridge is under construction in other work of mine. If the lack of linkage limits the interest of the present article for readers, I apologize.

I shall address four specific metaphysical anomalies. In each case I shall argue that these are anomalies for materialism but are far less problematic for cosmological panpsychism. The arguments as I present them here will be very abbreviated but can be found in more developed form elsewhere in my work.¹

1. Problem of realism, or of the appearance/reality distinction
2. Problem of why the universe hangs together, or, more narrowly, the problem of causation
3. Problem of why there is something rather than nothing
4. Problem of the origin of the universe, or of a beginning to time

Of course, the hard problem of consciousness, which I have not listed, is also a pre-eminent anomaly for the materialist paradigm, an anomaly which panpsychism can make some claim to solve. But if it can be shown that materialism harbours other anomalies, and that cosmological panpsychism solves, or at least softens, these, this independent evidence for panpsychism strengthens it as a contender in the case of the hard problem. Moreover, a sense of the cosmological reach and origins of consciousness will provide a new and illuminating context for the investigation of our own human consciousness. In both these respects then exploring cosmological panpsychism as paradigm is relevant to the hard problem of consciousness.

1. Problem of Realism

I would like to start with the problem of realism, though I don't need to spend too much time on this as it was anticipated by both Schopenhauer and Bertrand Russell, and has been reviewed in contemporary discussions. (Skrbina 2009)

The problem may be set out as follows: the language of physics affords us no way of intrinsically characterizing the difference between a real physical entity and a merely apparent (perhaps illusory) one. Take the property of solidity, for instance. It is common sense to suppose that a body is real if it is solid, but solidity cannot be characterized in intrinsic terms: there is nothing we can identify in a solid body itself that renders it solid. Solidity is rather defined extrinsically in terms of impenetrability: a body is solid if it can keep other bodies out. But as an account of the real-ness of a body, of its actually occupying space as opposed to merely appearing to occupy it, this is clearly question-begging: a body is solid, in the sense of real, only if the bodies it keeps out are themselves already solid. There is no reason why an order of illusory bodies should not be such that they appear to keep one another out. Their doing so however will not render them solid, in the sense of real. All the properties assigned to matter in physics – mass, momentum, charge, and so on – turn out, like the common sense property of solidity, to be defined in this extrinsic way,

¹ See Mathews 1991 and 2003 in particular.

and as such may be question-begging as accounts of what it is for a body to be really *there* – for it to be really real as opposed to merely apparent or illusory.

The only way we could ever distinguish the real from the illusory, conceptually speaking, is to ascribe to the real some form of reflexive interiority or presence-to-itself, such as we ourselves enjoy. We have no problem conceptually distinguishing a real *person* from an illusory one, because we know that though the illusory person may look the same as the real person, there is nothing going on in her. In the real person, by contrast, there is definitely something going on. It may not necessarily be thought – the real person may, for example, be asleep; but there is in her an unceasing psychophysical movement towards an end, the end of self-existence, which, though it may not be conscious at all times, is definitely intentional, self-directional, conative. The real person is psychophysically self-activated and present to herself, through introspection, in a way that the illusory person, qua mere appearance, is not. There is, in other words, a way we can describe the real person that clearly and definitively marks her off from any illusory counterpart. To ascribe a comparable self-presence, or reflexive interiority, to matter generally seems to be the only means available to us by which we might escape from the conceptual impasse of the appearance/reality distinction. This is a means unavailable to materialists, with their denial of mindlike properties to matter. It follows that only panpsychists – who are indeed prepared to ascribe mindlike properties to matter – can solve this conceptual anomaly of the appearance/reality distinction at the heart of materialism.

There is a second, epistemological form of the problem of realism, but it would take me too far afield to detail it here.² I shall instead explain why I think the conceptual version of the argument from realism suggests not only panpsychism per se, but a global or cosmological form of panpsychism.

Argument to global panpsychism

Let us allow that the argument from realism has shown that matter is endowed with interiority – we might call this its *subjectival* dimension. However, within our accepted Western framework for thinking about matter, viz physics, the domain of physical reality is no longer conceived as merely coextensive with that of matter but includes forces and fields and even space itself. In relation to these nonmaterial aspects of physical reality, the problem of realism still arises: how are we to distinguish between real and merely illusory *light*, for instance? Can we say of light that it too has a subjectival dimension?

If the argument from realism is to succeed, an extension of subjectivity to physical reality generally, rather than its restriction merely to matter, does seem to be required. But to take this step forces us to face the question of the relation of subjectivity to the *subject*. Subjective experience is, after all, the province of a subject. However, a subject, understood as a centre of subjectivity, is necessarily an indivisible unity: there are no scattered subjects, and the boundaries between subjects are not nominal. The individuation of subjects, or centres of subjectivity,

² See Mathews 2003, chapter 2.

is objectively determined: a thought objectively belongs to you or me; it is not up to a third person, qua knower, to decide where the boundaries of our respective subjectivities will be drawn. However the individuation of objects, at the macro-level, at any rate, is not consistently objectively determined in this way. Matter is not really, in any ontological sense, parcelled up into convenient units or packages, despite the plethora of discrete artefacts in our own daily life that suggest that it is. Indeed, many of our individuations – of rocks and mountains, for instance – have basically nominal status. We accordingly have to ask whether the physical realm could be externally divided up so as to correspond with an internal differentiation into a manifold of individual subjects. Where does the subjectivity of a mountain range, for instance, lie? In the individual mountains or in the range as a whole? In the rocks that make up the mountain, or in the underlying crust from which the rocks have become detached? Where do individual mountains end and the range begin, and how many of the individual rocks are still attached to the crust, and to what extent is the range an extension of the crust? Are there many subjects here or one, and if one, is that one the earth's crust as a whole, or perhaps the entire body of the planet? Matter at the macro-level is not given in indivisible unities the way subjectivity is. And the question of how to divide reality up into subjects, or centres of subjectivity, to which materiality is subjectively present, becomes acute when the attribution of subjectivity is extended to the physical realm generally. For there is not even any intuitive presumption that the non-material dimensions of the physical realm – field or wavelike processes, for instance – can be carved up into units. There may be a wave-particle duality at the micro-level of physics, but the wave-like aspect is as much a part of the fabric of reality as the particle-like aspect is. And the wave-like aspect does not lend itself to differentiation into units. How then, again, can physical reality as a whole, inclusive of its wave and field-like aspects, be externally differentiated consistently with an interior differentiation into a manifold of subjects?

The most effective way for a panpsychist to reconcile the internal ontological unity and indivisibility that properly belongs to subjects with the generally merely nominal unity of physical entities may simply be to adopt a holistic approach to physical reality. If physical reality as a whole, under both its material and non-material or field-like aspects, is seen as constituting a genuine, indivisible unity, then it could itself perhaps be regarded as a subject, or field of subjectivity, to which the entire differentiated physical manifold is subjectively present. In this case, while matter generally could be said to be present to itself, objects individually could not be said to be so. That is to say, when we regard the universe as a whole as the prime locus of subject-hood, we face a *combination problem in reverse*: how are the entities, objects or beings we normally regard as distinct subjects to be individuated within such an all-encompassing holism? The problem is not, as it is for process philosophers, how are compound consciousnesses to be built up out of simple ones, but rather how can local, individual subjects come to differentiate themselves within the matrix of a global mind. (For extensive discussion of the combination problem, see Skrbina 2009.)

In order to address this “combination problem in reverse”, we need to sketch in the outlines of cosmological panpsychism, or at least some version of it. Since I

do happen to have a version to hand, let me provide such a sketch, and in the process explain how this theory deals with the combination problem in reverse, or, to give it a name of its own, the *individuation problem*.

Cosmological panpsychism: a version

I shall start with cosmological panpsychism under its *physical* aspect. From this point of view, physical reality as a whole, including both its material and its non-material aspects, such as space and electromagnetic or gravitational energy, forms an unbounded, indivisible, substantial (though not in the first instance material) plenum. This plenum is construed geometrodynamically, as a dynamic extended substance – space – in a continuous process of expansion and internal self-differentiation. The model is the age-old one of water (shades of Thales here)(how nice it would be if the very first philosopher got it basically right!): the universe may be compared with a vast ocean coursed continually by currents and waves, some of which interfere to become vortices which hold their structure for long enough to give the appearance of independent or enduring existents. (W. K. Clifford articulated this “space theory of matter”, as a metaphysical template, long before Einstein and later John Archibald Wheeler gave it mathematical form as geometrodynamics. (Clifford 1876, 125-6) And although geometrodynamics has not yet been accepted into physics, due to lack of experimental confirmation, it still makes eminent sense as a metaphysical template.) This geometrodynamic plenum is holistically rather than aggregatively structured, and those internal differentia which are not only stable in their configuration, but actively self-realizing, qualify as what I call *selves*. Selves are defined, in systems-theoretic terms, as systems with a very special kind of goal, namely their own self-maintenance and self-perpetuation. On the strength of their dedication to this goal, such self-realizing systems may be attributed with a drive or impulse describable as their *conatus*, where conatus is understood in Spinoza’s sense as that “endeavour, wherewith everything endeavours to persist in its own being”. (Spinoza 1951, Part III, Prop VI, Proof)

Selves then enjoy a real though relative individuality even though they exist in the context of an undivided whole. Since they proactively seek from their environment the resources they need to actualize and maintain their structure while at the same time resisting causal inroads into their integrity, they count, ontologically, as individuals, even though they are not separate substances, but disturbances within a global substance. Moreover, the interference patterns which create these relatively stable configurations in the plenum are relational: it requires a very special “geometry” in the surrounding field to create the conditions for such self-perpetuating “vortices”. The paradigmatic instances of selfhood, in the present sense, are of course organisms, constituted in the relational matrices of ecosystems. The systems-theoretic criteria of selfhood – self-regulation, homeostasis, goal-directedness and equifinality – may also turn out to apply to higher order biological systems, such as ecosystems and the biosphere. Indeed, it may be argued that the cosmos itself satisfies these criteria, since it is necessarily self-actualizing and self-regulating, and its self-structuring follows the relational dynamics of systems. (The details of this argument can be found in Mathews 1991.)

Overlaying systems theory on geometrodynamics then, we arrive at a universe which is One, substantively speaking, but which also self-differentiates, selectively, into a relative Many, the Many being those “interference patterns” which correspond to self-realizing systems, or selves. The systems criterion, set in a geometrodynamic framework, thus renders inanimate matter mere backdrop to the true individuals, the selves, in this scheme of things. Rocks and clods of clay and grains of sand are, from this point of view, not really things in their own right, but rather knotty bits of the matrix or plenum. Matter is thus properly described in mass terms: earth, rock, sand, water, sky, air, etc. The only genuine individuals that populate this world are selves.

Having briefly reviewed this cosmology under its physical aspect, let us now consider it under its *subjectival* – which is to say its explicitly panpsychist – aspect. We can see that, even described in physical terms, this cosmology, consisting of a One which self-differentiates into a Many, points towards panpsychism, inasmuch as the One is already described as a self-realizing system, and hence as imbued with the mind-like property of conativity. But it is under the duress afforded by the Argument from Realism that we are really driven to interpret this view in panpsychist terms.

Considering the present cosmology under its subjectival aspect then, what presents is an extension, a field, which, while it appears to observers (observers embedded within the field itself) as a geometrically dynamic space, is experienced from within as a field of subjectivity, a great, internally differentiated field of impulse, of intrinsic activity, of felt expansions, swellings, dwindlings, contractions, surges, urges and so forth. Impulses within this field follow certain patterns: they gather and unfold, constellate and dissipate, in objectively patterned ways, just as our own subjective impulses do. This “lawlikeness” of motion – of impulse – in the primal field may be read as correlative with physics. To read subjectival process this way, as that which is manifested externally in the lawlikeness of physics, is not to deny the characteristic freedom or spontaneity of subjectivity: the characteristic patterns of subjectival movement may be acknowledged without this implying that subjectival processes are strictly predetermined. An analogy might be helpful here. Consider the movement of a snake. Snakes move in a determinate way: they slither or slide, in wave-like fashion; they do not hop, gallop or fly. Yet this does not entail that the direction a particular snake chooses to take on a given occasion is predetermined. Order in the sense of the large-scale patterning of motion does not preclude small-scale variations of “direction” within such patterns. This degree of freedom within the framework of a larger order is presumably correlative with quantum mechanical “give” in physical systems. Quantum mechanics has revealed aspects of physical reality, such as wave-particle duality, complementarity and nonlocality, which, while compatible with the large-scale patterning of classical physics, allow, at the micro-level, for the indefiniteness, diffuseness, indeterminism, and sudden resolutions and dissolutions that are typically associated with mental or subjectival processes. In other words, the large-scale patterning of impulse in a subjectival field may manifest externally as the lawlikeness of classical physics while an element of choice or spontaneity within that patterning may be read as correlative with

quantum physics. The primal field then, from the present point of view, exhibits aspects of both the traditional physical and the traditional mental or subjectival, without being reducible to either.

If this is how the global field of subjectivity may be imagined from within, from the viewpoint of the One as Subject, the question of how finite selves embedded in this larger Subject may be imagined from within remains to be considered. How can relatively distinct subjectivities, the subjectivities belonging to the differentia we have identified externally as self-realizing systems in the geometrodynamical matrix, form within the field of a larger consciousness? How do such subjects manage not to be absorbed, experientially, into the larger field, and how does the larger Subject, of which they are a part yet from which they also differentiate themselves, experience them?

A psychoanalytic analogue might provide a model in this connection. Psychoanalytic theory is, of course, premised on the idea of the unconscious – that certain aspects of mental life in human beings, particularly those aspects associated with ego, are conscious, while other aspects are unconscious. Amongst the unconscious components of psyche are enduring constellations of psychophysical energy which never surface into ego consciousness yet which nevertheless may be active in the psychic life of a person. In certain circumstances these constellations may eclipse the ego as engine of agency and overtake the person in question, driving their behaviour. Carl Jung called such constellations of psychophysical energy *autonomous complexes*, to indicate that though they are in reality part of the psyche, such complexes are unaware of this fact and to a certain extent are self-organized to lead a “split off” life of their own. Though the analogy is not perfect, it does, I think, suggest a way in which a self-realizing system might become a relatively distinct and self-directing centre of subjectivity within the larger field of the One as Subject. And just as a person whose psyche harbours an autonomous complex is not consciously aware of the way the complex feels to itself, but is nevertheless psychically organized so as to make room for the complex, and perhaps made uncomfortable by the “gaps” that the complex leaves in her consciousness, so the One as Subject may feel the effects of finite centres of subjectivity in the field of its own larger subjectivity, even though it may not be able actually to experience the way such finite selves feel to themselves.³

These are very brief remarks, and much remains to be explained, but I hope I have said enough to show in a preliminary way how the individuation problem – which is to say, the combination problem in reverse – may be resolved in the context of the present cosmological version of panpsychism.

Having completed my sketch of this version of panpsychism, let me now return to the anomalies, those problems which remain intractable for materialism but which dissolve, or at least soften, in the context of panpsychism. I have already

³ Many thanks to Craig San Roque for helping me to understand, in psychoanalytic terms, the role of autonomous complexes in psychic life.

reviewed the Argument from Realism, and explained how panpsychism can give conceptual content to the distinction between appearance and reality in a way that materialism, anomalously, cannot. Let us now turn to the question of why the universe hangs together, where this can also be read, more narrowly, as the problem of causation, as originally formulated by David Hume.

2. Why does the universe hang together?

Materialism, insofar as it remains particulate, analyzes physical reality in terms of patterns of motion exhibited by elementary physical units, where these patterns are given by laws that are logically extrinsic to the units in question. In other words, the laws could be different; they could in principle cease to hold. To the extent that physics continues to source fields and forces to particles of various kinds, it affords no logical assurance that the universe will continue to be governed by these laws, nor hence that it will continue to hang together. The laws holding the elementary units together might simply collapse, and physical chaos ensue. In other words, such a physics cannot explain the coherence of the world; this coherence remains a fortuity. In this sense, physics remains subject to Hume's anomaly. There can, Hume pointed out, be no logically necessary connections between distinct existences. To the extent that physics posits a universe of logically distinct existences, it cannot explain why these existences are held together by the observed laws of nature.

A ready solution to this problem of causation, and to the larger conundrum of why the universe hangs together, is simply to relinquish the hypothesis of distinct existences. If the universe is *not* fundamentally particulate, if it is instead fundamentally an indivisible unity, or plenum, then the problem of coherence disappears. A plenum, such as space considered geometrodynamically, is intrinsically internally structured in accordance with a principle of perfect point to point connectivity and hence perfect continuity. In other words, motion in a plenum will necessarily propagate smoothly and isotropically, and hence in a fundamentally lawlike way, at least until interference patterns set in. A geometrodynamical universe is necessarily a lawlike one. (Mathews 1991, chapter 2)

The problems of coherence and causation then point us metaphysically in the direction of unity and holism, but this does not yet in itself necessarily entail a commitment to panpsychism. The step to panpsychism occurs when we wonder *why* the universe is an indivisible unity. Granted, if it *is* an indivisible unity, then it will be lawlike, and will hence hang together. But if it does not *have* to be an indivisible unity, if the fact of its indivisible unity is itself contingent, then we have still not explained, in any ultimate way, why it hangs together. This hanging together will remain a metaphysical fortuity. And, from a materialist perspective, there seems to be no more reason, ultimately, for unity than for fragmentation: atomistic chaos is as logically possible as lawlike unity. From a panpsychist perspective however, there is every reason to expect unity rather than fragmentation. Having inferred the unity of the universe from the evidence of its lawlikeness, the panpsychist explains this unity by reference to a subjectival aspect of reality. A subject, in the sense of a centre of subjectivity, is itself intrinsically, as we have already noted, an indivisible unity. Subjectivity is an

extension, a field for experience – for meaning, purpose and agency - but there are no hard edges or boundaries in this field; the different instances of its experience are cross-referential and inter-permeating. Meanings, for example, are differentiated only within a larger field of meanings which overlay and inform one another; purpose gives coherence and direction to all it touches, bringing different cognitive functions together into indissoluble synergies; agency, being referenced to purpose, has a similar effect. The “hanging together” that presents itself to us as the physical face of reality thus points forcefully to the conclusion that subjectivity, so clearly indivisible in its essential nature, must, at a deeper level, be integral to the nature of things. Reality hangs together under its outer aspect because that outer aspect is indicative of an inner, subjectival and accordingly indivisible, nature.

It is thus the panpsychist who offers at least the outlines of an answer to the question why the universe holds together rather than falling apart. In other words, it is the panpsychist who can shed a little light on a conundrum that is sheer anomaly for the materialist.

3. Why is there something rather than nothing?

Either there is or there isn't a reason for the existence of a world, for the existence of the “something” that can be seen as a matter of fact to exist. If there is no reason, then what exists – the world as we know it – just is as it is, absolutely arbitrarily; it could have been entirely otherwise or it could have been not at all. If on the other hand there is a reason for the existence of something, then presumably that reason involves self-causation or self-creation, since there is ultimately nothing other than what-exists that could bring what-exists into existence. But self-causation, upon analysis, turns out to have consequences: it turns out to entrain a certain nature for the thing that is self-creating. This nature is, as we shall see, consistent with panpsychism but not materialism.

Allow me, very briefly, to explain. A universe which is self-creating must also exhibit certain other attributes. Firstly, it must be imbued with causal *power*. The reason for this is that a Humean account of causation cannot work in the case of self-causation: self-causation cannot be analyzed, Hume-wise, as a contingent relation of succession and contiguity such that every time event of type A occurs it is, contingently but invariably, followed by an event of type B. Since in self-causation cause and effect are the same “event”, no such relation of succession can be posited. Causality must in this instance either be reduced to nothing at all or it must be analyzed in terms of the action of a non-empirical “power” within the cause. Powers are (notoriously to logicians) “occult” things, or aspects of things, empirically opaque, *intensional*, lurking within things rather than fully extensional, as materialist attributes are. (Routley 1980; Plumwood 1993) Let us add to intensionality the fact that the power of self-causation is *reflexive*, hinging on the ability of the thing in question to direct its powers onto itself. And to intensionality and reflexiveness let us furthermore add an element of *telos* – the fact that the power of self-creation has a specific end in view, viz the self-existence of the self-creating thing. The upshot of this thumbnail analysis of self-causation is that self-creativity looks decidedly conative, and conativity bears all the hallmarks of the *intentional*, where intentionality is understood, in

phenomenological terms, as the province of the mental, or at any rate of the mind-like.

In other words, a self-creating universe will be a conative universe. It will not be a purely materialist or mechanical universe. If conativity is understood as a category of panpsychism, then we can say that a panpsychist universe offers an answer to Leibniz's question, why is there something rather than nothing, while a materialist universe does not.

4. Was there a beginning to time?

If it is inherent in the nature of the universe – or, as we have seen, of a particular kind of universe, namely a conative one – to bring itself into existence, then this universe will presumably not come into existence at one moment rather than another. There must be a sense in which such a universe has *always* existed. Why so? The nature of things generally, *in abstracto*, can be specified outside of time, but in the case of a self-causing thing, its nature *in abstracto* is necessarily self-instantiating, so that the instantiation will exist as timelessly as the thing in abstract. (Heavy shades of the Ontological Argument here.) To say of the universe that it is of a finite age, as physicists currently do, does not then make sense for a self-creating universe. There is no more reason for a self-creating universe to have come into existence X million than Y million years ago. This is not to say that it must have endured for an infinite number of years, or instants. It is rather to say that it must be, so to speak, temporally indeterminate at the edges.

To explain what I mean by this, let us contrast such temporal indeterminacy with the current orthodoxy amongst physicists that postulates a “first three minutes” scenario.⁴ According to this scenario, the universe began with an explosion of energy from an initial singularity and evolved rapidly thereafter, over tiny fractions of micro-seconds, till the highest of the initial high energy was dissipated, and things started to calm down, after an interval of three minutes or so. In other words, a fully temporally determinate universe burst into being at an originary moment and thereafter time immediately began ticking over, minute by minute. In supposing this, physicists are not of course supposing that the universe began at a point in *pre-existent* time, but that time itself originated at a certain point, a point that is now measured by how long ago it was in the past. Such a view however invites the question, why then? Why did the universe originate X billion years rather than Y billion years ago? No answer seems to be available for this question. Moreover this first-moment scenario seems implicitly inconsistent with physicists' own account of the history of the universe. For the passage of time is discoverable through change, but metric time is a function of periodic processes: if there are no periodic processes that can function as measuring sticks for time, then time remains metrically indeterminate. In the early stages of the universe, according to the physicists' story, there was an extremity of physical flux, a soup of protean form, as yet unfixed. In the midst of this explosive instability, no periodic processes were yet occurring. It is

⁴ This was the title of a particularly famous book by Stephen Weinberg outlining the early history of the universe. See Weinberg 1977.

accordingly impossible to impose a measure of time, even retrospectively, on that period. Time was undoubtedly passing, since change was occurring, but whether the time that passed was of long or short duration would have been, and remains, impossible to say. There would have been no more reason to say of that earliest period that it lasted for three minutes than to say that it lasted for three billion years, since there was no way, even in principle, of measuring time. So although there may have been physical sequence in the unfolding of the universe, it seems wrong to say that this sequence began at a particular moment. There is no moment of origin because, during those earliest phases, there were simply no moments. The time between events was indeterminate. The most we can say is that the universe was around, in a temporally indeterminate way, and then as physical order constellated, the possibility of a temporal metric began to emerge.⁵ Moreover, if either a universal heat death or a “big crunch” ever eventuate, then the universe might pass into a further phase of temporal indeterminacy.⁶

The “first three minutes” hypothesis then – which is to say, the hypothesis that posits an originary moment for the universe – seems inconsistent with physicists’ own account of evolutionary cosmology. The hypothesis of self-creation however - which, as we have seen, entails a panpsychist view of the universe – enables us to make sense of evolutionary cosmology without falling into the originary anomaly. The self-created universe emerges into metrical time from a pre-metric and hence temporally indeterminate past. In this sense such a universe is “outside” time, yet temporality can emerge within it. Perhaps this is not so different from the temporal experience of an ordinary self. There is a temporal indeterminacy about our own experience of origin. In our early life we lack any sense of the metric of time – our infancy is our “dreaming”, an ocean of temporal non-differentiation, from the depths of which a definite temporal axis eventually defines itself. There is no originary moment, only this ocean of flux out of which temporal order emerges. This is admittedly only an analogy, but perhaps it provides some intuitive support for the panpsychist hypothesis of a universe which is both timeless, because self-created, but also generative of time.

In conclusion, the “hard problem” of consciousness is not the only problem that panpsychism helps to dissolve. Several of the primordial questions of metaphysics return satisfactory answers from a panpsychist perspective, not only vindicating panpsychism as an explanatory paradigm, but reinstating those metaphysical questions themselves, so long discarded as unanswerable.

⁵ In order to ascertain that a given process is periodic, a significant degree of order must already obtain in the universe. Different kinds of ostensibly periodic processes need to be measured against one another, and a certain amount of physical theory capable of predicting periodicity in the processes in question must be at least tentatively formulable.

⁶ This paragraph parallels very closely a passage in Mathews 2003, p. 53.

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