

MAKING ROOM FOR THE MENTAL

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According to materialism, everything that exists or happens is ultimately material or physical. In some form or other, this philosophy is a fundamental component of modern thought. For, with the development of modern science, it has become increasingly clear that natural phenomena can be described and understood in materialistic terms, without recourse to the notions of a divine creator or an immaterial human mind.

However, the general philosophical outlook of materialism can take different forms. In particular, materialism is often put forward as a mechanistic and reductionist philosophy. In the eighteenth century, materialism of this sort was called 'mechanical' materialism; nowadays it goes under the title of 'physicalism'. Quite standardly, it is treated as if it were the only form of materialism. My purpose in this paper is to argue that it is not so, and to suggest ways in which a non-mechanistic, non-reductive form of philosophical materialism can be developed.

Physicalism

According to the physicalist form of materialism, the material world is more or less as it is described by current physics and quantum mechanics. All things are composed of fundamental physical particles and fields of force, whose behaviour is determined by the basic laws of physics and quantum mechanics. Complex entities and phenomena, such as chemical substances, biological organisms, human actions and states of consciousness, are all ultimately composed – in very complex ways which are still not well understood – of such particles and forces.

This ontology, it is argued, implies that all phenomena can be described and understood in purely physical terms. The 'special sciences' – such as chemistry, geology, biology, the social sciences, psychology, and the like – can in principle be reduced to physics and mechanics. In practice, it is readily conceded, such reductions would be immensely complicated. They are not now feasible and perhaps they never will be.¹ In principle, however, all empirical knowledge can be reduced to the terms of physics. Other sciences have no independent validity, no irreducible content; they contain nothing that cannot be stated in purely physical terms.²

Many philosophers reject of this sort of reductionism. Criticism has focused mainly on the impossibility of giving a physicalist account of human thought and activity. Donald Davidson's work has been particularly influential. He maintains that belief and action are intentional in character; and intentionality, he insists, is a 'holistic' phenomenon. A particular belief or intention can be identified and described as such only by reference to a context of other intentional events (beliefs and actions), and ultimately to a web of meaningful social practices, to which a purely physicalist account is blind. Moreover, such identification involves assessing the belief or action

¹ 'Chemistry, for example, reduces to quantum mechanics, but actually constructing the quantum mechanical explanations of chemical phenomena is generally beyond human capabilities', Richard Warner, 'Introduction: The Mind-Body Debate', in R. Warner and T. Szubka eds, *The Mind-Body Problem: A Guide to the Current Debate*, Blackwell, Oxford, 1994, p. 2.

² See, e.g., Paul M. Churchland and Patricia S. Churchland, 'Intertheoretic Reduction: a Neuroscientist's Field Guide', in Warner and Szubka eds, *op. cit.*, pp. 41-54.

according to norms and principles of 'coherence, rationality and consistency',³ which the physicalist picture excludes. To describe and explain human thought and intentional activity as such, Davidson argues, we need to adopt a distinctive 'mental' or 'psychological' standpoint which uses concepts and theories which are irreducible to those of physics and mechanics.

Since materialism is quite standardly identified with reductionism, arguments such as these are frequently taken to imply a rejection of materialism *tout court* and to point instead towards either dualism or out-and-out idealism. Neither of these alternatives is attractive, and Davidson seeks to avoid them. Instead, he argues for a non-reductive form of materialism. For Davidson wants to combine a non-reductive account of the mental with a commitment to physicalism. There are great problems with Davidson's position, as I will now briefly indicate.

Davidson's 'Anomalous Monism'

Davidson calls his philosophy 'anomalous monism'. This involves a physicalist ontology, in that it holds that all events, including mental ones, 'simply are (in the sense of *are identical with*) physical events'.⁴ And yet Davidson wants to avoid the reductionism which is usually thought to follow from this. As well as describing human thought and action in physical terms, we can also see it as intentional and rational. And yet, Davidson maintains, this 'psychological' standpoint cannot be captured in purely physical terms: descriptions of mental events are not reducible to the terms of physics. How can these apparently contradictory claims be reconciled?

Although every particular human belief or action is identical with some particular physical state or event, Davidson argues, mental events as such (as kinds or types) have no general counterparts at the physical level. In the current jargon, there is a 'token' not a 'type' identity between the mental and the physical. For according to Davidson, there are no psycho-physical laws linking descriptions in mental terms with descriptions at the purely physical level. Nor, he insists, are mental events determined by 'strict quantitative laws' of the sort that operate in physics; they are subject only to 'irreducibly statistical correlations'.⁵ Mental events 'resist capture in the nomological net of physical theory';⁶ they are 'anomalous'.

As a physicalist, Davidson maintains that every particular mental event is identical with some particular physical event. However, in using mental concepts we are describing it in a way which has no precise equivalent at the purely physical level. 'Events are mental only as described'.⁷ Thus mental concepts give us a way of 'describing' or 'interpreting' events which carries no implications of the existence of a separate realm of mental entities. As Davidson puts it, 'the mental is not an ontological but a conceptual category'.⁸

The attraction of this approach is that it seems to 'make room'⁹ for an irreducible mental standpoint, while at the same time affirming physicalism and thus side stepping the troubling ontological implications of dualism. As Evinine says, 'Davidson effected a kind of liberation

³ Donald Davidson, 'Psychology as Philosophy', *Essays on Actions and Events*, Clarendon Press, Oxford, 1980, p. 233.

⁴ Davidson, 'The Material Mind', *op. cit.*, p. 248.

⁵ Davidson, 'Psychology as Philosophy', p. 230; cf 'Mental Events', *op. cit.*, p. 216.

⁶ Davidson, 'Mental Events', p. 207.

⁷ *ibid.*, p. 215.

⁸ Quoted by Simon Evinine, *Donald Davidson*, Polity Press, Cambridge, 1991, p. 63.

⁹ Cf Kant, *Critique of Pure Reason*, Preface to Second Edition, B xxx.

when he showed how one could be a materialist without having to posit unlikely identities between kinds of mental events and kinds of physical events.¹⁰

Unfortunately, this liberation is illusory. Davidson's approach does not ultimately escape the problems of traditional, ontological dualism; it merely shifts them elsewhere. The view that 'events are mental only as described' has the effect of making the mental into a mere 'standpoint' or way of 'describing' things. The result is what one might call a form of 'standpoint' dualism. Mental properties are no longer located in the Object being described; they are shifted into the 'subjective' sphere: into the standpoint, into the description and/or the describer. Here the old dualistic problems of the relation of the mental and physical simply re-arise. How is such a thing as a 'description' or a subjective 'standpoint' possible in a material world? How is it embodied? How does it arise? These problems are relocated by Davidson's philosophy, but they are not resolved. In Davidson's account, the mental seems to hover above the material world, neither reducible to it nor autonomous from it: hence the charge of 'epiphenomenalism' which is brought against it by philosophers like Kim.¹¹

Nor can these problems be resolved within the framework of Davidson's philosophy. By refusing to 'ontologise' the mind, he does not avoid ontology altogether. On the contrary, his ontology is quite explicitly physicalist. His sole concern is to ensure that this ontology does not rule out the possibility of a distinct and irreducible mental standpoint; but physicalism is left quite unquestioned and uncriticised as an account of the world in its material aspect.¹²

The nature of the mental cannot be understood in this fashion. For physicalism makes it quite incomprehensible how the mental standpoint could be embodied in the material world. This is not only because, as Davidson quite rightly argues, the mental is irreducible to the physical, but equally because, on the physicalist account, the material world excludes all manifestations of what Davidson himself portrays as the characteristic forms of the mental: holistic unity, coherent order and rational form.

Philosophies of Nature

A more far-reaching criticism of physicalism is required if we are to develop a satisfactory non-reductive materialism. To understand how this is possible it is essential to see that physicalism gives a reductive account not only of human activity but also of purely material phenomena. We need a materialist but non-physicalist philosophy of nature.

The approach I am suggesting here will be unfamiliar to most contemporary philosophers in the analytical tradition. Discussion of materialism within this tradition usually takes place within the field of philosophy which has come to be known as 'philosophy of mind'. The assumption commonly made in this field is that the main obstacle to a satisfactory understanding of the mind-body relation lies in our conceptions of the mental, and particularly in the continuing influence of the Cartesian, Enlightenment concept of mind (the 'ghost in the machine').

Ideas of nature, by contrast, are taken as given directly and unproblematically by the natural sciences. The very idea of a philosophy of nature is regarded as a peculiar aberration of German

¹⁰ Eynine, *Donald Davidson*, p. 63.

¹¹ Jaegwon Kim, 'The Myth of Nonreductive Materialism', in R. Warner and T. Szubka eds, *The Mind-Body Problem*, pp. 242-260; see also Anthony Skillen, 'Mind and Matter: a Problem that Refuses Dissolution', *Mind*, vol 93 (1984), pp. 214-226. Davidson sometimes appeals to the notion of 'supervenience' to describe this relation ('The Material Mind', p. 253); but this term merely labels this relationship, without clarifying it.

¹² This is characteristic of dualism, which typically tries to combine a physicalist account of the material world with the recognition of an irreducible mental sphere.

idealism and equated with discredited attempts to propound a speculative theory of nature a priori. No doubt philosophy of nature may sometimes take this form; but it need not do so.¹³ Quite the contrary. One of the tasks of philosophy is to describe, in theoretical and philosophical terms, the basic features of the natural world as disclosed by the natural sciences. In this sense, a philosophy of nature an essential aspect of the philosophy of mind; and even those philosophers of mind who dismiss the idea of philosophy of nature and claim to base their views of nature purely on those of the natural sciences have such a philosophy, if only unconsciously.

In particular, physicalism is a philosophy of nature in just this sense. Like the mechanical materialism of the Enlightenment, modern physicalism claims to be based on modern science, particularly physics and (quantum) mechanics. It trades on the authority and prestige of these theories. In fact, it is quite different from them. Physics and mechanics are branches of natural science. As such, they must ultimately be assessed in scientific terms, not purely philosophically. Physics describes and explains the material world in its physical aspect. This is the most fundamental and universal aspect, for everything material has a physical aspect. Nevertheless, the physical aspect is only one aspect of the material world, and there are others. But physicalism regards the physical aspect as the sole aspect; it generalises this aspect into a universal world-view. It reduces all phenomena to their physical aspect. That is to say, it treats physics as sufficient on its own to give a complete and comprehensive account of the world. In this respect, physicalism is a metaphysical theory. As such it must be assessed philosophically.

Enlightenment materialism was physicalistic and mechanistic because, at that time, physics and mechanics were the only sciences which had reached maturity. Since then scientific understanding has been extended into many further fields. New sciences such as chemistry, cosmology, geology, biology and the social sciences have developed. No doubt physics and mechanics remain the most fully developed and precise sciences; but the physicalist view that these other sciences have no independent validity is no longer plausible. However, modern physicalism, with its reductionist approach, continues to maintain this in the a priori manner of the speculative philosophies of nature it claims to reject.

TOWARDS A NON-PHYSICALIST MATERIALISM

Not that the physicalist account either of nature or of human activity is entirely mistaken; rather it is partial and one-sided. Modern physics tells us that all material entities are ultimately composed of fundamental physical particles and fields of force. All material things are physical in nature. That is the truth in physicalism. It does not follow, however, that all material phenomena are fully describable or explicable in terms of physics. For all actual and particular material entities and events are parts of processes which go beyond those described by physics. They may be seen in other contexts and explained in different terms.¹⁴

This point is perhaps clearest in the case of biological and chemical phenomena. Of course, all biological entities (such as cells, organisms and their parts) are made up of chemical constituents in the form of atoms and molecules, and these in turn are composed of more fundamental physical particles. Nevertheless, the concepts describing biological entities and the laws

¹³ Hegel's philosophy is often criticised for involving an a priori scheme of this sort. There is some justification for this charge. Although his system incorporates a huge mass of empirical data and an encyclopedic knowledge of the natural sciences of his day, it forces all this into the a priori structures of Hegelian metaphysics.

¹⁴ 'Mechanism ... is ... a shallow and superficial mode of observation, one that cannot carry us through in connection with Nature and still less in connection with the world of Mind', G.W.F. Hegel, *Logic*, trans. W. Wallace, Clarendon Press, Oxford, 3rd edn, 1975, §196z.

governing their behaviour are distinct from, and irreducible to, the concepts and laws of physics. This is not just because such descriptions and explanations would be too complex. Rather it is because the properties identified by biological concepts have no counterparts at the purely physical level. Biological phenomena cannot be comprehended as such in purely physical terms. A biological organism is not a mere collection of chemical or physical constituents; it is an entity with its own specific form and properties. Its parts, as parts, cannot adequately be understood as merely externally related to each other and to the organism as a whole. 'The limbs and organs ... of an organic body are not merely parts of it: it is only in their unity that they are what they are, and they are unquestionably affected by that unity, as they also in turn affect it'.¹⁵ They can be comprehended only in the context of the whole, 'holistically'.

Similarly, the behaviour of an organism can be explained only in terms of laws governing the organism as a whole. For these laws make essential reference to the life-processes of the organism as a whole: to its 'interest' in its own preservation and in the preservation of its species. Such laws postulate ends towards which the behaviour of the organism is oriented. They thus involve 'norms' – or at least they describe the material processes involved in goal-directed activity which is the essential material basis of norm-governed behaviour. As Dennett says,

When an entity arrives on the scene capable of behaviour that staves off, however primitively, its own dissolution and decomposition, it brings into the world its 'good'. That is to say, it creates a point of view from which the world's events can be roughly partitioned into the favourable, the unfavourable and the neutral. As the creature thus comes to have interests, the world and its events begin creating reasons for it, whether or not the creature can fully recognise them. The first reasons pre-existed their own recognition.¹⁶

This is not to suggest that living things are animated by an immaterial 'vital force' or anything like that. Biological organisms are purely natural, material entities. In some cases the underlying physical and chemical mechanisms and processes that govern their behaviour are beginning to be understood. Yet this does not mean that biological phenomena as such can be described and explained in terms of mere physics or chemistry, or that such reduction will ever be possible. For biology involves a different and higher level of understanding.

For example, insulin is a biological product; it is a hormone which is secreted in the pancreas. The chemical composition of insulin is known, and it can even be synthesised artificially. Some of its chemical effects in the body are understood. But this does not mean that the biology of insulin has been or can be reduced to chemistry. To describe and understand insulin in biological terms involves much more than a knowledge of its chemical composition and properties. It involves understanding its role as a hormone – that is to say, its function in the body as a whole. Chemistry can provide an account of the mechanisms underlying this role; but this role itself can be comprehended only with a different level of concepts and principles which are constitutive of biology as a distinct science.

Moreover, biological laws are not 'strict laws', but rather what Davidson calls 'statistical generalisations'. They hold only within limits: only in 'normal conditions' and 'for the most part'. In short, the same considerations that Davidson uses to argue for the irreducibility of the mental

¹⁵ Hegel, *Logic*, §135z, cf §216z. See also, Sayers, 'Marxism and the Dialectical Method: A Critique of G.A. Cohen', *Radical Philosophy* 36 (Spring 1984), pp. 4-13 (reprinted in Sean Sayers and Peter Osborne eds, *Socialism, Feminism and Philosophy: A Radical Philosophy Reader*, Routledge, London, 1990).

¹⁶ Daniel C. Dennett, *Consciousness Explained*, Penguin, Harmondsworth, 1993, pp. 173-4.

to the physical, can also be used to argue for the irreducibility of biological explanations to merely physical ones. Yet this does not warrant the conclusion that biological events are 'anomalous' in Davidson's sense.¹⁷ No doubt, biological phenomena are 'anomalous' *relative to* the laws of physics and chemistry, in that they are not reducible to such laws. However, such anomalousness is only relative. Biological phenomena are governed by a distinct level of biological laws.

Ontological Implications

Similar arguments apply to other areas of science as well. In general, different ways of describing and understanding the material world are embodied in the different 'special sciences', such as physics, chemistry, biology, etc.¹⁸ These different theories involve different explanatory levels which are irreducible to each other. What does this imply about the material nature of the entities described?

As we have seen, Davidson gives a non-realist account of the mental standpoint. Whether that is true of mental descriptions we shall see presently. First, however, I want to argue that it is not true in the case of biology.¹⁹ For it is not the case that biological concepts embody only a different subjective 'standpoint': a different way of 'describing' or 'interpreting' things, which has no objective or 'ontological' implications. The concepts and principles which the biologist uses are not simply a – or the – biological 'way of seeing things'. On the contrary, they describe real, objective and material, features of the world.

Of course, a living organism is composed of physical and chemical constituents, and nothing more. Nevertheless, it is not a mere collection of such constituents, nor even of anatomical and physiological parts. It is these parts unified, organised and acting as a whole. This unity and organisation are not features only of our descriptions: they are properties of the thing itself; they are constitutive of it as a biological organism. Nor are the laws governing its behaviour simply a function of our theories; they are operative in the organism itself as *its* laws. There are real – objective and material – differences between a living thing and a merely physical or chemical entity which it is the aim of biology to describe. This is the realist and materialist view.²⁰

Again, it must be stressed, this is not to suggest that living things involve a transcendent 'organic unity' or that they are animated by any non-natural 'vital principle'. Biological forms and laws do not transcend those of physics and chemistry; they do not supplant or replace them. On the

¹⁷ Cf J. Fodor, *Psychosemantics*, MIT Press, Cambridge MA, 1987, pp. 4f, quoted in Evnine, *Donald Davidson*, p. 22. Davidson himself is non-committal: 'I do not want to say that analogous remarks may not hold for some other sciences, for example, biology. But I do not know how to show that the concepts of biology are nomologically irreducible to the concepts of physics. What sets apart certain psychological concepts – their intentionality – does not apply to the concepts of biology', 'Psychology as Philosophy', p. 241. I discuss this argument below.

¹⁸ Though physics is universally applicable, it is also a 'special' science on the view that I am defending, in that it describes only one aspect of material phenomena.

¹⁹ Davidson does not suggest this (see note 16 above). Kant, however, does. He argues that we cannot comprehend organic forms in mechanical, causal terms, yet nor must we have resort to explanation in terms of a 'vital principle'. The judgement of organic organisation is purely 'reflective', not 'constitutive', and implies nothing about the object described, *The Critique of Judgement*, trans. J.C. Meredith, Clarendon Press, Oxford, 1952, Part II, §14.

²⁰ This is also the view usually taken in the natural sciences where, as Hegel says, 'objective reality is attributed to laws, forces are immanent, and matter is [looked upon as] the true nature of the thing itself... Genera, too ... are not just a grouping of similarities, an abstraction made by us; they not only have common features but they are the object's own inner essence ... Physics looks upon these universals as its triumph', *Philosophy of Nature*, trans. A.V. Miller, Clarendon Press, Oxford, 1975, §246z. See Sayers, *Reality and Reason*, ch. 2, for a fuller discussion of such realism.

contrary, in a living thing the laws of the lower – physical and chemical – levels continue to operate. On this basis, however, new structures and forms develop. New – biological – principles come into effect, and physical and chemical laws, although they continue to operate, in Hegel's words, 'cease to be final and decisive, and sink, as it were, to a subservient position'.²¹ Physical processes are subsumed within a higher law. Such biological laws have objective existence and real effects, not by acting independently of physical laws, nor by replacing them, but rather by giving a new and higher form of organisation to the physical and chemical phenomena. The biological level arises within, and exists on the basis of, the physical and chemical levels, not outside or apart from them.

Process in Nature

In this way, biological concepts and principles are neither reducible to those of chemistry or physics, nor are they entirely autonomous or transcendent. These different levels are relatively autonomous: they are not only distinct but also united; there is continuity as well as difference between them. The clearest demonstration of this is provided by the fact – and modern science takes it for a fact – that biological phenomena *emerge* from merely chemical and physical – i.e., non-biological – conditions, by purely natural processes.

Evolution of higher and more complex forms from lower and simpler ones is not peculiar to biological evolution, it is a fundamental feature of material existence more generally. It is exhibited at a simpler level in the evolution of the universe as a whole – in the formation, development and ultimate death of galaxies, stars and planetary systems – described and explained by cosmology. Likewise, geology describes the development of the material features of the planet. These phenomena are material processes which have their basis in certain physical and chemical mechanisms. Nevertheless, such processes cannot be reduced to chemistry, physics or mechanics. And this is not just for the reasons given so far: that the concepts and principles of these sciences are irreducible to purely physicalist terms. For physicalism involves the reductionist view that all natural processes can be explained entirely in terms of a few simple and eternal laws of physics and mechanics. This view is blind to development and process in nature; it excludes the very ideas of the emergence and evolution of new forms and new laws within the material world. That is to say, physicalism gives an unsatisfactory account of the material world even in its *physical* aspect.

This is not to deny that cosmology, geology, biology and other scientific theories which study processes of natural development postulate purely physical and chemical mechanisms as the basis for the evolutionary processes they describe. Indeed, it is essential to their being scientific theories that they do so, in that these theories are thus given a naturalistic and materialistic basis, and non-materialist explanations in terms of 'rational purpose' or 'divine providence' in natural history are excluded. However, it is impossible to understand cosmological, geological or biological evolution in terms of purely physical processes alone. The underlying physical mechanism is merely a postulated basis for evolutionary processes, the explanation of which, in all these fields, relies on concepts and principles specific to these sciences.

²¹ Hegel, *Logic*, 195z.

HUMAN ACTIVITY AND THOUGHT

We are now in a better position to consider the nature of the mental and its relation to the physical. For similar arguments apply in this area too; and when this is understood, there is less temptation to privilege the mental and portray it as, in some special and absolute way, autonomous.

Human beings are biological organisms. They are made up entirely of physical, chemical, biological constituents. Nevertheless, human thought and activity cannot be described or understood as such in purely biological, let alone chemical or physical, terms; a distinct and independent set of concepts and principles, a new and different approach or 'standpoint', is needed for this task. As Davidson argues, this is not simply because of the complexity of mental phenomena. Rather, it is because the description of mental activity as such involves reference to a wider context of meaningful human activity, and it involves appeal to norms of coherence and rationality which are beyond the scope of physical theory.

Davidson's term for the discipline which describes and explains human intentional activity is 'psychology'; and when he contemplates the idea of a material basis for mental phenomena he thinks in terms of neurobiology. These are common tendencies in current analytic philosophy of mind. However, his own account of the mental diverges significantly from the atomistic and individualistic perspectives of both psychology and neurobiology. With his appeal to the notion of a context of meaningful practices, Davidson's own account suggests that 'social theory' and/or 'history' would be more appropriate terms for the subject which is needed to describe and understand mental phenomena. The mental is not just a psychological or neurobiological but also a social and historical phenomenon; and the wider context of practices, as well as the principles of rationality and coherence, to which his account appeals, are essentially social in character.

As we have seen, Davidson gives a non-realist, non-ontological, account of the mental standpoint. Descriptions of human thought and activity are merely different forms of interpretation, with no objective ('ontological') implications. I have criticised these views as they apply to biology, and the same criticisms apply here too. The concepts and principles we use to describe and understand human thought and activity refer to real and objective features of human life. The context of intentional activities to which we must refer when we characterise a phenomenon in mental terms is not a function of our interpretation only. The 'holism' of the mental is not a feature merely of the concepts and categories with which we describe it; it has an objective, material existence. It is constituted by the social practices and institutions within which we necessarily operate as human agents.

Likewise, the normative principles of rationality and coherence that we must use to assess human actions are not only our subjective creations. They are embodied in social institutions and practices, and particularly those of language. These provide the context in which alone human beings can develop the ability to reflect on what they are doing and act in a self-consciously intentional and rational fashion.

No doubt, a human being is a biological organism, and society is a collection of such organisms. Nevertheless, it is impossible to understand human thought and activity in purely biological terms. For in society, those biological organisms are united and function according to social and not merely biological or individualistic psychological principles. Their behaviour can be understood only in the context of the social institutions and practices in which they are embedded. Moreover, these social relations have a real, objective, material existence; they are not

merely a function of our descriptions.²² Of course, society is as it is on the basis of human anatomy and physiology. It is also the case, however, that human anatomy and physiology are as they are because they have developed and function within a social context. Although human thought is an activity of the brain, it cannot be explained in narrowly neurophysiological terms. For the brain's activity is determined not just by neurophysiological laws, but also by its historical, social and psychological context. To understand the activity of the brain, as the organ of thought, it must also be seen in its social and psychological context, to which the concepts and principles of neurophysiology are blind.

The Emergence of the Mental

According to Davidson, mental phenomena are not governed by 'strict quantitative laws', they are 'anomalous'. Similar arguments apply to biological phenomena, as we have seen. This vitiates Davidson's attempt to draw a sharp distinction between the mental and material standpoints on this basis. As with biology, moreover, the mental is 'anomalous' only relatively. It is 'anomalous' in the sense that it cannot be described and explained as such in merely biological terms. However, it involves and is governed by a new and different – historical, social and psychological – level of forms and laws. These forms and laws do not entirely transcend or supplant those of biology. Biological laws continue to operate in all of human life, even in the highest mental activities. However, with historical development, higher – social and psychological – forms of organisation come into operation, under which biological laws are subsumed and to which they are subordinated.²³

Davidson has a further argument for the view that there are fundamental differences between human intentional activity and other natural processes. Human behaviour is not just law like, he maintains, it is intentionally so. In Kant's terms, human beings can act not just 'according to' principles, but 'from' them.²⁴ This distinction captures a fundamental difference between the laws of biology and those governing human thought and activity.

However, this distinction is not an absolute one, and one must beware of treating it as if it were. Human activity is not absolutely 'anomalous' or 'autonomous'. The ability to act from principle, in a reflective and self-conscious manner, emerges gradually and by degrees out of simpler, non-conscious capacities and law-like forms of behaviour. As such, this ability is only *relatively* autonomous from the natural conditions and social practices from which it develops and on which it is based. It is not a merely biological ability, but nor is it an ability that entirely separates us from the material world and transcends its processes. It is an ability which emerges and develops, gradually and by degrees, in the course of biological and historical evolution.

²² Language is a 'spatial and temporal phenomenon ... not ... some non-spatial, non-temporal phantasm', Wittgenstein, *Philosophical Investigations*, Blackwell, Oxford, 2nd edn, 1958, I §108.

²³ As Hegel notes with reference to the phenomenon of illness, 'in Nature, when the higher or organic functions are in any way checked or disturbed in their normal efficiency, the otherwise subordinate aspect of mechanism is immediately seen to take the upper hand' (*Logic*, §195z). Even illness, however, cannot be understood in purely physical or biological terms, for it is not a merely physical or biological process: there is a human dimension to it as well. Thus there are different ways of responding to and 'living with' illness, both on the patient's part and on the part of others in relation to the patient. A doctor must be sensitive to this and respond to illness, not just as a physical process, but also as a human event.

²⁴ Davidson, 'Mental Events', p.216, cf Kant, *Groundwork of the Metaphysic of Morals*. Similarly, Hegel distinguishes between natural processes, in which reason is present only 'in itself', from human social activity which is rational both 'in and for itself'.

The ability to act reflectively is particularly connected with the capacity to use language. The latter is normally present in adult human beings but not in other animals. It has a material and biological basis. Only in this respect is it valid to talk of a 'language instinct'.²⁵ Even so the term is misleading. The ability to use language is not instinctive or innate; it grows and develops. The new born child is only potentially a language user.²⁶ For this ability to be actualised, it must be elicited and developed from without, socially. To be sure, the abilities to act reflectively and rationally presuppose a basis of biological capacities, but they can develop and be realised, both in the species and the individual, only in a social context.

Human beings are not instinctively or 'by nature' self-conscious or rational, they become so – partially and to a degree – through the process of their development. Self-consciousness and rationality are essentially social phenomena. They are a product not only of biological processes, but also of human social activity and historical development. These developments result in the emergence of self-consciousness and rationality from natural conditions by natural processes. They involve the development of new and higher, social and historical, laws and principles in human life. These are not absolutely 'anomalous' or 'autonomous'. They do not supplant the laws and principles of biology, which continue to operate in every aspect of human life. Just as with the relation of biology to chemistry previously discussed, however, and within the limits that biology determines, these new social forms and principles develop and become operative, and the lower, biological principles become secondary and subservient.

Evolutionary processes of this sort are incomprehensible within the framework of Davidson's 'standpoint' dualism. This is not just because he attempts to give a 'non-ontological' – i.e., non-realist and ultimately non-materialist – account of the mental, which makes it impossible to understand how mental phenomena can be embodied in material form; but also because the physicalism his philosophy involves is incapable of comprehending natural evolution and development. Indeed, these are two correlative aspects of such dualism. In trying to 'make room' for mental phenomena by separating them off into their own logically autonomous space, dualism makes a mystery of how they could have emerged and developed in the material world. However, the non-physicalist form of materialism for which I have been arguing shows that is no need to 'make room' for consciousness, intentionality and rationality in this way. They have made room *for themselves* by emerging and coming into operation *on the basis of* our biology, and *within* the parameters and limits it imposes. They have evolved naturally from material conditions.

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10 December 1995

²⁵ Steven Pinker, *The Language Instinct: The New Science of Language and Mind*, Penguin, Harmondsworth, 1995.

²⁶ 'The child is still in the grip of natural life, has only natural impulses, is not actually but only potentially or notionally a rational being', Hegel, *Philosophy of Mind*, trans. W. Wallace and A.V. Miller, Clarendon Press, Oxford, 1971, 3385z.