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Gillian Beer

Excerpt

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Introduction

I THE REMNANT OF THE MYTHICAL

Most major scientific theories rebuff common sense. They call on evidence beyond the reach of our senses and overturn the observable world. They disturb assumed relationships and shift what has been substantial into metaphor. The earth now only *seems* immovable. Such major theories tax, affront, and exhilarate those who first encounter them, although in fifty years or so they will be taken for granted, part of the apparently common-sense set of beliefs which instructs us that the earth revolves around the sun whatever our eyes may suggest. When it is first advanced, theory is at its most fictive. The awkwardness of fit between the natural world as it is currently perceived and as it is hypothetically imagined holds the theory itself for a time within a provisional scope akin to that of fiction. Throughout the 1850s and well into the 1860s, for example, evolutionary theory was commonly referred to as 'the Development Hypothesis'.

In *The Structure of Scientific Revolutions* Kuhn discusses this phase in the conception and reception of a new scientific idea:

Discovery commences with the awareness of anomaly, i.e. with the recognition that nature has somehow violated the paradigm-induced expectations that govern normal science. It then continues with a more or less extended exploration of the area of anomaly. And it closes only when the paradigm theory has been adjusted so that the anomalous becomes the expected. Assimilating a new sort of fact demands a more than additive adjustment of theory, and until that adjustment is completed – until the scientist has learned to see nature in a different way – the new fact is not quite a scientific fact at all.¹

A hundred years earlier Claude Bernard in his *Cahier Rouge* had noted that science proceeds by revolution and not by addition pure and simple.² This revolution must take place not only in the minds of scientists but in the beliefs of other inhabitants of the same culture if the theory

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is to reach its full authority – an authority which rests upon an accepted congruity between theory and nature. The willed, half-consciously fictive and incomplete nature of hypothesis is touched on by Mackay in *The Progress of the Intellect* which George Eliot reviewed for the *Westminster Review* in January 1851. She there chose the following passage from his chapter ‘The Mediation of Philosophy’ as part of an extract to show him at his best. Mackay is arguing about the relationship between myth and science:

A remnant of the mythical lurks in the very sanctuary of science. Forms or theories ever fall short of nature, though they are ever tending to reach a position above nature, and may often be found to include more than the maker of them at the time knew.³

In its imaginative consequences for science, literature, society and feeling, *The Origin of Species*⁴ is one of the most extraordinary examples of a work which included more than the maker of it at the time knew, despite all that he *did* know.

In this study I shall explore some of the ways in which evolutionary theory has been assimilated and resisted by novelists who, within the subtle enregisterment of narrative, have assayed its powers. With varying degrees of self awareness they have tested the extent to which it can provide a determining fiction by which to read the world. The book is concerned with Victorian novelists living, in relation to evolutionary theory, in the phase when ‘a fact is not quite a scientific fact at all’ and when ‘the remnant of the mythical’ is at its most manifest. I shall analyse works by writers as various in their responses as Kingsley, George Eliot and Hardy. But evolutionary ideas are even more influential when they become assumptions embedded in the culture than while they are the subject of controversy. As Barry Barnes writes in *Scientific Knowledge and Sociological Theory*:

A successful model in science frequently moves from the status of an ‘as if’ theory to a ‘real description’. From here it may develop into a cosmology, before eventual disintegration into a mass of techniques and procedures, wherein what were key theoretical conceptions become mere operators, the ontological status of which is scarcely given a thought, (c.f. force, temperature, frequency).⁵

That process of naturalisation is the other major topic of my enquiry. We pay Darwin the homage of our assumptions. Precisely because we live in a culture dominated by evolutionary ideas, it is difficult for us to recognise their imaginative power in our daily readings of the world. We need to do so.

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In the earlier chapters of this study I shall analyse some of the problems Darwin faced in precipitating his theory as language. He sought to appropriate and to recast inherited mythologies, discourses, and narrative orders. He was telling a new story, against the grain of the language available to tell it in. And as it was told, the story itself proved not to be single or simple. It was, rather, capable of being extended or reclaimed into a number of conflicting systems.⁶

In speaking of evolutionary theory I take as my focus the work of Darwin, though in the course of my argument I shall give some account of other writers such as Lamarck, Lyell, and Robert Chambers whose earlier writings had contributed to the acceptance of evolutionary ideas.⁷ I concentrate on Darwin partly because his appreciation of the means through which change, development, and extinction of species took place was to revolutionise our understanding of natural order (though when his book first came out it was not immediately obvious to all that his work did more than substantiate and give authority to ideas already current). A second reason for focusing sharply on *The Origin of Species* is that it was widely and thoroughly *read* by his contemporaries. Reading *The Origin* is an act which involves you in a narrative experience. The experience may seem to diverse readers to be tragic (as postulated by Jacques Barzun) or comic (as Dwight Culler argues) but it is always subjective and literary.⁸

Related to this question of focus is another, of evidence. Perhaps I can best express it by an analogy. We now live in a post-Freudian age: it is impossible, in our culture, to live a life which is not charged with Freudian assumptions, patterns for apprehending experience, ways of perceiving relationships, even if we have not read a word of Freud, even – to take the case to its extreme – if we have no Freudian terms in either our active or passive vocabulary. Freud sufficiently disrupted all possible past patterns for apprehending experience and his ideas have been so far institutionalised that even those who query his views, or distrust them, find themselves unable to create a world cleansed of the Freudian. This was the nature also of Darwin's influence on the generations which succeeded him. Everyone found themselves living in a Darwinian world in which old assumptions had ceased to *be* assumptions, could be at best beliefs, or myths, or, at worst, detritus of the past. So the question of who read Darwin, or whether a writer had read Darwin, becomes only a fraction of the answer. The related question of whether the reader had read Darwin turns out also to have softer edges than might at first appear. Who had read what does not fix limits. On

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the face of it, then, a very generous use of evidence would have been possible for this study, which would see it as inevitable that all writers were affected by such theory. This would have permitted me to point out analogies of theme and order in almost anyone I chose.⁹ But although I do not believe that this would be an improper enterprise, it seems to me to be in one sense an insufficient one, because it does not take account of the *act of reading* and reaction.

Reading creates uncertainty as well as satisfaction. As Richard Ohmann remarks:

The very act of predication is an emotional act, with rhythms of its own. To state something is first to create imbalance, curiosity, where previously there was nothing, and then to bring about a new balance. So prose builds on the emotional force of coming to know, of pinning down part of what has previously been formless and resolving the tensions which exist between the human organism and unstructured experience.¹⁰

One's relationship to ideas depends significantly on whether one has read the works which formulate them. Ideas pass more rapidly into the state of assumptions when they are *unread*. Reading is an essentially question-raising procedure. This is one reason why in this study I have limited close discussion to the work of novelists whom we know to have read Darwin, and usually Lyell, Spencer and Huxley as well. I want to track the difficult flux of excitement, rebuttal, disconfirmation, pursuit, forgetfulness, and analogy-making, which together make up something of the process of assimilation.

In the mid-nineteenth century, scientists still shared a common language with other educated readers and writers of their time. There is nothing hermetic or exclusive in the writing of Lyell or Darwin. Together with other scientific writers such as G. H. Lewes, Claude Bernard, John Tyndall, W. K. Clifford, and even so far as his early work is concerned Clerk Maxwell (writers whose works ranged through psychology, physiology, physics and mathematics), they shared a literary, non-mathematical discourse which was readily available to readers without a scientific training. Their texts could be read very much as literary texts. In our own century scientific ideas tend to reach us by a process of extrapolation and translation. Non-scientists do not expect to be able to follow the mathematical condensations of meaning in scientific journals, and major theories are more often presented as theorems than as discourse. We unselfconsciously use the term 'layman' to describe the relationship of a non-scientist to the body of scientific knowledge. The

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suggestion of a priestly class and of reserved, hermetic knowledge goes mostly unremarked. In the mid-nineteenth century, however, it was possible for a reader to turn to the primary works of scientists as they appeared, and to respond directly to the arguments advanced. Moreover, scientists themselves in their texts drew openly upon literary, historical and philosophical material as part of their arguments: Lyell, for example, uses extensively the fifteenth book of Ovid's *Metamorphoses* in his account of proto-geology, Bernard cites Goethe repeatedly, and – as has often been remarked – Darwin's crucial insight into the mechanism of evolutionary change derived directly from his reading of Malthus's essay *On Population*. What has gone unremarked is that it derived also from his reading of the one book he never left behind during his expeditions from the *Beagle*: *The Poetical Works of John Milton*.¹¹ The traffic, then, was two-way. Because of the shared discourse not only *ideas* but metaphors, myths, and narrative patterns could move rapidly and freely to and fro between scientists and non-scientists: though not without frequent creative misprision.

The second premise of my argument is that evolutionary theory had particular implications for narrative and for the composition of fiction. Because of its preoccupation with time and with change evolutionary theory has inherent affinities with the problems and processes of narrative. 'There is not one great question relating to the former changes of the earth and its inhabitants into which considerations of time do not enter,' wrote Lyell in *The Principles of Geology* (1830, I:302).¹² And although Lyell at this time still believed in the fixity of species his exploration of an infinitely extended time-scale for the earth was one of the necessary preconditions of later theory. When Lyell wanted to point out how too short an imagined time-scale had misled geologists into a catastrophist view of the past, he did it by invoking the metaphor of romance time as opposed to historical time:

How fatal every error as to the quantity of time must prove to the introduction of rational views concerning the state of things in former ages, may be conceived by supposing that the annals of the civil and military transactions of a great nation were perused under the impression that they occurred in a period of one hundred instead of two thousand years. Such a portion of history would immediately assume the air of a romance; the events would seem devoid of credibility, and inconsistent with the present course of human affairs. A crowd of incidents would follow each other in thick succession. Armies and fleets would appear to be assembled only to be destroyed, and cities built merely to fall in ruins. (I:78–9)

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As in *Tristram Shandy*, the pace of record and of event are here fatally at odds. Uncle Toby and Trim must build up and knock down their fortifications within the hour to catch up with the events in France. Geologists, too parsimonious of time, are obliged to imagine a world governed by catastrophic events which prepare for present tranquillity.

Evolutionary theory is first a form of imaginative history. It cannot be experimentally demonstrated sufficiently in any present moment. So it is closer to narrative than to drama. Indeed in the then current state of genetic knowledge many of the processes of inheritance were beyond explanation. The rediscovery of Mendel's experiments took place after Darwin's death. It took a century before the discovery of DNA demonstrated the organism as a structural narrative programmed to enact itself through time.¹³ Evolutionary ideas proved crucial to the novel during that century not only at the level of theme but at the level of organisation. At first evolutionism tended to offer a new authority to orderings of narrative which emphasised cause and effect, then, descent and kin. Later again, its eschewing of fore-ordained design (its dysteleology) allowed chance to figure as the only sure determinant. On the other side, the organisation of *The Origin of Species* seems to owe a good deal to the example of one of Darwin's most frequently read authors, Charles Dickens, with its apparently unruly superfluity of material gradually and retrospectively revealing itself as order, its superfecundity of instance serving an argument which can reveal itself only *through* instance and relations.

Evolutionary ideas shifted in very diverse ways the patterns through which we apprehend experience and hence the patterns through which we condense experience in the telling of it. Evolutionism has been so imaginatively powerful precisely because all its indications do not point one way. It is rich in contradictory elements which can serve as a metaphorical basis for more than one reading of experience: to give one summary example – the 'ascent' or the 'descent' of man may follow the same route but the terms suggest very diverse evaluations of the experience. The optimistic 'progressive' reading of development can never expunge that other insistence that extinction is more probable than progress, that the individual life span is never a sufficient register for change or for the accomplishment of desire, an insistence which has led one recent critic to characterise Darwinian theory as a myth of death.¹⁴

Darwinian theory will not resolve to a single significance nor yield a single pattern. It is essentially multivalent. It renounces a Cartesian clarity, or univocality. Darwin's methods of argument and the generative

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metaphors of *The Origin* lead, as I shall demonstrate later, into profusion and extension. The unused, or uncontrolled, elements in metaphors such as 'the struggle for existence' take on a life of their own. They surpass their status in the text and generate further ideas and ideologies. They include 'more than the maker of them at the time knew'. The world Darwin proposes can be felt as either plenitude or muddle. Darwin was much wounded by Herschel's description of his theory as 'the law of higgledy-piggledy',¹⁵ but the phrase exactly expresses the dismay many Victorians felt at the apparently random – and so, according to their lights, trivialised – energy that Darwin perceived in the natural world.

Darwinian theory takes up elements from older orders and particularly from recurrent mythic themes such as transformation and metamorphosis. It retains the idea of *natura naturans*, or the Great Mother, in its figuring of Nature. It rearranges the elements of creation myths, for example substituting the ocean for the garden but retaining the idea of the 'single progenitor' – though now an uncouth progenitor hard to acknowledge as kin. It foregrounds the concept of kin – and aroused many of the same dreads as fairy-tale in its insistence on the obligations of kinship, and the interdependence between beauty and beast. Many Victorian rejections of evolutionary ideas register a physical shudder. In its early readers one of the lurking fears it conjured was miscegeny – the frog in the bed – or what Ruskin called 'the filthy heraldries which record the relation of humanity to the ascidian and the crocodile'.¹⁶ In its insistence on chance as part of a deterministic order it perturbed in the same mode as *The Arabian Nights* – though more profoundly, because claiming the authority of science not exotic fiction. The pip thrown over the shoulder strikes the Grand Genie and vengeance ensues. Such tales – and *The Arabian Nights* was at the height of its imaginative influence at that period so that, for example, we find George Eliot one evening enjoying 'music, *Arabian Nights*, and Darwin' – rouse some of the same elated dread as the idea of minute random mutations with their uncontrollable consequences.¹⁷ But Darwin's theories did not pleasurably assuage the dreads.

One of the persistent impulses in interpreting evolutionary theory has been to domesticate it, to colonise it with human meaning, to bring man back to the centre of its intent. Novelists, with their particular preoccupation with human behaviour in society, have recast Darwin's ideas in a variety of ways to make them seem to single out man. In *The Origin of Species* (1859) man is a determining absence, for reasons that I

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shall analyse in the succeeding chapters. In *The Descent of Man* (1871) man in all his varieties is the topic. The first is a work primarily of biology, the second of anthropology: together they form the substantial statement of Darwin's published views on evolution. Darwin's is a theory of descent as well as of adaptation: in *The Origin* he concentrated on the mechanism of 'natural' (that is, non-human and unwilling) 'selection' in creating change. In *The Descent*¹⁸ he concentrates on the powers of sexual selection: this concentration brings back into the discussion the ideas of will and culture which are notably and deliberately excluded in *The Origin*. Women and men became his problem.

The power of Darwin's writing in his culture is best understood when it is seen not as a single origin or 'source', but in its shifting relations to other areas of study. As Darwin's notebooks, reading-lists, library, and annotations all show, he was immensely alive to concurrent work in a range of disciplines, including not only other directly scientific work but history, historiography, race-theory, psychology, and literature. The problems raised by his writing often manifest themselves most acutely when they are transferred into another field. Equally, his work was profoundly affected by common concerns. An ecological rather than a patriarchal model is most appropriate, therefore, in studying his work.

Darwinian theory has, then, an extraordinary hermeneutic potential – the power to yield a great number of significant and various meanings. In the course of this study I shall show how differing individual and cultural needs have produced deeply felt, satisfying, but contradictory interpretations of its elements. It is, therefore, important at the outset to emphasise that it cannot be made to mean *everything*. Disraeli's satire on Chambers's *Vestiges of Creation*, in *Tancred* where it is renamed 'The Revelations of Chaos', could not apply to Darwin.¹⁹ Of 'The Revelations of Chaos' it is said: 'It explains everything, and is written in a very agreeable style.' Darwinian theory, on the contrary, excludes or suppresses certain orderings of experience. It has no place for *stasis*. It debars return. It does not countenance absolute replication (cloning is its contrary), pure invariant cycle, or constant equilibrium. Nor – except for the extinction of particular species – does it allow either interruption or conclusion.

II 'THE SECOND BLOW'

In 'A Difficulty in the Path of Psycho-Analysis' (1917) Freud comments that 'the universal narcissism of men, their self-love, has up to the present

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suffered three severe blows from the researches of science'. These three blows he names the *cosmological*, associated with Copernican theory, the *biological*, associated with Darwinian theory, and the *psychological*, associated with psychoanalytic theory.

In the course of the development of civilization man acquired a dominating position over his fellow-creatures in the animal kingdom. Not content with this supremacy, however, he began to place a gulf between his nature and theirs. He denied the possession of reason to them, and to himself he attributed an immortal soul, and made claims to a divine descent which permitted him to break the bond of community between him and the animal kingdom . . . We all know that little more than half a century ago the researches of Charles Darwin and his collaborators and forerunners put an end to this presumption on the part of man. Man is not a being different from animals or superior to them; he himself is of animal descent, being more closely related to some species and more distantly to others.²⁰

Freud's formulation of man's dilemma is itself mythopoeic. (Joan Riviere's earlier translation further emphasises this by rendering the 'three blows' as the 'three wounds'.) He reserves to himself the position of youngest brother in this trio of giants (Copernicus, Darwin, Freud), inflicting a double blow: 'The third blow, which is psychological in nature, is probably the most wounding':

these two discoveries – that the life of our sexual instincts cannot be wholly tamed, and that mental processes are in themselves unconscious and only reach the ego and come under its control through incomplete and untrustworthy perceptions – these two discoveries amount to a statement that *the ego is not master in its own house*. Together they represent the third blow to man's self-love . . .²¹

Freud's assertion arrests history. The magical number three belies the possibility of a fourth great wound. Comte had used a similar absolutist numerology in his account of human thought and civilisation, an account whose influence was felt throughout the second half of the nineteenth century:²² first the theological stage, then the metaphysical, and now the positive. This coming to rest in the number three, endowing the present with a special authority and permanence, is evident in many nineteenth-century orderings of knowledge. Claude Bernard described the three phases of the history of medicine, according to a system which clearly draws on Comte, as the theological, the empirical and the scientific. T. H. Huxley, in his lectures on Evolution, asserts, 'There are three hypotheses which may be entertained, and which have been entertained, respecting the past history of life upon the globe.' The first is that:

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living beings, such as now exist, have existed from all eternity upon this earth . . . the second hypothesis . . . I termed the Miltonic hypothesis . . . according to the third hypothesis, or that of evolution, the existing state of things is the last term of a long series of states, which, when traced back, would be found to show no interruption and no breach in the continuity of natural causation.²³

For Huxley the present state of things is 'the last term' and even Marx, in whose system eschatology and the future are essential, uses the same triple ordering of history which in most such systems stills the past into the present order.

These examples show one of the difficulties on the path of evolutionary theory. It is a theory which does *not* privilege the present, which sees it as a moving instant in an endless process of change. Yet it has persistently been recast to make it seem that all the past has been yearning towards the present moment and is satisfied now. Since Freud wrote, one might argue, quantum physics has dealt another and yet more radical blow at man's narcissism because it has brought into question the fixed causal relations, 'the continuity of natural causation' which underpinned, in particular, nineteenth-century scientific explanation and, more generally, the activities of human reason.

Freud's formulation, however, pinpoints two particular elements in mid-nineteenth-century creative experience. One was the absence of an analytical and denotative vocabulary for describing the activities of the unconscious and subconscious. This meant that it remained possible to believe that the ego was master in its own house, capable of choice, command and control. At the same time there was a growing fascination with the reaches of experience beyond the domain of reason, a fascination which expressed itself in that oceanic richness in the use of symbol typical of Victorian prose. Symbol and metaphor, as opposed to analysis, can allow insight without consequences because perceptions are not stabilised and categorised. They allow us fleetingly to inhabit contradictory experience without moralising it. The Victorians were free from that rapid awareness of what images signify, which may, and in a post-Freudian world frequently does, hamper impulse and expression. Freud himself acknowledged the extent to which he had been educated towards analysis by Victorian fiction, and although mid-Victorian writers may not have been fully aware of the approaching *Götterdämmerung* for autonomous egos, they shared with Freud much of the same historical experience.

Crucial to that common historical experience was the weight of Darwin's blow. It is hard to overestimate the imaginative turmoil brought