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HERBERT SPENCER'S EPIGENETIC EPISTEMOLOGY

ONE hundred years ago, in the last decades of the nineteenth century, Herbert Spencer (1820–1903) was widely regarded as a major thinker.¹ Even Charles Darwin, who on other occasions had been somewhat disparaging, wrote to Ray Lankester that he suspected that 'hereafter he [Spencer] will be looked at as by far the greatest living philosopher in England; perhaps equal to any that have lived.'² Spencer's mature ambition was to bring together all the disparate thought of the nineteenth century, from cosmology to sociology, to form one great synthesis. This synthesis was published as *A System of Synthetic Philosophy* and appeared in successive volumes beginning with *First Principles* in 1862 and ending with the final volume of *Principles of Sociology* in 1896. On dictating the final words of the last volume of the *Synthetic Philosophy* Spencer remarked to his amanuensis 'it is for this I have lived'.

Accounts of Spencer's early life may be gleaned from his *Autobiography*,³ *Letters*⁴ and biographies.⁵ His education was sketchy and interrupted, and his first employment was as a railway engineer in the English Midlands (1837–41). His first publications had to do with engineering and dissenting radicalism. He was self-taught as a biologist and psychologist. His knowledge of biology was derived from Carpenter,⁶ Milne-Edwards⁷ and, through them, von Baer.⁸ The most important general idea in Spencer's biology was von Baer's concept of epigenesis: that development proceeded from the general to the special, that the chick (to use von Baer's example) begins as a vertebrate,

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¹According to his biographer (H. S. R. Elliot) Spencer's 'influence in the latter half of the nineteenth century was immense . . . [his] influence extended throughout the world' (*Dictionary of National Biography*). The effects of his publications may also be judged by his being offered some twenty-two academic distinctions, ranging from university doctorates to fellowships and presidencies of learned societies all over the world. These distinctions, moreover, were offered in spite of the fact that he was known not to be interested in such recognition and, indeed, habitually to decline all such proposals.

²F. Darwin (ed.), *The Life and Letters of Charles Darwin*, Vol. 3 (London: John Murray, 1887), p. 120.

³H. Spencer, *An Autobiography* (London: Williams and Norgate, 1904).

⁴D. Duncan (ed.), *Life and Letters of Herbert Spencer* (London: Williams and Norgate, 1911).

⁵See J. D. Y. Peel, *Herbert Spencer: The Evolution of a Sociologist* (London: Heinemann, 1971); H. S. R. Elliot in *Dictionary of National Biography* (London: Oxford University Press, 1975), p. 2898.

⁶W. B. Carpenter, *The Principles of Comparative Physiology* (London: Churchill, 1854).

⁷H. Milne-Edwards, *Éléments de zoologie* (Paris, 1834).

⁸K. E. von Baer, *Ueber Entwicklungsgeschichte der Thiere*, 2 vols. (Königsberg, 1828, 1837).

differentiates first into a gallinaceous bird and finally into a domestic fowl.⁹ Looking back, towards the end of his life, Spencer insisted that

that which really *has* exercised a profound influence over my thought [is] the truth which Harvey's embryological enquiries first dimly indicated, which was afterwards more clearly perceived by Wolff and which was put into definite shape by von Baer — the truth that all organic development is a change from a state of homogeneity to a state of heterogeneity . . . the formula of von Baer acted as an organizing principle.¹⁰

Von Baer's concept forms the kernel of Spencer's famous definition of evolution:

Evolution is an integration of matter and a concomitant dissipation of motion; during which matter passes from a relatively indefinite, incoherent homogeneity to a relatively definite, coherent heterogeneity; and during which the contained motion undergoes a parallel transformation.¹¹

This definition was ridiculed by some, for instance Kirkman,¹² during Spencer's own lifetime. It is evidently a pre-Darwinian notion of evolution. It looks back to an earlier tradition of evolutionary thought wherein it was supposed that organic matter necessarily underwent a process of 'complexification'.¹³ Spencer, as we have just seen, is quite open in his admission that he obtained the central idea which organized his immense synthesis from the embryologists. The epigenetic paradigm is nevertheless very different from the mechanistic paradigm which pervades the great seventeenth-century philosophies and their successor association psychologies. It is my intention, in what follows, to examine the influence of this epigenetic paradigm on Spencer's theory of knowledge.

The Universal Postulate

The subject which stretched Spencer to and, indeed, beyond his limit was psychology. As he neared the completion of *The Principles of Psychology* he

⁹*Ibid.* (1828) p. 140.

¹⁰H. Spencer, 1864, 'Reasons for Dissenting from the Philosophy of M. Comte', reprinted in *Essays: Scientific, Political and Speculative*, 3rd edn, Vol. 3 (London: Williams and Norgate, 1878).

¹¹H. Spencer, *First Principles* (London: Williams and Norgate, 1870), p. 396.

¹²See J. C. Flugel and D. J. West, *One Hundred Years of Psychology* (London: Duckworth, 1964), p. 96.

¹³Good accounts of eighteenth-century theories of transformism are to be found in B. Glass, O. Temkin and W. L. Strauss, Jr. (eds.), *Forerunners of Darwin, 1745 – 1859* (Baltimore: The Johns Hopkins Press, 1967).

suffered a nervous breakdown and was never again able to concentrate for long periods of time.¹⁴ This is revealing. It demonstrates the profound difficulty which obstructs the development of a thoroughgoing evolutionary world-view: how can it incorporate mind?

Spencer had been drawn to psychology long before he conceived the enterprise of the *Synthetic Philosophy*. The first edition of the *Psychology* was published in 1855 but psychological speculations had occupied Spencer from the early 1840s. In his twenties he had been much interested in phrenology and had written several papers which were published in *The Zoist*, a phrenological journal.¹⁵ In the early 1850s, immediately preceding the writing of the *Psychology*, he had been intimate with George Henry Lewes who had already given public lectures on physiological psychology at Finsbury.¹⁶ In his *Autobiography*, written nearly fifty years later, Spencer recalled many animated discussions on this topic with his friend. Lewes's interest in the subject persisted and he was to publish important work on psychology later in the century.¹⁷ But, according to Spencer's own account, the seed which caused his psychological ideas to crystallize was John Stuart Mill's *System of Logic*. Mill's *Logic* came as a gift from another of the intimate friends he made at this time of his life: Mary Ann Evans (later George Eliot). The *System of Logic* triggered a lengthy article entitled 'The Universal Postulate' which was published in the *Westminster Review* of October 1853. It is interesting to note that the future George Eliot may have been further involved at this stage, for she was at this time the assistant editor of the *Review*.

The 'Universal Postulate' forms the first part of the first edition of the *Psychology*. In the second and subsequent editions it is relegated to the second volume. This is due to Spencer's perception that the analytic approach, of which the Postulate forms the basis, is 'much less readable than the synthetical'.¹⁸ It is the latter approach, concerning itself with the evolution of the nervous system, which forms the first volume of all editions after the first.

The 'Universal Postulate' formed Spencer's 'Archimedean point'. Like many speculative intellects he was not prepared to begin a subject without first

¹⁴H. Spencer, . *op. cit.* note 3, pp. 463 – 68. Spencer relates how, when nearing the completion of his treatise, he experienced a definite physical sensation which marked the break-down of his power of concentration. After publishing the first edition of the *Psychology* (indeed he writes in the Preface that ill-health prevented him completing the work to his own satisfaction) he was never able to give uninterrupted attention to any task for long periods of time.

¹⁵'A New View of the Functions of Intuition and Benevolence', *The Zoist: A Journal of Cerebral Physiology and Mesmerism* 1 (1844), 369–85; 'On the Situation of the Organ of Amativeness', *ibid.* 2 (1844), 186–8; 'A Theory Concerning the Organ of Wonder', *ibid.* 2 (1844), 316–25.

¹⁶D. Duncan, *op. cit.* note 4, p. 542.

¹⁷G. H. Lewes, *The Physical Basis of Mind* (London: Trubner, 1877); *idem.*, *The Study of Psychology* (London: Trubner, 1879).

¹⁸H. Spencer, *The Principles of Psychology* (London: Longman, Brown, Green and Longmans, 1855; republished Farnborough: Gregg International), Preface, p. iv.

testing its foundations. He was not prepared simply to assume that psychology was a science just like all the other natural sciences.

No rational Psychology [he wrote in the first edition of the *Psychology*] can be constructed save on the basis of some acknowledged relation between thought and the subject matter of thought — between mind and nature. No explanation whatever can be given to any act of intelligence, but what implicitly affirms or denies certain ontological propositions. Hence, unless some such proposition can be established, no superstructure of science is possible.¹⁹

It is, perhaps, this very unmodern concern for the metaphysical foundations which has turned subsequent psychologists away from Spencer's work.

Spencer's definition of the 'Universal Postulate' emerges from a critical review of the epistemologies of Reid, Mill, Whewell, Berkeley, Hume, Kant and Mansel. He begins his 1853 article in the *Westminster Review* by asking:

Have we not cause to think that there exists some unestablished principle of reasoning — some principle which, though instinctively acted upon, is not entered amongst our logical canons? That men should have constructed so many systems of thought which we hold to be irrational, yet cannot satisfactorily refute is strong ground for suspecting this.²⁰

He continues by testing the epistemologies mentioned above as candidates for this missing principle. After finding them all, for one reason or another, unsatisfactory he proposes his own 'first principle': the notion of 'belief'. He supports this conclusion by saying that

to say . . . there is no belief, is to utter a belief which denies itself — is to draw a distinction between that which is, and that which is not, and at the same time to say that we do not distinguish between that which is and that which is not.²¹

What did Spencer mean by 'belief'? In his 1853 article he defines it in the following way: 'Every logical act of the intellect is a predication — is an assertion that something *is*; and this is what we call belief.'²² As befits a 'first principle' this assessment is very central to Spencer's system. Unlike earlier epistemologies which ultimately founded themselves on observation — 'there is thought now, therefore . . .', or Locke's method of 'looking into his own mind and seeing how it wrought' — Spencer, like Goethe's Faust, founded his system on an *act*. This shift from spectatorship to participation is one of the most significant features of a fully accepted evolutionary philosophy. We shall

¹⁹*Ibid.* (1855), p. 34.

²⁰H. Spencer, 'The Universal Postulate', *Westminster Review* IV(NS) (1853), 513–4.

²¹*Ibid.*, p. 519.

²²*Ibid.*, p. 518.

see it at work in other parts of Spencer's treatise. This vision of man as part of nature, not something separate from nature, also pervades the work of Spencer's great contemporary, Charles Darwin. Over and over again in the notebooks which Darwin kept after his return from the *Beagle* circumnavigation we find Darwin criticizing the view that man somehow stands apart from nature. In the C notebook for instance he writes: 'Man in his arrogance considers himself a great work worthy the interposition of a Deity. More humble and I believe truer to consider him created from the animals.'²³

But, of course, it is clear that we have all sorts of beliefs, some more trustworthy than others. It is needful, as Spencer would say, to search out and classify the belief, or beliefs, of which we can be most certain. In this way Spencer approaches his 'Universal Postulate'. For, by reviewing the multitudinous beliefs to which he is subject, he believes he can discern a class which it is impossible to doubt, beliefs which differ from all others by virtue of the fact that they 'invariably exist'. We have no choice in the matter: their negation is inconceivable.

This was the 'Universal Postulate'. 'Knowledge of the highest validity' is that of which the negation is inconceivable. Spencer gives many examples of this type of knowledge.

It is inconceivable that one side of a triangle is equal to the sum of the other two sides [he writes] the two sides cannot be represented in consciousness as being equal in joint length to the third side, without the representation of a triangle being destroyed; and the concept of a triangle cannot be framed without a simultaneous destruction of a concept in which both these magnitudes are represented as equal. That is to say, the subject and the predicate cannot be united in the same intuition — the proposition is unthinkable.²⁴

In this example the Postulate is being used to define analytic or, as Whewell termed it,²⁵ necessary truth. But Spencer maintains that the Postulate shows that there are other sorts of belief which have an equally exalted place in the hierarchy. 'Whilst looking at the sun a man can no more conceive that he is looking into darkness than he can conceive that the part is greater than the whole.'²⁶ He gives many other examples to show that what Feigl has called

²³C. Darwin, 'Notebook C', pp. 196–7, transcribed P. H. Barrett, in P. H. Barrett and H. Gruber, *Darwin on Man* (London: Wildwood House, 1974).

²⁴H. Spencer, 'Mill versus Hamilton — the Test of Truth', *Fortnightly Review* 1 (1865), p. 535.

²⁵Spencer, *op. cit.* note 20 p. 521: '... Dr. Whewell defines necessary truths as "those in which we not only learn that the proposition *is* true, but see that it *must* be true; in which the negation of the truth is not only false but impossible. . . .'"

²⁶Spencer, *op. cit.* note 18 (1855), p. 28.

‘raw feels’²⁷ and Russell ‘egocentric particulars’²⁸ are also to be classified as ‘knowledge of the highest validity’.

In response to criticism by Mill,²⁹ Spencer was careful, in a later publication, to distinguish between ‘inconceivable’ and ‘unbelievable’ propositions.³⁰ Mill pointed out that what men have believed is determined, *inter alia*, by their place in history. The notion of the antipodes, to use Mill’s example, was unbelievable to many in classical antiquity although fully accepted by nineteenth-century Englishmen. Spencer’s example of an unbelievable proposition had to do with the firing of a cannon ball from England to America. To entertain this idea, he argued, did not destroy the concept of cannon, gunpowder or the width of the Atlantic. The attempt to entertain the notion that one side of a triangle was equal in length to the sum of the other two sides was, however, autodestructive and hence inconceivable: ‘. . . the subject and predicate cannot be united in the same intuition — the proposition is unthinkable.’³¹

Although the Universal postulate led Spencer to cross swords with J. S. Mill, in other respects he warmly supported the latter’s position. In particular Spencer believed that his view that universal truths and egocentric particulars had the same level of validity was fully in the spirit of Mill’s ‘Experience Hypothesis’.³² Indeed Spencer wished to go further than Mill. He wanted to say that the machinery of logical deduction is no more certain than at least some of the ‘empirical’ data which form the initial premisses. The difference between ‘universal’ and ‘particular’ truths is merely that ‘in the one instance the antecedents of the connection are present only on special occasions, whilst in the other they are present on all occasions.’³³ In both cases experience is the ultimate court of appeal.

This thoroughgoing empiricism is, of course, consistent with Spencer’s evolutionary paradigm. What others call ‘certainty’ is, Spencer insists, merely ‘knowledge of the highest validity’. He implies a *scala sapientiae* of increasing degrees of validity. But the scale proceeds, as we shall see more fully later, from the bottom up rather than from the top down. It is a clear break with the scholastic, the Platonic – Cartesian, *more geometrico*, where the paradigmatic

²⁷H. Feigl, *The ‘Mental’ and the ‘Physical’* (Minneapolis: University of Minnesota Press, 1958), e.g. p. 23: ‘Don’t you want anaesthesia if the surgeon is to operate on you? And if so what you want prevented is the occurrence of the (very!) raw feels of pain, is it not?’

²⁸B. Russell, *An Inquiry into Meaning and Truth* (Harmondsworth: Penguin Books, 1962), chap. 7, e.g. ‘redness-here-now’ or, more simply, ‘this’.

²⁹J. S. Mill, 1856, *A System of Logic*, 4th edn, in *Collected Works of John Stuart Mill*, J. M. Robson (ed.), Vol. VII (London: Routledge and Kegan Paul, 1973), pp. 262–279.

³⁰Spencer, *op. cit.* note 24.

³¹*Ibid.*, pp. 534–9.

³²Spencer, *The Principles of Psychology*, 2nd edn, Vol. 2 (London: Williams and Norgate, 1872), p. 407n.

³³Spencer, *op. cit.* note 18 (1855), p. 28.

instances of knowledge are analytic, according to Plato, inborn,³⁴ and all else mere more-or-less close approximation to this impeccable standard. For Spencer, as we shall see, truth emerges as the sole survivor in the *bellum omnium contra omnes* of plausible opinions; not something immutable, handed down from on high.

The Universal Postulate enabled Spencer to establish a hierarchy of beliefs: distinguishing the more from the less certain. In essence he took the view that doubt is parasitic upon certainty; 'If I want the door to turn, the hinge must stay put.'³⁵ Certainty or, in Spencer's terminology, 'knowledge of the highest validity', was defined by the Universal Postulate. Two straight lines cannot enclose a space; we cannot be mistaken whilst doubting that doubting is occurring. The negations of these propositions are inconceivable. But when the Postulate is used more than once the certainty of the conclusion diminishes. 'That must be the most certain conclusion which involves the Postulate fewest times . . . every fresh assumption of the Postulate involves some risk of error.'³⁶ In other words, according to Spencer, that $2 + 2 = 4$ is more certain than that $5 + 7 + 6 + 9 + 8 = 35$. Mill took issue with Spencer at this point, maintaining that the application of a rule a number of times can hardly make the result less certain than its application just once.³⁷ But Spencer was being true to his empirical principles. He was concerned with human reasoning, especially with human metaphysical reasoning. He was not thinking of computers. He wished to make clear that we cannot hold a conclusion with greater certainty than that which could be assigned to its premisses.

This fairly obvious insight, Spencer believed, applies with particular force to the long strings of metaphysical argument entangling the mind-brain problem. Of Hume he writes that 'to conclude that there is no proof of an external world is to reason my way to the conclusion that reason is fallacious.'³⁸ Which is absurd. The perception of this page, of this print, to paraphrase Spencer slightly, 'is a simple indivisible act . . . It has the direct guarantee of the Universal Postulate; and it assumes the Universal Postulate *only once*.'³⁹ Similarly Spencer believes that the Postulate can be used to demolish Berkeleyan idealism. If it is suggested that *esse est percipi*, that 'all those bodies which compose the mighty frame of the world, have not any subsistence without a mind, that their being is to be perceived or known . . .', Spencer replies 'how can we be sure of this?' Is it not the case that the

³⁴See, for instance, *Phaedo*, Section 77.

³⁵L. Wittgenstein, *On Certainty*, G. E. M. Anscombe and G. H. von Wright (eds.), trans. D. Paul and G. E. M. Anscombe (Oxford: Blackwell, 1975), Section 343.

³⁶Spencer, *op. cit.* note 18 (1855), p. 33.

³⁷Mill, *op. cit.* note 29, pp. 276–8.

³⁸Spencer, *op. cit.* note 18 (1855), p. 42.

³⁹*Ibid.*, p. 43.

arguments used to establish this position involve the use of the Postulate more times than it is required to establish the original naive realism? Does not Berkeley's argument ultimately 'base upon a thing's existence the proof of its non-existence'? Such arguments, he concludes, are 'like many kindred kinds, self-destructive; [they] repeatedly assume the validity of that whose validity [they] question.'⁴⁰

The use of the Universal Postulate leads Spencer to adopt a position which he termed 'transfigured realism'. He shows that all other positions are less certain. In all of them

. . . the derived is to set aside that from which it is derived; a series of links is to be regarded as stronger than any one of its single links; and consciousness is more trusted when its terms are indistinct than when they are distinct.⁴¹

Furthermore the Universal Postulate is itself a truth of the very highest validity: 'not even a reason for doubting its validity can be given without tacitly asserting its validity.'⁴² Spencer has tested the foundations and found them firm. He has established, as he says, his 'fulcrum', his 'Archimedean point', and he can now go on to develop a psychology.

Epigenetic Epistemology

Having established to his own satisfaction a sound analytic base, Spencer was able to go on to outline an epigenetic epistemology in which the categories of subject and object, of self and not-self, are shown to develop out of what he hypothesized to be the initially undifferentiated chaos of the 'phenomenological field'. Instead of beginning his meditation by sequestering himself in a Bavarian poêle Spencer chose a much more English scene: a deckchair on a sea-side promenade. A careful consideration of what is 'given' reveals, he writes, two sets of events which may be distinguished most readily by their comparative vividness. The more vivid events: the blue, the white, the crash and rumble, the coolness, the odour, the pressure (to assign them their given names) differ from the less vivid occurrences (those which we have learnt to call memories, associations, anticipations) in a large number of ways.⁴³ He argues, rather as Piaget was later to argue, that the first few years of our experience of the consistent difference between the two sets of events leads to a

⁴⁰*Ibid.*, p. 24; in the second edition of the *Psychology*, in a vivid anticipation of the twentieth-century, Spencer writes baldly that 'metaphysics, in all its antirealistic developments, is a disease of language' (Vol. 2, p. 502).

⁴¹Spencer, *op. cit.* note 32, p. 490.

⁴²*Ibid.*, p. 490.

⁴³*Ibid.*, pp. 463–4.

deeply embedded categorization into those labelled 'objective' and those labelled 'subjective'. He also argues that the organizing concepts of space, time and matter are developed in the same way as and, indeed, synergistically with this differentiation of the homogeneous matrix of the 'given' into self and not-self.⁴⁴ That this is not obvious is largely because the categorization happens so early in life and is unceasingly reinforced.

In all this Spencer is close to much subsequent phenomenological thought. When all hypothesis is stripped away we are left with the 'phenomenological field', the 'this-here-now'. In Heidegger's phrase 'disclosedness is the basic character of Dasein'.⁴⁵ But so far Spencer has taken the stance of the uninvolved spectator. He has described that which is given as if the sights and sounds, the memories and anticipations, presented themselves willy-nilly; as if, to use Whitehead's phraseology, they were an uncontrollable 'stream of happenings'. But this seems not to be the case. We are not merely observers, but thoroughly involved. We are aware of a power which 'wells up' and which we can control. In essence, according to Spencer, this is the sense of muscular effort. It leads to one of the basic constructs of Spencer's world: the notion of 'force': 'the ultimate of ultimates'.⁴⁶ The sense of touch and the resistance to muscular effort which is implied by touch seemed to Spencer to be one of the most basic of the happenings which present themselves. Tactile sensations, resistances, are everywhere present; whilst we live we are immersed in them whether we stand, sit or lie down. In the synthetic part of his *Psychology* he is at one with his great philosopher – biologist predecessor, Aristotle, in arguing that 'Excluding the lowest animals . . . there are none but what have, at every moment of their lives, some impression of resistance.' Such impressions, he continues, 'form, as it were, the weft of that tissue of thought we are ever weaving'.⁴⁷

It is instructive to contrast Spencer's tactile epistemology with the more usual geometrical – optical version which we have learnt via Descartes from the scholastics and, further back, from Plato and Euclid.⁴⁸ The fundamental feature of the 'external' world for Descartes was 'extension'. In the *Principles of Philosophy* he writes that

⁴⁴*Ibid.*, p. 478n: 'The relation of Subject and Object is organized as a form of thought by the same experiences which organize Space and Time as forms of thought; and the organization of them, going on *pari passu*, further one another'.

⁴⁵M. Heidegger, *Being and Time*, trans. J. Macquarrie and E. Robinson (Oxford: Blackwell, 1962), p. 263.

⁴⁶Spencer, *op. cit.* note 11, p. 169; and in the second edition of the *Psychology* he writes '... the impression of *resistance*. This is the primordial, the universal, the ever-present constituent of consciousness' (Vol. 2, p. 232).

⁴⁷Spencer, *op. cit.* note 32, p. 233.

⁴⁸P. H. Rhineland, *Is Man Incomprehensible to Man?* (New York: Freeman, 1974) has much of interest to say about the 'optical model of knowledge' and, indeed, suggests that 'this model of mind . . . lies at the root of our concept of "objectivity"' (p. 22).

If, whenever our hands moved in a given direction all the bodies lying that way were always to retreat with the same speed as our hands approached, we should never have any sensation of hardness. Now it is inconceivable that, if bodies did retreat in this way, they would thereby lose their nature as bodies; so this nature cannot consist in hardness The nature of matter, or of body considered in general [consists] . . . simply in its being a thing that has extension in length, breadth and depth.⁴⁹

Spencer has it quite the other way round. For him the notion of extension is derived from the datum of resistance which, he believes, is directly given in phenomenology. Spencer, compared with Descartes, is immersed in the world of events, participating in them; Descartes, in contrast, in pre-evolutionary times, seems to be a spectator, uninvolved, standing over against the world.

The contrast between Cartesian 'objectivity' and Spencerian 'participation' becomes prominent also in another aspect of Descartes' metaphysics. It is well known that after the night in the poêle, when Descartes hit upon the *cogito*, he had to fall back on St. Anselm's ontological proof to escape from mere solipsism. For without the assurance that a just and benevolent God existed the reports of the senses might well be illusory. The ontological proof depends centrally on the proposition that, to quote Descartes, ' . . . it is no less contradictory that the more perfect should follow from and depend on the less perfect, than that something should precede from nothing.'⁵⁰ In other words it is impossible for a being lower in the *scala naturae* to generate one higher in that scale. If a perfect being can be conceived he must, to be perfect, exist. Furthermore since the notion of a perfect being cannot be produced by the imperfect mind of a subordinate creature it must have been implanted from above. As Alexander Koyré wittily says, corresponding to the *cogito*, 'I think, therefore I am', there is another Cartesian aphorism: 'God is thought of; therefore God exists'.⁵¹ These propositions are fragments of a world-view which is totally alien to the world-view of nineteenth-century evolutionism. They presuppose a 'great chain of being', to be sure, but the movement is all downwards, from the great one in his heaven to the lesser breeds on earth. Spencer's evolutionary epistemology envisaged a movement in precisely the opposite direction: from fish to philosopher. If Spencer had required an argument to establish the reality of an 'external' world he would not have appealed to St Anselm. The evolutionist inhabits a different world, a world in

⁴⁹R. Descartes, 1644, *Principles of Philosophy*, Part 2, ed. and trans. E. Anscombe and P. T. Geach (London: Nelson, 1970), chap. IV, p. 199.

⁵⁰R. Descartes, 1637, *Discourse on Method*, ed. and trans. E. Anscombe and P. T. Geach (London: Nelson, 1970), chap. IV, p. 33.

⁵¹A. Koyré, 1970 in *Descartes: Philosophical Writings*, E. Anscombe and P. T. Geach (eds.) (London: Nelson), Introduction, p. xl.

which this particular problem, a scandal according to Heidegger⁵² and many other philosophical thinkers, does not obtrude: human beings are part of the evolutionary process.

Spencer's epigenetic epistemology allows him to develop his concept of force in very much the same way as we have already seen him develop the concepts of self and not-self. We pick up an object and immediately there 'wells up' a vivid feeling of effort. We encounter an obstacle, a particular 'raw feel' presents itself in the aggregate of vivid feelings. The obstacle prevents our further advance. We pull or push an object behind or before us and are at once aware of a countervailing pull or push. A multitude of such experiences forms the raw material from which we construct our world. The newly-born infant is at once immersed in this phenomenology. From these inescapable disclosures, argues Spencer, our notion of an 'independent force' beyond consciousness is derived.

Spencer argues that our conviction that there is an independent power in the world of the not-self is reinforced by the experience of exploring our own body: that very special bit of the external world which is always with us and in a sense *is* us.⁵³ Reverting to his classification of what is disclosed into 'vivid' and 'faint' aggregates of feelings he shows that one category of vivid feelings can be tied to another category of vivid feelings. Suppose we grasp one hand with the other and pull. Then, according to the Spencerian analysis, we connect one aggregate of vivid feelings, the effort of pulling, with another aggregate of vivid feelings, resistance to that pull.⁵⁴ Or, suppose we grasp our own knee. The latter exists in the phenomenology as a cluster of vivid feelings. We see it, we can touch it, we can, perhaps, even smell it. The hand with which we grasp it is similarly ultimately analysable as a cluster of vivid feelings. The effort of grasping the knee with the hand 'wells up', as Spencer phrases it, as yet another vivid feeling and is followed (or is there a simultaneity?) by a vivid feeling of pain, or pressure, located in the knee. This vivid feeling, just as the vivid feeling of resistance in the previous example, is in no way different from that experienced when an 'external' event is encountered. Hence, argues Spencer, we conclude that there is a power in things very much as in our own experience of muscular effort. This conclusion that there is an external power, although analytically unknowable is, moreover, unshakable.

Spencer thus believes that he has shown that when we move from the passive

⁵²M. Heidegger, *op. cit.* note 45, p. 249: 'The "scandal of philosophy" is not that this proof (that for an "external world") has yet to be given but that *such proofs are expected and attempted again and again*. . . . Such expectations, aims and demands arise from an ontologically inadequate way of starting with *something* of such a character that independently *of it* and "outside" *of it* a "world" is to be proved present-at-hand. . . . If Dasein is to be understood correctly, it defies such proofs, because, in its Being, it already *is* what subsequent proofs deem it necessary to demonstrate for it.'

⁵³Spencer, *op. cit.* note 32, pp. 470–3.

⁵⁴*Ibid.*, p. 483n.

to the active, from the observational to the participatory mode, we necessarily come to liken the vivid aggregate to the faint aggregate of feelings: to believe that the former, like the latter, contain an indwelling energy, 'a fountain of power'. Furthermore he believes that it is this conviction of the reality of an external power, a power which resists perturbation, which lies at the root of our concept of a material object. He argues, in other words, that we have come to believe that a power analogous to our feelings of muscular tension holds together the elements of those 'clusters of appearances' we have learnt to call objects.

So that [he sums up] these several sets of experiences, unite to form a concept of something beyond consciousness which is absolutely independent of consciousness; which possesses power, if not like that in consciousness yet equivalent to it; and which remains fixed in the midst of changing appearances. And this conception, uniting independence, permanence, and force, is the conception we have of Matter.⁵⁵

Survival of the Fittest 'Psychons'

Spencer's *Psychology* sets out to be a psychology of logic. This may seem strange to the twentieth-century reader who has become accustomed to regard psychology and logic as distinctively different types of endeavour. It was not, however, strange in the nineteenth-century. Mill, in the *System of Logic* which had so stirred Spencer, defines Logic as 'the art and science of reasoning' and refers approvingly to Archbishop Whateley's *Elements of Logic*; saying:

he has defined Logic to be the Science, as well as the Art, of reasoning; meaning by the former term, *the analysis of the mental process which takes place whenever we reason*, and by the latter, the rules grounded on that analysis for conducting the process correctly⁵⁶ (my italics).

⁵⁵*Ibid.*, p.483. It has been pointed out that Spencer's analysis of the origin of the concepts of matter, resistance and force is not unlike that to be found in the works of Kant and Hegel. Spencer, however, only refers disparagingly to the German philosophers and, indeed, shows very little sign of having troubled himself to master their writings. Of Kant he merely says that in 1844 he had 'got hold of a copy of Kant's *Critique* . . . and had read its first pages: rejecting the doctrine in which I went no further' (*Autobiography*, Vol. 1, p. 378). At the end of his life he regrets the fact that 'I know so little of the Hegelian philosophy' (*Autobiography*, Vol. 2, p. 240), but at the same time inveighs against the Hegelianism which he sees advancing everywhere in British Universities: '. . . what could be a better defence of incredible doctrines than to hide behind unthinkable propositions' (*Life and Letters*, p. 458). Although Spencer is normally characterized as a synthesizer (especially from the title of his *Magnum Opus*) it seems that the synthesis was achieved by osmosis from the ideas current in mid-nineteenth-century England, rather than from precise reading. In a letter to Lewes in 1864 he writes 'Those whose education has been mainly literary are unable to realize the mental attitude of those whose education has been mainly scientific — especially where scientific education has been joined to scientific tendencies, and a life of practical science continually illustrating theoretic science as in my case' (*Life and Letters*, p. 487). This, of course, in no way detracts from the interest of Spencer's thought: on the contrary, it may be seen as a litmus indicating the mix of ideas current in his time.

⁵⁶Mill, *op. cit.* note 29, first edn, in *Collected Works*, p. 4.

The greater part of the analytical sections of Spencer's *Psychology* consists precisely of an 'analysis of the mental process which takes place whenever we reason'.

In working out a psychology of logic Spencer combines his 'Universal Postulate' and his epigenetic evolutionism. Spencer, like his friend and mentor G. H. Lewes, accepted a psychoneural identity theory of mind and brain.⁵⁷ Mental events and neural events are different perspectives of the same happenings just as, to use Lewes's analogy, the concave and convex surfaces of a sinusoidal curve are different perspectives of the same line.⁵⁸ This solution to the mind – brain perplexity is very common amongst neuroscientists today and has been well described by Mario Bunge.⁵⁹ Bunge uses the term 'psychon' to describe a 'plastic neural system': a system consisting of a large number of neurons whose connexities are *not* genetically specified: indeed the number of neurons and synapses *etc.* are not, according to Bunge, predetermined. Such systems, Bunge proposes, can be imagined to change and develop throughout life. Spencer's mid-nineteenth-century concept is very similar.

For Spencer the psychons of Bunge's neuropsychology are 'coherent states of consciousness'.

. . . [A] discussion in consciousness [Spencer writes] proves to be simply a trial of strength between different connections in consciousness — a systematized struggle serving to determine which are the least coherent states of consciousness. And the result of the struggle is that the least coherent states of consciousness separate, while the most coherent remain together — form a proposition of which the predicate persists in the mind along with its subject.⁶⁰

We are back, full circle, with the Universal Postulate. For the Postulate merely describes the most coherent of all possible states of consciousness. It is a state in which the subject and its predicate are indissolubly linked.

This part of Spencer's philosophical psychology thus seems to suggest that 'truth' is a peculiar state of consciousness rather than a relation between an event and its representation. This view is in fact implicit throughout his treatise. It arises from his phenomenology. His analysis suggests that the traditional para-optical epistemology of object and image is secondary and metaphorical. We have already seen him argue that the categories of 'subject'

⁵⁷C. U. M. Smith, 'Evolution and the Problem of Mind: Part 1, Herbert Spencer', *J. Hist. Biol.* 15 (1982), 55 – 88.

⁵⁸G. H. Lewes, *The Study of Psychology* (London: Trubner, 1879), p. 62. The presence of Marian Evans in the background is hinted at once again for, in a footnote, Lewes writes that 'this felicitous image of the concave and the convex, first employed by Fechner for the objective and subjective elements, may have been suggested by a passage in Aristotle (*Nic. Eth.* 1, XIII, 9) which one very near and dear to me has brought under my notice.'

⁵⁹M. Bunge, *The Mind – Body Problem* (Oxford: Pergamon Press, 1980).

⁶⁰Spencer, *op. cit.* note 32, p. 450; see also *op. cit.* note 24, p. 545.

and ‘object’, of the ‘mental’ and the ‘physical’, differentiate from an originally homogeneous ‘disclosedness’. We obtain our idea of incorrectness, of illusion, by noting that some part of what is disclosed does not cohere with other parts. ‘. . . [B]elief, theory, fact, truth . . .’, he writes, ‘these words can be themselves only names for certain relations among states of consciousness.’⁶¹ Hence a discussion in consciousness is an evolutionary contest between different ‘psychons’. ‘In the language of Evolution’, he concludes, ‘we have to rise from a less definite to a more definite form of mental action.’⁶²

These passages anticipate in a remarkable manner the writings of later ‘biological’ epistemologists. Campbell, for instance, has expounded rather similar views in his paper entitled ‘Blind Variation and Selective Retention in Creative Thought as in other Knowledge Processes’ and in numerous other publications.⁶³ Campbell’s views are, however, more fully Darwinian than Spencer’s epigenetic theory. Elements are projected into the mind and sifted and shuffled into new combinations until a ‘sense of fitness’ assures the thinker that the ‘truth’ has been attained. For Spencer, ‘states of consciousness’ *develop* toward more and more stable structures. His concept is very similar to that which Ashby puts forward in *Design for a Brain*: ‘. . . in the nervous system the truism that the unstable tends to destroy itself implies that there is a fundamental *tendency* for the stable to replace the unstable’⁶⁴ (my italics). Spencer’s understanding of the way in which a ‘discussion in consciousness’ develops remains tied to von Baer’s epigenesis and is untouched by the atelic aspect of *The Origin of Species*. To the end of his life Spencer refused to accept the blindness towards the future of Weismann’s interpretation of Darwinism.⁶⁵

This epigenetic understanding of evolution made it easier for Spencer to reduce logic from a normative to a natural science. The breakdown of the barrier between ‘ought’ and ‘is’ is very much an implication of epigenetic epistemologies. For this reason many thinkers have felt that such theories are

⁶¹*Ibid.*, p. 387.

⁶²*Ibid.*, p. 388.

⁶³D. T. Campbell, 1960, ‘Blind Variation and Selective Retention in Creative Thought as in other Knowledge Processes’, *Psychol. Rev.* 67 (1960), 380–400; see also D. T. Campbell, ‘Unjustified Variation and Selective Attention in Scientific Discovery’, in *Studies in the Philosophy of Biology*, F. J. Ayala and T. Dobzhansky (eds.) (London: Macmillan, 1974), pp. 139–61.

⁶⁴R. Ashby, *Design for a Brain* (London: Chapman and Hall, 1954), p. vi.

⁶⁵Spencer published four essays on ‘the inadequacy of natural selection’ and against Weismannism in the *Contemporary Review* of 1893 and 1894. These essays were collected together to form Appendix B to Vol. 1 of the 1898 edn of the *Principles of Biology*. Throughout he argues with great fervour and in great detail for the view that evolution, especially of the higher animals, occurs through the inheritance of acquired characteristics. The anatomical structure develops by the animal’s directed effort towards an end — the giraffe, to use Lamarck’s example, attempts to reach leaves in taller and taller trees — and the result of all this goal-directed activity is transmitted to the offspring.

unphilosophical. A modern review has been provided by Kitchener.⁶⁶ Spencer, however, as we have seen, had sought to settle the philosophical issue before he embarked upon the *Psychology*. Lewes had taken the sturdy Johnsonian view: 'that the mind *can* be explained as a function of the material organism is proved by the fact that it *is* so explained',⁶⁷ and Spencer, in essence, agreed, adding that there is no viable alternative, 'we are obliged to think it so'. Because of his von Baerian convictions the normative nature of logical thought presented Spencer with no special difficulties. The 'norm' could be treated in the same way as the embryologist treats the adult: as the standard by which the various stages of morphogenesis are judged. Spencer's whole system is held together by the paradigm of epigenesis: '. . . matter passes from a relatively indefinite, incoherent homogeneity to a relatively definite, coherent heterogeneity.' Indeed in the cosmological parts of his work Spencer sought to show that such 'progress' necessarily resulted from the interaction of underlying 'forces'.⁶⁸

Transfigured Realism

Let us turn lastly to Spencer's ultimate epistemological position: transfigured realism. It is to this that the eighteen chapters of Spencer's analysis finally lead. We have seen that he believed that the Universal Postulate eliminated all positions other than realism. Berkeleyan and Kantian idealism, Humean scepticism, all, he believed, could be shown to be fallacious. Yet Spencer was firm that what he called 'crude realism' was also unsustainable. He was firm, first of all, because he recognized that 'raw feels', the ultimate elements into which he believed that the mind could be analysed, could not be described. It is only the relations between these 'elements' of consciousness that can be described and hence have attached to them the labels of truth and falsity. It is only when subject and predicate appear indissolubly bound together, as in the propositions whose negations are inconceivable, that we have the right to be sure that the proposition is of the highest validity. But of the elements themselves nothing can be said; they form, as Wittgenstein was later to remark, a 'private language': 'Even could we succeed', writes Spencer,

⁶⁶R. F. Kitchener, 'Genetic Epistemology, Normative Epistemology and Psychologism', *Synthese* 45 (1980), 257–80.

⁶⁷G. H. Lewes, *The Study of Psychology* (London: Trubner, 1879), p. 158.

⁶⁸H. Spencer, 'Progress: its Law and Cause', *Westminster Review* 11(NS) (1857), 445–85; reprinted in *Essays: Scientific, Political and Speculative*, Vol. 1 (London: Williams and Norgate, 1868), pp. 30–3: 'Just as it is possible to interpret Kepler's laws as the necessary consequence of the law of gravitation; so it may be possible to interpret this law of progress, in its multiform manifestations as the necessary consequence of some similar universal principle . . . [that] every active force produces more than one change — every cause produces more than one effect . . . [and] universally the effect is more complex than the cause.'

'in proving that the Mind consists of homogeneous units of feeling of the nature specified, we should be unable to say what Mind is; . . . the ultimate unit must remain . . . absolutely unknown.'⁶⁹

But, secondly, he wished to distance himself from 'crude realism' by pointing out that if 'mind' is unknowable then so is 'matter'. The external world which the Universal Postulate shows to be the best analysis of our experience is not just how it seems.

Transfigured realism [Spencer writes, merely asserts that] while *some* objective existence, manifested under *some* conditions, remains as the final necessity of thought, there does not remain the implication that these conditions are more to us than the unknown correlatives of our feelings and of the relations among our feelings.⁷⁰

He is eager to point out, and does so throughout the *Psychology*, that it is only form which can be described, compared and contrasted, never content. The last sentence of the analytic part of his treatise speaks of an '*Unknowable Reality* hidden under all these changing shapes' (my italics).⁷¹

It would be too much to suggest that Spencer, in addition to vaguely echoing Kant, or perhaps anticipating Wittgenstein in these rather mystical passages, also anticipates the 'holistic' or 'hermeneutic' epistemologies of Sellars⁷² and Rorty.⁷³ Yet in some ways his epistemology lends itself to such an interpretation. Spencer's major thesis, we recall, envisages a movement from an 'indefinite, incoherent homogeneity to a relatively definite, coherent heterogeneity . . .'. We can see that it would, therefore, have been possible for him to agree with Sellars that we may well be mistaken in supposing that the pre-linguistic child already exists in our familiar world of 'physical objects, coloured, producing sounds, existing in Space and Time'⁷⁴ and that, consequently, to 'know what redness is' presupposes a great deal of other knowledge,⁷⁵ and it would have been possible for him to say with Rorty that 'we will not be able to isolate basic elements except on the basis of a prior knowledge of the whole fabric within which these elements occur.'⁷⁶ However, although we can see that Spencer *could* have argued in this way he does not, in fact, seem to have done so in the pages of the *Psychology*. Nowhere does he

⁶⁹H. Spencer, *The Principles of Psychology*, 2nd edn, Vol. 1 (London: Williams and Norgate, 1870), p. 157.

⁷⁰Spencer, *op. cit.* note 32, p. 494.

⁷¹*Ibid.*, p. 503.

⁷²W. Sellars, 'Empiricism and the Philosophy of Mind', in *Science, Perception and Reality* (London: Routledge and Kegan Paul, 1963).

⁷³R. Rorty, *Philosophy and the Mirror of Nature* (Oxford: Basil Blackwell, 1980).

⁷⁴Sellars, *op. cit.* note 72, p. 161.

⁷⁵*Ibid.*, p. 164.

⁷⁶Rorty, *op. cit.* note 73, p. 319.

push his thesis through to the level of the raw feels themselves. He is prepared to argue that constellations of raw feels evolve in the way described by his evolutionary law, but he remains sufficiently a nineteenth-century scientific empiricist to believe that psychology, like physics, must be grounded in isolable, observer-neutral, elements.⁷⁷ The 'given', for Spencer, is very far from being a 'myth'; although 'indescribable' it forms the bedrock on which he hoped to found a lasting and universal psychology. He would not have been amused at the 'punctuated equilibria', the 'revolutionary episodes', the 'paradigm shifts' and the relativisms of twentieth-century thought.

Spencer's location in the nineteenth-century is also shown by the consonance of his 'transfigured realism' with the sensory physiology of Johannes Müller and his pupil, Spencer's contemporary, Hermann Helmholtz. Both these workers had emphasized that neurophysiological events were very unlike, both quantitatively and qualitatively, the sensory stimuli from which they arose.⁷⁸ Spencer was well aware of this contemporary neurophysiology. He is clear that events in the brain are only symbolic of events in the world. Furthermore he fully recognized that although he accepted a psychoneural (or, as he phrased it, aestho-physiological) identity theory, the identity was very difficult to pin down. 'Each individual' he writes 'is absolutely incapable of knowing any other feelings than his own.'⁷⁹ Second, it is only an inference that he himself and the other humans he meets in everyday life have central nervous systems. Third, from the rather lengthy trains of inference from pathology and the frog laboratory, the 'reader imagines a nervous system contained in his own body, and concludes that his sensations and emotions are due to disturbances which the outer world sets up at its periphery, and arouses by indirect processes in its centres.'⁸⁰ All this analysis is quite overlooked in 'crude realism'. That 'redness' exists outside the mind, Spencer writes, is 'as hard for the psychologist to entertain as its opposite is for the uncultivated'.⁸¹

⁷⁷These elements, according to the account in the second and later editions of the *Psychology*, are 'nervous shocks' such as the experience of a flash of light, a sudden noise, or an electric shock. These are the universal primordia (in animals and men) from which more complex feelings and ultimately emotions are evolved (see *Psychology*, Vol. 1, pp. 148–54). Indeed 'redness' or 'C sharp major' are, according to Spencer, built from these elementary units. His approach, throughout, is an engineering approach: to build up from elementary units, not to work down from the whole and to conceive that by a process of 'downward causation' (to use D. T. Campbell's term) the elements may be determined by the organization in which they find themselves.

⁷⁸In his 1878 address to the Friedrich Wilhelm University in Berlin Helmholtz says that 'what physiological investigations now show is that the deeply incisive difference (between sense modalities such as blue, sweet, warm, high-pitched) does not depend, in any manner whatsoever, upon the kind of external impression whereby the sensation is excited, but is determined alone and exclusively, by the sensory nerve upon which the impression impinges.' The address is to be found in *Boston Studies in the Philosophy of Science*, Vol. XXXVII, *Hermann von Helmholtz: Epistemological Writings*, R. S. Cohen and M. W. Wartowsky (eds.) (Dordrecht/Boston: Reidel, 1977).

⁷⁹Spencer, *op. cit.* note 69, p. 99.

⁸⁰*Ibid.*, p. 100.

⁸¹*Ibid.*, p. 205.

Unlike more recent developmental epistemologists⁸² Spencer bases his theory on a prior philosophical analysis. Whatever one may think of the Universal Postulate, it is clear that Spencer had at least attempted to secure the foundations of his *Psychology*. He has not, in his account of the ontogenetic origin of the categories of 'subject' and 'object', merely assumed the realist position. He has made a prior philosophical analysis to establish that our conviction of the existence of an 'external' world is more certain than any other belief, especially those arrived at by complicated metaphysical arguments. At the same time he argued for the incorrigibility of 'raw feels'. These, too, constituted 'knowledge of the highest validity', knowledge of which the negation was inconceivable. But Spencer has no wish to equate the one with the other. He has no wish to say that the world is in fact a congeries of raw feels. He is very much aware of the argument from illusion: similar raw feels do not always signify the same 'external' happening. Raw feels do not 'picture' but only *symbolize* the world 'outside': Helmholtz was later to insist on the same point.

Spencer's understanding of the nature of universal truths, that other 'knowledge of the highest validity', is somewhat similar. As he had written in his 1853 article on the Universal Postulate, universal truths are to be distinguished from particular truths only by the fact that their antecedents are present on all occasions. We can no more be mistaken in believing that the sum of the lengths of two sides of a triangle are greater than the third, or that the whole is greater than its parts, than we can be mistaken about a raw feel such as redness. This may strike the modern reader as an invalid conflation. We are very familiar, nowadays, with the separation of the mathematical and the physical worlds. Famously, Russell commented that mathematics is the subject in which nobody knows what he is talking about or whether what he is saying is true or not. But Spencer lived in a pre-Einsteinian world. He was not aware of the new geometries which Bolyai and Lobachewsky had discovered in 1823. He still lived in the commonsense world described by Euclid. He was able to argue, therefore, that mathematical knowledge is ultimately derived from 'raw feels'. In a minor sense he followed Plato in believing that such knowledge is implanted before birth. But in a more important sense he differed from him by insisting that this implantation was entirely a 'this-worldly' phenomenon. It occurred during phylogeny. The incorrigibility of universal truths is due not only to the experience of their invariable occurrence during ontogeny but, and more importantly, due to their invariable occurrence during phylogeny. It is not only that no individual has ever stumbled across an exception to, say,

⁸²Piaget, for example, customarily treats epistemology as a discipline within empirical psychology: see the essays in J. Piaget, *Psychology and Epistemology* (Harmondsworth: Penguin, 1972).

Spencer's triangle example, or that all 'effects' are preceded by 'causes', it is not even that no individual from Plato and Parmenides onwards has ever been presented with an exception, but that no organism in the aeons of evolutionary time has ever encountered a contrary instance.⁸³ The notions of 'space', 'boundary', 'corner', 'distance' *etc.* are all fixed, ineradicably, from far back before the origin of *Homo sapiens*, in the long struggle for survival of organic evolution. Euclid's geometry summarizes the billion-year experience of the species' evolution; it represents the selected outcome of an infinity of 'raw feels'; and, by this token, it still stands only in symbolic relation to the world 'outside' which remains 'an unknown and unknowable reality'.⁸⁴

Spencer can thus plead 'not guilty' to the usual accusation levelled at evolutionary epistemologists.⁸⁵ For it is commonly said that such epistemologies beg the philosophical question. It is pointed out that to come at the idea of evolution, of development, of biology, of science itself we have to use the very ideas of line, space, length, angle *etc.* which we are seeking to account for. Are we not merely assuming the consequent, attempting to derive the tools of our thought from a theory which it required those very same tools to construct? Are we not, to use the classical figure, attempting to propel our ship by puffing at its sail? We seem to be confronted with the same instability which threatens the whole of Spencer's philosophical psychology. It appears, as T. H. Green pointed out with some vehemence,⁸⁶ that Spencer is arguing that we can be conscious of something which is 'out of consciousness'. But, as we have seen, Spencer rests his case on the Universal Postulate. Single uses of the Postulate reveal the 'phenomenological field' and disclose two different classes of event. We have learnt to call these two classes of event the 'mental' and the

⁸³Spencer, *op. cit.* note 32, p. 419: 'Hence the inconceivableness of the negation of a mathematical axiom, resulting as it does from the impossibility of inverting the actions of correlative nervous structures, really stands for the infinity of experiences that have developed these structures.'

⁸⁴*Ibid.*, p. 503.

⁸⁵Campbell points out that epistemologies of this type can be called variously 'descriptive', 'naturalistic' or 'Copernican' to emphasize their difference from the traditional analytic epistemologies of Descartes, Berkeley, Kant *etc.* The naturalistic epistemologies attempt to solve a very different problem from that which exercises the traditionalists. They start, not by working outwards from the epistemologist's consciousness as 'the creator and centre of the natural world', but by simply assuming that we have knowledge (the very point which the traditionalists attempt to prove or disprove) and that this knowledge shows man to be part of the natural world and the evolutionary process as described by the dominant science of the day. The problem for the naturalistic epistemologists is thus a problem within science. See D. T. Campbell, in F. J. Ayala and T. Dobzhansky, *Studies in the Philosophy of Biology* (London: Macmillan, 1974), pp. 139–42.

⁸⁶T. H. Green, 'Mr. Herbert Spencer and Mr. G. H. Lewes: Their Application of the Doctrine of Evolution to Thought, 1: Mr. Spencer on the Relation of Subject and Object', *Contemporary Review* 31 (1877), 25–53. Green writes that 'It appears that the very ground asserted for the "reality of something out of consciousness" implies that this "something" is not "out of consciousness" and that the very proposition which is intended to state its outsideness to consciousness in fact states the contrary.' Green found this a straightforward contradiction and accuses Spencer of blinding his readers 'through three-fourths of the book' with a synthetic

'physical'. Spencer would have agreed with Heidegger's observation: '. . . a bare subject without a world never "is" proximally, nor is it ever given.'⁸⁷ Argument, especially metaphysical argument, is pointless: we are obliged to accept what presents itself.

Conclusion

In the second edition of the *Psychology* Spencer remarks that if he were forced to choose between deriving matter from mind or mind from matter he would be bound to choose the former.⁸⁸ In this he resembles his fellow 'materialists' of the English mid-nineteenth-century — Tyndall and Huxley.⁸⁹ All three agree that consciousness, the individual thinker's consciousness, is primary. Spencer, however, being of a more philosophical temperament than the others tries hard to find an argument to show that though we may be prisoners within the boundaries of our own consciousness, yet we are obliged to assume an 'external' reality. The 'Universal Postulate' which Spencer first published in 1853 and which reappears, scarcely changed, as a chapter in all the editions of the *Psychology* shows, according to its author, that all positions other than 'Transfigured Realism' are self-destructive.

Spencer's epistemological position, although worked out on a wider front and in greater depth, is fully in accord with that of contemporary European physiologist – philosophers. Du Bois-Reymond believed that we can never know the true nature of the 'external world', the terms 'force' and 'matter' merely symbolize an unknowable reality.⁹⁰ In addition he believed that the relationship between neurophysiology and consciousness was similarly a problem to which the answer could only be *ignoramus . . . ignoramibus*, a conclusion which C. S. Sherrington later warmly applauded.⁹¹ Helmholtz, too, account of how thought is generated from things only to make transparent logical blunders when he arrives at the analytical philosophy. But Green had evidently only read a second or subsequent edition. For, as we have seen, the genesis of the *Psychology* is to be found in the 'Universal Postulate', a detailed discussion of the epistemologies of Reid, Hamilton, Mill, Whewell, Berkeley, Hume, Kant and Mansell and this analysis forms the *first* section of the first edition of the *Psychology*. Green's criticisms may very well have applied to Helmholtz with his talk of 'impressions impinging on sensory nerves' (see above) but are incorrectly directed at Spencer whose treatise was based on the Archimedean point already established (to his satisfaction) in the Universal Postulate.

⁸⁷Heidegger, *op. cit.* note 45, p. 152.

⁸⁸Spencer, *op. cit.* note 69, p. 159: '. . . it may be well to say here, once for all, that were we compelled to choose between the alternatives of translating mental phenomena into physical phenomena, or of translating physical phenomena into mental phenomena, the latter alternative would seem to be the more acceptable of the two.'

⁸⁹T. H. Huxley, for instance, writes that 'all our knowledge is a knowledge of states of consciousness. "Matter" and "Force" are, as far as we can know, mere names for certain forms of consciousness', 'On Descartes "Discourse Touching the Method of Using One's Reason Rightly and of Seeking Scientific Truth"', 1870, in *Method and Results* (London: Macmillan, 1898).

⁹⁰E. du Bois-Reymond, *Ueber die Grenzen des Naturerkennes* (Leipzig, 1872).

⁹¹C. S. Sherrington, *Integrative Activity of the Nervous System*, 2nd edn (Cambridge: Cambridge University Press, 1947), Introduction, p. xxiv; also *idem.*, *Man on His Nature* (Harmondsworth: Penguin, 1955), chap. 9.

as we have already noticed, had concluded that our senses only provide us with 'signs' of an external world. His great work in sensory physiology had convinced him (so he argued) that our senses transform external energies, both quantitatively and qualitatively, into a totally different currency.⁹² The world, at best, could only bear a formal resemblance to how it seemed. Spencer had evidently absorbed this neurophysiology and had constructed his system so that it was fully consistent with it.

Where Spencer goes beyond the neurophysiologists is in his use of evolution theory. This was alien to nineteenth-century neurophysiology which, as several commentators have remarked,⁹³ emerges directly from a Cartesian – mechanistic tradition. Spencer's *Psychology*, on the contrary, is organically related to the epigenetics which he had learnt from his early reading of the embryologists. 'The doctrine of evolution' (by which he meant epigenesis) is, as he says, 'everywhere implied in it'.⁹⁴ He was fully justified in insisting that the 1855 edition of *The Principles of Psychology* pioneered this approach. Moreover, as with his use of nineteenth-century neurophysiology, Spencer's evolutionary psychobiology was developed with an eye to philosophical implications and the larger issues which hardly troubled his more specialist contemporaries.⁹⁵

Thus it is possible to draw a concluding parallel between Descartes and Spencer. Bertrand Russell suggests that in Descartes the new physics and astronomy of the seventeenth-century first break-through into the world of philosophy.⁹⁶ Without beginning to suggest that the force of Spencer's intellect is in any way comparable to that of Descartes we may nevertheless observe that in the former's *Psychology*, in a somewhat similar way, nineteenth-century evolutionary thought first breaks through into philosophy. Instead of being set

⁹²Von Helmholtz, *op. cit.* note 78, p. 122: 'Inasmuch as the quality of our sensation gives us a report of what is peculiar to the external influence by which it is excited, it may count as a symbol of it, but not an *image*. For from an image one requires some kind of likeness with the object of which it is an image — from a statue likeness of form, from a drawing likeness of perspective projection in the visual field, from a painting likeness of colours as well. But a sign need not have any kind of similarity at all with what it is a sign of.'

⁹³See, for instance, J. H. Woodger, *Biological Principles: a Critical Study* (London: Routledge and Kegan Paul, 1967), p. 48: 'Descartes' physiology of the nervous system has served as the foundation for all that has since been done in the interpretation of that system, and the modern view has *in principle* departed but little from the lead that Descartes gave it.' T. H. Huxley said much the same in 1874 in his essay 'On the Hypothesis that Animals are Automata and its History', in *Method and Results, op. cit.* note 89, p. 201.

⁹⁴Spencer, *op. cit.* note 69, Preface.

⁹⁵Indeed as the nineteenth-century drew to a close Spencer became increasingly isolated. His synthetic endeavour was derided by those who devoted themselves to the specialisms. At the beginning of the twentieth-century the development of behaviourist, stimulus – response, psychology began to gather momentum and Spencer's philosophical concerns began to seem very old-fashioned. Nonetheless although Spencer's *Psychology* seems to have had very little overt influence its covert influence has been considerable. I have examined this in 'Evolution and the Problem of Mind: Part 2. John Hughlings Jackson', *J. Hist. Biol.* 15 (1982), 241 – 62.

⁹⁶B. Russell, *The History of Western Philosophy* (London: George Allen and Unwin, 1948), p. 580.

over nature as a steward and spectator whose real interests lie elsewhere, man is now understood to be part of nature, the most recent product of the evolutionary travail. Instead of truth being implanted before birth to act as a standard by which all beliefs might be judged it becomes merely 'knowledge of the highest validity', emerging from an evolutionary contest of strength (either ontogenetically or phylogenetically) where only 'the fittest survive'. Similarly, instead of perception and cognition being likened to optics, a mirroring of the 'external world', Spencer compares them to the embryological process which he had learnt from Goethe, Wolff and, most importantly, from von Baer. It is this thorough impregnation with evolutionary thought which makes Spencer's epistemology, in spite of its seeming inconsistencies, out-of-date language and obsolete science, worth pondering in a modern context with its newly-found interest in evolutionary epistemology.