



Materialism and its Discontents

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In this series of talks I have been considering the work of some of the classical philosophers of the European tradition, from Plato to Hegel. I have shown how the great majority of these philosophers have expounded a basically spiritual view of reality. That is, they have held that ultimate reality has the nature of mind or consciousness, and that the material universe is the appearance or creation of that ultimate mind. Plato, Aristotle, Anselm, Aquinas, Descartes, Leibniz, Spinoza, Locke, Berkeley, Kant, Hegel, and many others all shared this general view. Even David Hume, a philosopher opposed to religious belief, who denied the existence of ultimate mind, did not suppose that matter could be ultimately real. Indeed, he thought that the material universe was a construct out of 'impressions' or 'ideas', and had no objective reality, or at least not a reality that could be rationally established.

Materialism has rarely seriously been on the agenda of classical philosophy. Democritus' theory that nothing finally exists except material particles with mass, position, and velocity, interacting with one another in more and more complicated ways, did not have much appeal as a description of the value-laden, complex world of human experience, with all its depths of feeling and varieties of intellectual description.

I remember the occasion when materialism first hit the world of Oxford philosophy. In the early 1960s there were three main Professors of Philosophy in Oxford - Gilbert Ryle, A. J. Ayer, and R. M. Hare. Hare was an Anglican, Ryle an agnostic, and Ayer an atheist. But they all agreed that materialism was an over-dogmatic, impoverished and over-simplified form of belief that completely failed to account for the sheer diversity of the human world, the importance of human experience, and the exigencies of morality.

I was sitting in one of Gilbert Ryle's seminars in 1963 when a visiting Australian scholar, David Armstrong, presented a paper defending a materialist theory of mind. I still remember the sense of shock as this heretical Australian laid into Ryle's concept of mind and insisted on the need for a purely materialist account of consciousness. It seemed so far beyond the bounds of plausibility that some of us were not sure if it was tongue-in-cheek or not.

Well it was not. And in about 40 years materialism, sometimes called 'physicalism', has risen to a position of such prominence in philosophy that the materialist Daniel Dennett can say, quite falsely in fact, that virtually every serious philosopher is now a materialist.

It is easy to forget how very recent and meteoric the rise of materialism has been in philosophy. How could it get from being a joke to being a claimant to obvious truth in forty years? I think there have been two major factors at work. One is the rise of cynicism about any sort of idealistic approach to life, about all human institutions, including religious ones, and about the failures of religious people to prevent violence and hatred, and indeed their tendency to increase violence and hatred in the world. This cynicism has been largely motivated by the Marxist 'hermeneutic of suspicion', the accusation that all religious and moralistic systems are in fact ideologies, no more than sophisticated disguises for egoistic self-seeking on the part of their proponents. Classical philosophy can thus be seen as a disguise for elitist social systems that privilege the sort of cultivated discussion that only leisure and wealth can bring. The realities of life lie further down, in work and physical effort. The material is the real, while the spiritual is a fictitious construct to delude the oppressed and keep them in their place.

When Karl Marx boasted that he taken the philosophy of Hegel, and stood it on its head, so that the world is not the self-expression of Absolute Spirit, as in Hegel, but a purposeless and violent by-product of blind material forces, he described the dethronement of Spiritual reality exactly. The irony is that Capitalists as

well as Marxists fell under this revolutionary spell. Capitalists may have resisted the idea of a centralised State-run economy, but they fell completely for the idea that 'realism' requires acceptance that the profit-motive (the morally neutral capacity to satisfy any or all desires) is the real driving force of history, and that spiritual ideals are artificial stimulants to distract the attention of the toiling masses.

In addition to this sense that the material, not the spiritual, is the driving-force of history, the incredible progress of the natural sciences is the second major factor that has contributed to the rise of materialism. In medieval times the earth was a fairly small place within a larger spiritual universe. But at least it was at the centre of physical reality. Since 1600 we have increasingly come to realise that humans are a virtually peripheral part of a vast physical cosmos. Earth circles a star, which is one of a hundred billion stars in our galaxy, which is in turn one of a hundred billion galaxies in our observed universe, which is only one of who knows how many universes. The physical universe has expanded exponentially, and it has taken over the spiritual, so that instead of angels and demons we now have flying saucers and extra-terrestrials.

But it is not just a matter of size. Since 1953 we have become able to identify the mechanisms of human heredity, and possibly create our own successors in genetic laboratories. We have uncovered the structure of the brain, and can map just how it operates to produce perception and thought. We have built computers that may in future simulate exactly every human thought-process. It can look as if our increasing knowledge of physical processes is at last revealing the secrets of consciousness and thought. It is not only ideas that are ideological constructs. Now minds themselves are often seen as illusions produced by physical processes in the brain.

Classical philosophers began from what was most evident to them - their own experiences and thoughts. But now science has shown that experiences are by-products of brain-processes, and brains can function very well whether or not conscious experiences exist. Thoughts are the dimly perceived epiphenomena of computational sequences in the brain-computer, which are the really effective causes of all our apparently mental behaviour. Marxism dethroned Spirit from having a primary role in how the world is. Science has dethroned consciousness from having a primary role in our understanding of the world. Thus materialism pricks the bubble of our spiritual illusions, and reveals that we are in fact computational, inefficiently designed and largely malfunctioning, physical entities without any larger purpose or meaning within the blind, pointless, freak accident of a wholly physical universe.

Some of the ablest contemporary philosophers are materialists. This is partly because it takes a huge amount of logical ingenuity to make the materialist programme seem plausible, so that it is an interesting challenge to good philosophers (just as the Christian doctrine of the Trinity was in medieval times, perhaps). But it should not be overlooked that philosophy is still a very diverse discipline.

Idealism, the view that mind or Spirit is the only ultimate reality, is far from dead, and most American University philosophy departments have a representative Process philosopher or Personalist - both variant forms of Idealism.

Phenomenology, the general view that analysis of existential, lived, experience should be the basis of an analysis of reality, remains strong in European philosophy. Positivists also make experience primary, though they apparently have few feelings or existential crises, and prefer to have clear, distinct, and unemotional experiences (which they call sense-data). Positivists have tended to think that their sense-observations are the basic data of rigorous science, and so they place a premium on sense-verification and the provision of sense-based evidence for all assertions. But Positivism actually undermines the possibility of public verification (since we cannot verify that other minds exist), and it also undermines the claims of much modern physics that the ultimate structure of matter lies in unobservable but mathematically postulated entities.

Common-sense pragmatism, often in a Wittgensteinian guise, sceptical of all grand general statements about ultimate reality, and refusing to accept that philosophers are in any better position to say what reality is like than anyone else, is widespread. Such philosophers are fond of saying, 'Reality is in order as it is', without the help of philosophy. So their arguments are often devoted to proving that philosophical arguments in general are superfluous and misleading. The problem is that, when readers begin to believe them, they stop reading philosophy any more. This has regrettably caused a number of philosophy departments in Britain to close.

Scepticism, too, is far from dead, and resembles common-sense, except that it even doubts whether common-sense can be trusted. Some forms of post-modernism are sceptical views, insofar as they doubt whether there is any objective truth to be found. The main problem with scepticism is that its proponents

tend to get very depressed, and often give up philosophy altogether, so there are not so many of them around.

Critical realism is quite popular. An intellectual descendent of John Locke, such realism maintains that perception and intellect do give us knowledge of objective reality, but show reality to be rather different from how things appear to the senses. Proponents disagree on just how different. For Locke a set of primary qualities - roughly, mass, position, and velocity - were objectively real, while secondary qualities like smell, colour, and taste are contributed by the mind. In modern physics those primary qualities have disappeared, and we have to talk of force-fields and wave-functions in curved multi-dimensional space-time. So sometimes critical realists are reduced to saying that there is definitely some objective reality which the mathematics of quantum theory describes. But exactly what it is we cannot be sure. It is what quantum theorist Bernard d'Espagnat calls a 'veiled reality', since we cannot know exactly what concepts like 'imaginary time' or 'waves of probability' correspond to, if correspondence is even an appropriate term any more. As one critical realist has said, 'I cannot be sure just what objective reality is. But whatever it is, I most certainly believe in it'.

The dogmatism of materialism is very apparent when placed alongside these other more or less widely held philosophical theses. Materialists are metaphysicians in the grand manner. They claim to know what reality is, and that their description of it is obvious, accurate, and rationally undeniable. Since that claim is doubted by most of their colleagues, it can hardly be quite as obvious as they say.

If modern philosophy is the application of reason to the widest possible set of known data, in order to obtain an informed judgment about what sorts of things are real, what sorts of things can be known, and what ways of life are most appropriate to the facts, it seems that we have to begin with the admission that there are many possible philosophical views, and none of them is theoretically certain, or even overwhelmingly probable.

It does not follow that they are all equally plausible. But it does follow that reason alone cannot make final decisions between a fairly wide spectrum of possibilities, ranging from the supremacy of Spirit to the supremacy of matter. What reason can do remains important. It can clarify basic axioms and aim to make them consistent with one another, analyse the strength and validity of inferences from those axioms, lay out a range of competing alternative axioms, test the consistency of an axiomatic system against the best available knowledge, and assess the strong and weak points of the general interpretation of the world that a rational system aims to provide. A rational philosophy is one that scores well on these criteria. But no philosophical view comes out as a clear winner.

It may be thought that at least some views - perhaps that of Plato or Descartes or Bishop Berkeley - have been decisively refuted in the course of the history of philosophy. But in these talks I have sought to rescue all three from their critics, and show that their views can be reformulated in entirely plausible ways. Of course reformulation is necessary. The Theory of Forms, for instance, needs to be re-stated as a theory of objective mathematical axioms, and related more closely to experimental observation. But it then survives very well in some versions of modern quantum theory, and mathematicians like Roger Penrose can describe themselves as Platonists without embarrassment.

It is not to be expected, then, that materialism is susceptible to a knock-down refutation. There will always be a possible reformulation of the view that mental phenomena are by-products of non-purposive and unconscious physical processes, and that our common-sense beliefs about the world do not represent the true nature of objective reality.

Nevertheless, materialism faces some very grave problems, largely raised by quantum physics. This is particularly annoying for materialists, since science tends to be a major plank on which materialism is based. The gravest objection is that it has become increasingly hard to say just what 'matter' is. If your philosophical theory is that everything that exists is composed of matter, it is frustrating to admit that you do not know what matter is.

For good old-fashioned materialists, everything that exists, or the one and only stuff out of which everything is made, is matter - solid particles located in three-dimensional space, with definite masses and velocities. When, around 1911, Rutherford bombarded atoms with alpha particles, the indivisibility and solidity of the atom was shattered. In 1924, de Broglie (pronounced 'de Broy') argued that sub-atomic particles could be treated as waves. In 1925 the first formalism for quantum theory was produced. From that point on, matter itself was subsumed under the wider concept of 'energy', which could take many forms. Electrons, from being tiny precisely locatable particles, were seen as probability-waves in Hilbert space, only collapsing

into particles under specific conditions of measurement. Even then, only the probability of finding them at a specific location could be predicted, and Heisenberg proved that such wave/particles could not be assigned both a determinate position and momentum at the same time.

In modern quantum cosmology, virtual particles of indefinitely many different sorts flash in and out of existence in accordance with quantum laws, from a vacuum (lowest energy) state of precisely balanced, but fluctuating, energies. Time and space are only four of ten or eleven dimensions that emerge from such a vacuum state, and there may be many space-time universes (of which ours is only one) that fluctuate in and out of existence from a more primal quantum foam, far beyond the forms of space-time with which we are familiar in experience.

Things have proceeded so far in quantum cosmology that physicists like Chris Isham, of Imperial College, and Stephen Hawking, of Cambridge, tend to say that 'imaginary time' is more real than real time, that the human belief that time passes (or that we pass through time) is an illusion of consciousness, and that human consciousness of three-dimensional space is a narrow subjective selection out of a multi-dimensional reality that we are unable to perceive.

Whatever all this means, it has left old-fashioned classical materialism far behind. The ultimate reality is beyond space-time as we know it, has a deep and complex mathematical structure, and is nothing like the world we see and touch and feel. It is certainly not made of matter, in the sense of solid bits of stuff, precisely located in three-dimensional space. Questions like, 'Where are the fundamental forces of nature located?', or 'How much time do quantum fluctuations in a vacuum take?', will be met with pitying looks by mathematical physicists. They (the forces and fluctuations, not the physicists) are not anywhere in our space, or at any point in what we ordinarily think of as time.

This means that the simple-minded materialism that insists that everything that exists must be somewhere, or that at least everything that exists must do so at some time, is just woefully ignorant of modern physics. There are supra-spatial and supra-temporal realities, realities beyond any and all spaces and times, and physics talks about them with an immense degree of sophistication and precision.

In the light of these considerations, it may seem that 'matter' is just a sort of thin and abstract skeleton, a dessicated substructure, of the richly observed world of human perceptions. This is roughly what Niels Bohr, one of the great founding fathers of quantum theory, thought. Bishop Berkeley was not so far wrong when he claimed that Locke's 'primary qualities' were in fact no more objectively real than the 'secondary qualities' that were admitted to be mental constructs, or appearances to human forms of sensibility. Primary qualities are a sort of abstracted and idealised mathematical ground-plan of the rich sensory world of experience.

As mathematical physicist John Polkinghorne has put it, 'We have no compelling grounds for regarding current theories as being more than a form of approximation to actual physical reality as it is encountered in the limit of effective isolatability' ('Exploring Reality', SPCK, 2005, p. 34). That is to say, mathematical physics deals with phenomena in artificially isolated experimental conditions, and even then provides only an approximation (though a remarkably precise one, within its terms of reference) to the 'actual physical reality'.

Professor Polkinghorne, as a critical realist, is convinced that there is an actual physical reality, modelled accurately, if not exhaustively, by our mathematics. Probably few physicists would wish to deny that. Put in another way, there was a real physical world in existence long before any human consciousness came into being, and somehow human consciousness emerged from it. But quantum physics seems to show that all that we really know of that world is how it appears to human consciousness, whether in perception or in mathematics or in some combination of both. We apprehend what our human faculties of sense and mathematical creativity allow us to apprehend. And we have strong reason to think that things as they are in themselves do not correspond neatly to things as we apprehend them.

Modern physics thus suggests a good deal of agnosticism about the hidden nature of the physical cosmos. It completely overturns the view of nature as a mechanical deterministic and atomistic system - the 'clockwork universe' - and replaces it with a much more organic or holistic picture of an entangled, emergent, open, intelligible, and semiotic universe.

The quantum universe is entangled, in that non-locality - the correlated behaviour of widely separated ('non-local') wave-particles - means that no physical event is truly 'atomistic' - isolatable from the rest of the universe. Niels Bohr spoke of the 'inseparable quantum interconnectedness of the whole universe'.

The universe is holistic, in that the nature of the whole helps to determine the behaviour of the parts. The whole is more than the sum of its parts.

The universe is open, because the principle of indeterminacy rules out the possibility of precise prediction of the future. It establishes probability as more fundamental than definite determinism, and sees the future as open to many creative possibilities, rather than as predestined to run along unavoidable tram-lines.

The universe is emergent, in that it develops new properties - like conscious awareness or intentional action - that are not wholly explicable in terms of prior physical states, though such properties seem to develop in natural ways from previous physical states. For instance, subjective perceptions of the environment and reasoned responses to it have developed by small incremental steps from pre-conscious stimulus-response mechanisms in simpler organisms. The evolutionary process seems to have an inbuilt propensity to form more complex, integrated, and sensitive wholes, a sort of directionality towards greater responsiveness and creativity.

The universe is intelligible and mathematically beautiful to a degree that could not have been envisaged even a hundred years ago. As Eugene Wigner has said, it is an unexpected gift that the mathematical structure of the universe should be as elegant and rationally comprehensible as it is.

Finally, the universe is semiotic, in that it does not simply re-arrange its basic elements in different combinations. Many of those combinations are semiotic, they carry information. DNA molecules, for example, carry the codes for arranging proteins to build organic bodies. And perhaps the basic laws of the universe are computational, coding instructions for assembling new structures. As Paul Davies and John Gribbin put it in their book, 'The Matter Myth' (Penguin, 1992), 'In place of clod-like particles of matter in a lumbering Newtonian machine we have an interlocking network of information exchange - a holistic, indeterministic and open system - vibrant with potentialities and bestowed with infinite richness' (302).

If this is materialism, it is materialism in a new key. The physical basis of the universe seems to have an inner propensity towards information-processing and retrieval, that is, towards intelligent consciousness. The search for specific final causes or purposes proved a dead-end in physics. It was much more fruitful to seek precise mathematical descriptions of closely observed regular behaviour patterns. But in the twentieth century a more cosmic sort of finality re-emerged. The fundamental laws of nature seemed remarkably ordered towards the emergence of consciousness and rational control of the environment. To put it bluntly, matter seems to have an inner orientation towards the emergence of mind.

It is hard to conceive of such a finality unless the goal of unlimited information and control is somehow already potential in the origin of the cosmic system. It is not surprising, then, that some quantum physicists think that something mind-like or conscious must lie at the very basis of physical reality. Eugene Wigner said that 'study of the external world leads to the conclusion that the content of consciousness is an ultimate reality', and Von Neumann wrote that 'all real things are contents of consciousness'. For them, the collapse of the possibilities described by wave-functions into actual existents is brought about by consciousness. Their view may be a minority one, but it demonstrates the fact that quantum physics has moved so far beyond classical materialism that it is no longer clear that 'matter' is radically different from 'mind'. It could be that matter is one form the objects of consciousness take, and that consciousness is needed to give definite actuality to its objects.

It certainly seems to be the case that the existence of consciousness and purpose in human minds is an unresolved problem for philosophical materialism, since there seems little prospect of giving a complete explanation of conscious experience in purely physical terms. If we have a view of the universe as intrinsically oriented towards consciousness, that would make mind a basic, rather than an unexpected, element of ultimate reality. And if there is just one independent and complete mind, not composed of separable parts, which generates all physical realities in order to bring into being sets of dependent and developing finite minds, that would provide an economical and elegant explanation for the existence of a physical universe.

But this hypothesis begins to touch the raw nerve and the emotional powerhouse of materialism. What really drives much materialist philosophy is rage at the injustice and indifference of the universe. Things happen to people by chance; the innocent suffer and the evil flourish. There is too much suffering and pain in the universe for it to be designed by any half-way benevolent being. Better, then, to postulate unconscious laws operating without benevolent purpose, than to think of there being a great intelligence that has intentionally planned such pain and pointlessness.

These are entirely serious points. If the universe is morally unjust and indifferent to suffering, that counts strongly against the existence of a just and compassionate God. But perhaps part of the trouble is that we think of a cosmic mind as able and wanting to avoid all suffering, and as immediately and directly rewarding the good and punishing the wicked. For a moment, set such an overtly religious picture to one side, and think just of a consciousness that conceives all possibilities and generates a universe directed to evolving other intelligent information-processing intelligences.

In a universe generated in such a way, chance and necessity, the conditions of open creativity and intelligible structure, may be bound together in a complex way. Perhaps the general structure of the universe has to be the way it is, for the forms of its being are necessarily laid down in the basic mathematical array of possible worlds. And the selection of actual universes may be determined by goals that are worth-while but hard to achieve and unavoidably susceptible to failure.

Plato and Aristotle struggled with this problem at the beginning of the European philosophical tradition. Their proposal (or one of them) was that the cosmic mind does not create matter, but shapes it to imitate and participate in the divine perfection as far as such a thing is possible. The material realm is one in which chance and necessity combine to form a structure with definite limits but also with possibilities for a certain amount of free creativity. The divine mind shapes the material in accordance with the intrinsic values of beauty and perfection that are inherent in its own being. But even the divine mind cannot annul the elements of chance and necessity that are inseparable from any material universe.

What may seem to be cosmic injustice or indifference to suffering is in fact an unavoidable consequence of the interplay of chance and necessity, inseparable from any material world, influenced but not wholly determined by the attraction of a divine mind that seeks to draw all things towards itself.

In general, this philosophical approach does provide a robust theoretical response to the reproach that good and bad fortune are just wholly accidental, or that no alleged cosmic consciousness could seriously intend to create a universe containing so much suffering. A universe in which free creativity and genuine personal relationships are important has to be a world in which chance (undirectedness by some determining force) has to play a part - though chance always works within the limits of a more general determinate structure. And the primordial creative mind does not intend to create suffering. Suffering is a possibility that cannot be eliminated from the necessary set of possibilities in the divine mind. Some suffering is unavoidably necessary in any universe that generates personally created values by beings that are an integral part of a developing, creative, dynamic, and interconnected physical system. And much suffering is intensified in kind and degree by the self-centred choices of finite free intelligences.

Philosophy cannot take us much further than this. But it may suggest that if there is a cosmic mind that is inherently perfect, yet has knowledge of every actual event, knowledge of suffering will be transmuted in the divine mind by its conscious inclusion within a wider and deeper experience. Since the divine mind has infinite time at its disposal, and intends the existence of distinctive values, there is some reason to hope that evil can eventually be overcome and eliminated, and even be used to generate distinctive sorts of values - so that, while evil can never be justified by its consequences, all evil may nevertheless be turned to some otherwise nonexistent good. Finally, it seems possible that the divine mind could enable finite intelligences to share in this divine experience of 'redeemed' evil. If that could be, materialist objections to the pointlessness and injustice of life would be overcome by giving all sentient beings a share in a supremely valuable reality, to the precise nature of which they had made an important contribution.

To a materialist this will seem like a fantasy that just refuses to face the fact of death. Yet may it not be that it is the materialist who is refusing to see what is there? The clear facts of consciously valued experience and of freely chosen purpose, the intelligibility and elegance of the deep structure of the physical world, the visions of transcendent value in art, the categorical demands of duty and of the search for truth, and the testimony of so many to a felt power making for goodness and uniting the mind to a higher selfless reality of wisdom and bliss - all these things the materialist has to consign to illusion.

So I conclude with a question philosophy alone cannot answer, but with which it has wrestled throughout its history: is consciousness an illusion, or is matter a myth? Is mind a late and transitory by-product of unconscious material processes that just happen to be what they are? Or is the idea of matter as a self-existent brute fact, without explanation or value, a purely hypothetical abstraction from our consciousness of a real, intelligible and value-filled world of experience?

What I have shown is that most European classical philosophers have inclined to some sort of idealist view. But human knowledge has expanded amazingly in the last hundred years. Has it brought the idealist

tradition to an end? Or is it rather opening up new forms of idealism, still in the making? In defending a series of presently unfashionable views in philosophy, I have made my own position fairly clear. But although I am almost certainly right, I entirely accept that the important thing is that we should go on asking the question. It is, as Plato said, the process of enquiry itself that brings wisdom to the human mind.

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