Marxism and Scientific Socialism

From Engels to Althusser

Paul Thomas

Routledge Studies in Social and Political Thought

Marxism and Scientific Socialism

Engels declared at Marx's funeral in Highgate Cemetery that "just as Darwin discovered the law of development of organic nature, so Marx discovered the law of development of human history". Scientific socialism was the term Engels used to describe Marx's socio-economic philosophy and many later theorists sought to reinforce Marxist theory with a supposedly scientific basis.

This book explains the development of the idea of scientific socialism through the nineteenth and twentieth century from its origins in Engels to its last manifestation in the work of Althusser. It provides a detailed analysis of Engel's own conceptualization, the impact of Darwin, the relationship to the "official" historical materialism of the Soviet states and later reformulations by Althusser and others. In so doing it provides a vivid intellectual history of Marxist and socialist thought, exploring its significant insights as well its manifest failures.

Marxism and Scientific Socialism will be of particular interest to those with an interest in the development of Marxism and socialism, political ideologies and the history of Western political thought.

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This book is dedicated to those who have gone before. In memory of Richard Ashcraft, Eugene Lunn, Norman Jacobson, Gwylfa Roberts, Michael Rogin, Dita Shklar, Robbie Wokler.

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Preface

What's in a word?[1]

The German word *Wissenschaft* dates from the fourteenth century, when it was coined in order to translate the same Latin *sciens, scientia* from which the English term "science" was also derived. Nevertheless, *Wissenschaft* implies a more complex set of associations than does science *tout court*. To begin with, it carries with its translation of *scientia* an array of etymological connections via *wissen*, to know, to the old High German wíȝȝan and the old Anglo-Saxon *wita.* As a noun corresponding to *wissen*, *Wissenschaft* denotes rather than connotes the *ways* or *conduits* of knowing (as heard in English only with the archaic *wis*, to show the way or instruct, or *wist*, to know, and these scarcely survive at all). Knowledge as such, or *Erkenntnis*, does not by contrast necessarily suggest ways or conduits of knowing at all; nor does it have any necessary or specific connection with science.

The English word "science", by contrast with *Wissenschaft*, is not an Anglo-Saxon word even by extension. It is rooted in the Latin *scire*, to know, and is arguably also related to *scindere*, to cut or divide. As such, science is a word that has associations that are all its own. It has had its "non-Arts" designation only since the eighteenth century, prior to which science could mean artistry, technique, expertise or virtuosity (a usage that survives, as Babette Babich has impishly indicated,[2] in Minnesota Fats's boast that he has his game of pool "down to a science"; here, "fine art" could substitute for "science" directly, as it would have in the Middle Ages). While *Wissenschaft*, for its part, has, in modern German, increasingly come to share science's limiting focus on the mathematical or natural sciences, its usage to this very day remains much broader, much more comprehensive, than any such limiting focus might imply. The

1 Unpublished communication. My "Preface" is greatly indebted to Babette Babich. The reader is referred to her *Nietzsche's Philosophy of Science: Reflecting Science on the Grounds of Art and Life*, Albany, State University of New York Press, 1994, *passim*; "Nietzsche's Critique of Science and Scientific Culture", in G. Moore and T. Brobjer, eds, *Nietzsche and Science*, Aldershot, Avebury Press, 2003; and "Heidegger's Relation to Nietzsche's Thinking: Connivance, Nihilism and Value", *New Nietzsche Studies*, 3/3, 1999, pp. 23–52.

2 C.P. Snow, *The Two Cultures*, Cambridge, Cambridge University Press, 1959. Also New York, Mentor, 1964, *passim.*

Wildhagen-Héraucourt German-English Dictionary defines *Wissenschaft* initially as natural science, but then goes on immediately to define it as "learning, scholarship, erudition, and knowledge". *Wissenschaft*, that is to say, entails rigorous, systematic *pursuits* of knowledge in a variety of areas not coverable by the mathematical and natural sciences as these are understood in the English-speaking world.

If *Wissenschaft* once referred purely and simply to knowledge – as in Goethe's *davon hab' ich kein Wissenschaft* – it corresponds in more modern usage, then, to the collective pursuits of or paths to different kinds of knowledge. It is a more comprehensive term than science is usually taken to be. Accordingly, the Wahrig Dictionary defines *Wissenschaft* as "geordnetes, vollgerichtig, aufgebautes, zusammenhändiges Gebiet von Erkenntnissen", a more capacious understanding than most English definitions of science would entail. In keeping with this difference in catchment, the Shorter Oxford English Dictionary, in at least one of its editions, itself distinguishes science from *Wissenschaft*. The former is defined as "the state or fact of knowing; knowledge or cognizance of something specified or implied", the latter as "(the systematic pursuit of) knowledge, science, learning, scholarship". (In French, as we shall see, *la science*, according to any French-English Dictionary I know, means knowledge first, and science second.) *Wissenschaft* as reduced to the ordered, systematic disciplinary area of knowledge, of something specified rather than implied, corresponds only to the Shorter OED's last sub-entry: "The kind of organized knowledge or intellectual activity of which the various branches of learning are examples." For this and other reasons it is salutary to recall that Max Weber's celebrated address of 1919, "Wissenschaft als Beruf", is about what its title says it is about – not science in the narrower, English-language sense (which merely provides the most immediate hook on which to hang a translation) but *Wissenschaft*. This is why Weber's Address tells us so little about science as we have come to understand the term in English, and so much about academic life as a framework for the pursuit of a scholarly vocation or calling

In view of these differences, the sheer breadth of professional *Wissenschaften* in contemporary German usage should not surprise us. German academic fields of study can generally be expressed as so many *Wissenschaften*: *Musikwissenschaft*, *Literaturwissenschaft*, *Museumswissenschaft*, and *Kunstwissenschaft* may serve as examples. No-one before Wilhelm Dilthey (1833–1911) nailed down what was to become a key distinction between *Naturwissenschaften* and *Geisteswissenschaften*, a distinction that, while it overlaps with C.P. Snow's juxtaposition of the "two cultures", certainly cannot be mapped on to it with any exactness, since the term *Geisteswissenschaften* – spiritual sciences – will still have a peculiar ring to it in English. Even "human sciences" is a less common formulation in English than are *les sciences humaines* in French. (*Les sciences* are almost always pluralized in French, whereas science in English is most often put in the singular.)

But even if we know in advance that *Wissenschaften* at large cover more

ground than the activities conventionally marshalled under the banner of science in English, Friedrich Nietzsche's identification of himself as a man of science may still strike an English-speaker as odd, or as being a mere figure of speech. But it is neither. It was, to begin with, a literal description of Nietzsche's professional standing as a philologist, even though classical philology, a *Wissenschaft* among other *Wissenschaften* (as no German-speaker would have disputed) would hardly qualify as a science, as this term is and was understood in English. More broadly, however, Nietzsche, when he opened his *Genealogy of Morals* with the admonition that "we are lost to ourselves, we men of science",[3] was suggesting that his standing and formation as a philologist entitled him to generalize about the lack of self-knowledge exhibited by "men of science" in general, this being a claim that *Wissenschaft* would allow him to advance while science, in the more restricted English sense, would not. Science in English, despite (or because of) its singularity, seems designed to *distinguish* – to distinguish one kind of knowledge or scholarship from another or others, as in the paradigm of the natural sciences once these are held to be prototypical for the meaning of science at large. By contrast, Nietzsche's "gay science", as Heidegger (an astute reader of Nietzsche) was aware, has to do with an exuberant joy of learning. "The term Wissenschaft," said Heidegger (of Nietzsche), "resounds with passion (*Leidenschaft*), the passion of a well-grounded mastery over the things that confront us *and over our own ways of responding to what confronts us*".[4] To render *Wissenschaft* in this sentence as "science" in the narrower, English-language sense is to rob Heidegger's point of all meaning, and even to miss Heidegger's broader claim that the growth of what he called *Machenschaft* or machination, the monotonic play of technical calculability, itself constitutes a wholly ominous threat.

Heidegger, as is well known, entertained the deepest doubts about *Machenschaft* and regarded it as a form of estrangement from being, and his erstwhile student Herbert Marcuse was, more pointedly, to link technological reasoning with illegitimate forms of domination.[5] He did so under the influence of Western Marxism at large, and under the additional impress of Horkheimer and Adorno's view, given memorable expression in their *Dialectic of Enlightenment*,[6] that science had long reflected hierarchy and coercion. Hegelian Marxists were by no means alone in their various perceptions of the downside of scientific and technological advance. They simply had their own way(s) of accounting for and

3 Friedrich Nietzsche, *On the Genealogy of Morals and Ecce Homo*, tr. W. Kaufmann and R.J. Hollingdale, ed. W. Kaufmann, New York, Vintage, 1989, p. 15.

4 Martin Heidegger, *Zollikon Seminars: Protocols-Conversations-Letters*, tr. Franz Mayr and Richard Askay, ed. Medard Boss, Evanston, Northwestern University Press, 2001, p. 20. I am indebted to Babette Babich for this reference.

5 Herbert Marcuse, "Some Social Implications of Modern Technology", in *Technology, War and Fascism: Collected Papers of Herbert Marcuse*, ed. D. Kellner, New York and London, Routledge, 1998, vol. I, p. 49.

6 First published Amsterdam, 1947. English translation by John Cumming, New York, Continuum/Herder and Herder, 1972.

characterizing something that was sufficiently well-marked to have been noticed by many others (including student radicals and academic philosophers of science) at the time. Althusser, from all published appearances, was alone among Western Marxist theorists in having ignored it, as we shall see in Chapter 6. In view of this startling omission, the least that can be said as a preliminary point is that Althusser, in his concern to strike against the received ideas of Hegelian Marxism succeeds, despite himself, in casting one of them – the negative implications of unfettered scientific advance – into stark relief.

To make this point is to raise another one. It is consonant with the overall argument of the present study that if we contrast *Wissenschaft* (in its broader, German sense) with science (in its narrower, English sense), then Marx can be seen, readily enough, as having discussed, and as having made arguments about, the former. Engels on the other hand was concerned to make (and became preoccupied with making) markedly more ambitious claims about the latter, and to do so in such a way as to run *Wissenschaft* and science together, as though there were no significant differences between the two.[7] This is a point to which we will obviously return, mainly in Chapter 2, since Engels's conflation of *Wissenschaft* and science produced enormous subsequent (and consequent) confusion, as we are about to see.

7 See in particular Terrell Carver, "Marx and Marxism," in T.M. Porter and D. Ross, eds, *Cambridge History of Science*, vol. 7, *The Modern Social Sciences*, Cambridge, Cambridge University Press, 2002.

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Introduction

Socialism and science have long failed to emulsify, despite numerous attempts – some of them earnest, well-intentioned efforts – to integrate the two. This failure, sad to say, was institutional as well as intellectual, and there are good reasons why the graft refused to take. Not least among these reasons is the indifference of most natural scientists to the idea that there could be a "science" of society and history, and, more pointedly, to the idea that Marxism could provide one. As Zbigniew Jordan archly puts it,

> (t)here may be some advantages in being able to consider the liquefication of gases, the melting of metals, and social or political revolutions as different instances of one and the same law, but these advantages are not relevant to what the scientist does.[1]

(Some notable exceptions to this generalization are dealt with below (Chapter 4); the instance of Darwin is significant enough to merit separate treatment (Chapter 3)). A rather less obvious reason is that Marx himself gave would-be scientific socialists so little to go on (see Chapter 1). The usual argument resorted to, if this point is admitted, has been advanced by friend and foe alike: this is that Marx's reticence on the subject of science was in some ways made good, or made up for, by Engels – an Engels who was only too eager to take up the slack and augment Marx's arguments in the desired direction. This is not an argument adopted here (see Chapter 2). Engels's contributions to the idea of scientific socialism, contributions which were, in their manner, substantial and indeed formative, stem, I shall argue, from a sincere interest in the natural sciences. This is an interest that Marx did not share to anything like the same extent; and it is an interest – I shall not say obsession – that on any measure outpaced Engels's knowledge about and understanding of natural science, its protocols and procedures. I shall duly argue (see Chapter 5) that this very mismatch helped stymie and misdirect a great deal of future work, not all of it theoretical.

In a nutshell: Engels declaimed at Marx's graveside in Highgate Cemetery that "just as Darwin discovered the law of development of organic nature, so

1 Zbigniew A. Jordan, *The Evolution of Dialectical Materialism*, London, St Martin's Press, 1967, p. 203.

Marx discovered the law of development of human history".[2] This famous, indeed pregnant, comparison passed unchallenged for a remarkably long time (specifically, from 17 March 1883, when Engels made it in the presence of eleven other people, right down to the present day). It will not pass unchallenged here. The terms of Engels's comparison ("just as … so") are deeply suspect, for reasons to be entered into more fully below (Chapter 2). Nonetheless, scholars and stalwarts, academics and apparatchiks – all laboured, sometimes prodigiously, to bring together what they understood to be "Marxism" and what they understood to be "Darwinism". They did so in the belief, in the conviction, that Engels's comparison amounted to or suggested as a serious, world-historical intellectual and political agenda. I suggest below that a real comparison between Marx and Darwin would point in a very different direction.

I argue below, not that the outcome of this misplaced agenda, scientific socialism, never took off – that it took off all right, but with disastrous effects – and not just that when it took off its launch codes were set wrongly (though they were). My more substantive point is that there is and can be no "correct" way of setting such launch codes, and that successive refusals to accept this point, all of which presume too much, have bedevilled intellectual enquiry (to say nothing of political reality) for long enough.

As a political theorist, I am almost by definition fascinated by the power of ideas. The ideas that occupy this book are for the most part bad ideas – bad because attempts to put them into practice were disastrous, and because they were fatefully misconceived in the first place. Obviously, the sell-by date of scientific socialism is by now long surpassed; my presumption here is that we can learn from our mistakes, and that one of the mistakes we can learn from is the mistake involved in letting misconceived ideas turn into misconceived political agendas. The idea of Marxism as a, or *the*, science of society and history was, after all, anything but a non-starter in the course of the sad century that was our twentieth. From a desideratum or an ideal this turned with frightening ease into an agenda. When true believers, stalwarts and others operated on the assumption that there had to be a way of formulating the precepts of scientific socialism or of putting them into practice, they were assuming or presuming what needed to be established. The idea that there has to be a way of mapping the protocols and promise of natural science on to human society – and this is an idea that neither begins nor ends with the concept of scientific socialism – is an assumption that fails to hold up to sustained examination.

Let us return briefly to Engels, who supposed otherwise. His formulation at Marx's graveside suggests that events in society and history should in principle conform to law in much the same way as do events in nature, in which case we are in the presence of a category mistake. Nor does Engels even leave it at this. The "law of development of human history", he suggests, can and should be regarded as being not just cognate with "the law of development of external

2 Karl Marx and Friedrich Engels, *Selected Works* (hereinafter *MESW*), Moscow, Foreign Languages Publishing House, 1962, vol. II, p. 167.

nature" but as a branch, expression or outpost of this latter. This is confusion worse confounded, confounded in the event not just by Engels but by all those – their number is legion – who followed suit. They always had Engels's authority to fall back on, along with Engels's assurance that he was merely giving voice to what Marx himself had believed. But there is no warrant in any of Marx's writings for Engels's central conviction that laws of nature, laws of social development, and laws of thought all follow the same, "dialectical" logic.

It has long been my conviction that Engels in delivering such assurances was in fact not augmenting Marx at all, but extending what Marx had said into precincts Marx had never seen fit to enter. I propose to demonstrate this point in its proper place (see Chapter 2). This is not a book about Marx, but about claims made in Marx's name by Marxists who were moving away from Marx. For this very reason, it is necessary at this juncture to distinguish the Marxian from the Marxist. A Marxian belief or tenet is one that can safely be attributed to Marx himself on the basis of textual evidence. There is a limited number of these. A Marxist belief or tenet, by contrast, is one that claims to be in keeping with Marx's own beliefs and convictions. Not all Marxist beliefs are Marxian: the category "Marxist" is simply more capacious than the category "Marxian", particularly now. By now, it is safe to say, conversely and paradoxically, that "it is … not the case that all Marxian beliefs are Marxist, for the good and simple reason that when Marxism developed, knowledge of what Marx wrote was inadequate". It may be, as I have suggested elsewhere, that we are today faced with "a galaxy of different Marxisms, within which the place of Marx's own thought is ambiguous".[3] This point needs to be positioned with some care. That "Marxism" as a composite term has long been characterized by tensions between "scientific" and "critical" tendencies is not at issue here. Alvin Gouldner's *The Two Marxisms*[4] has ably and creditably traced out some of these tensions. But Gouldner vitiates his own argument to the extent that instead of convincingly connecting the doctrine of "scientificity" with the broadly Leninist concept of orthodox Party "vanguardism", he projects these tensions back into Marx's writings, which is where they need not – indeed cannot – apply in the same way. Gouldner's assumption is that since Marx's writings must by definition be "Marxist" ones, what characterizes the "Marxist" must characterize the "Marxian" too. It is this very assumption I wish to call into question, in the belief that Marxism, whatever form it may have taken, and what Marx wrote are no more than tangentially related. This tangential relationship follows from the fact that Marxism, whatever contours any of its manifestations may have assumed, developed on the basis of an astounding ignorance of what Marx had written. It would perhaps have seemed preposterous to Gouldner to suppose that what Marx wrote is analytically separate from, and at cross-purposes with

3 Paul Thomas, "Critical Reception: Marx Then and Now", in Terrell Carver, ed., *The Cambridge Companion to Marx*, Cambridge, Cambridge University Press, 1991, p. 26.

4 Alvin Gouldner, *The Two Marxisms. Contradictions and Anomalies in the Development of Theory*, New York, Seabury, 1980.

whatever Marxism became. It does not seem preposterous to me. Nor indeed is this a conclusion, laboriously arrived at. It is a starting point, and one that overlaps with a more central, pointed contention: that the central components of what has come down to us as scientific socialism depart from, and are at variance with Marx and the Marxian in significant ways. The term "scientific socialism" assumed a variety of different meanings as its history ran its course, but none of them had much to do with what Marx wrote. This may still appear to be a large and surprising claim, but it is not a very difficult claim to support.

The concept of scientific socialism is commonly thought to have been left to posterity either by Marx or by the composite Marx-and-Engels, but is in reality much more the province of Engels – not of Engels alone, but of Engels along with those who never took it upon themselves to disagree with him, or with his understanding of what Marxism comported. It was Engels, not Marx, who bequeathed to Marxism the concept of scientific socialism, though he took care to advance it in Marx's name. It was Engels, not Marx, who wrote about natural science in the belief that it had some application to human history – though again, he gave expression to this belief in Marx's name. In so doing, Engels was influential indeed. Scientific socialism in short order became an article of faith among political stalwarts and academicians. The concept became regnant. It stayed where Engels put it – in a position of prominence – from the era of evolutionary socialism in the late nineteenth century right up through the period of the Cold War. Engels's understanding of scientific socialism, and with it Engels's understanding of Marxism itself, was seized upon with some alacrity by both sides during the Cold War. In this way, the concept of scientific socialism, which had never made much sense in Engels's formulation of it, and which, if judged by its intellectual merits, should have died a natural death long before the irruption of the Cold War, was instead given an artificial lease of life during the Cold War, by both sides, albeit for different reasons. In Terrell Carver's well-judged words,

> "commentators, adherents and critics were not slow to seize the enormous advantages offered by this view … The style and content of Marx's works were more difficult, particularly in the critical works on political economy, than Engels's more readable efforts; indeed Engels's subjects – philosophy and history – were less remote than political economy. There were some aspects of Engels's work that were easier to demolish than Marx's more intricate arguments, so hostile critics have clung to the view that Marx and Engels may be read interchangeably. Political and academic life in the official institutions of the Soviet Union, by contrast, involve(d) a positive commitment to dialectical and historical materialism that derives from Engels's work but require(d) the posthumous imprimatur of Marx, the senior partner. The Marx-Engels relationship is therefore sacrosanct[5] –

5 Terrell Carver, *Engels*, Oxford, Oxford University Press, 1981, p. 74.

as sacrosanct, we might add, as a view of Marxism as scientific socialism that was (at first) Engels's and Engels's alone. It is not enough here merely to indicate that neither side in the Cold War monopolized the title of true believer. My erstwhile colleague, the late Michael Rogin, gave memorable expression to a more substantive paradox: that the Cold War was the kind of conflict in which each side, as it combats its (often demonized) antagonist, mirrors that antagonist's worst features. I freely admit, indeed celebrate, the influence of Michael Rogin's insights in and on what follows.

This aspect of my argument is taken up and developed in Chapter 5. But what is at stake in advancing it can be illustrated more immediately. Some years ago, in conversation, Sir Isaiah Berlin said to me: "This contrast" – if memory serves, "this fashionable contrast" – "between Marx, the warm humanist, and Engels, the dreary positivist, won't work at all." He was in a sense quite right. Engels was the least dreary of writers – unless, that is, he turned his attention to science. Nor is there anything necessarily "dreary" about positivism as such. Maurice Mandelbaum convincingly amended Lezsek Kolakowski's characterization of positivism on the grounds that, even though the latter appears capacious enough – no real positivist, not even Auguste Comte himself, would meet all Kolakowski's requirements – it makes no allowance for the possibility of a critical positivism.[6] Yet Engels's positivistic statements about natural science are both dreary and uncritical, and there is no shortage of alternatives to such dreariness, alternatives which do not collapse or coalesce into the category of "warm humanism", Marx's or anyone else's.

While Berlin's contrast does not work – few overdrawn contrasts do – another contrast was made to work by being put to work historically: the contrast between what Marx wrote and what can be made of what Marx wrote. This is why, some time ago, I advanced the view that "rescuing Marx from the legacy of the high Cold War is going to take a lot of hard work".[7] This book, to reiterate, is not an attempt to rescue Marx but an account of one of the dogmas advanced in his name, the concept of scientific socialism. This concept was advanced by different figures with different ends in mind. It meant different things at different times, and disputes about its meaning were frequent and sometimes bitter. One example, a central example, must suffice here. Scientific socialism during the heyday of the German SPD and the Second International (1885–1914) was a mainstay of "evolutionary socialism", of a Marxism that had publicly dissociated itself from the perceived insurrectionary excesses of the Paris Commune (1871), and by extension from insurrectionary violence at large. Parliamentarism and gradualism were henceforward to be its watchwords. In Russia, by contrast, after the unexpected success of the Bolshevik Revolution (1917) scientific socialism was again invoked and resorted to for its supposed explanatory power. But it now meant something very different from the scientific

6 Maurice Mandelbaum, *History, Man and Nature*, Baltimore, Johns Hopkins University Press, 1971, pp. 74–5, cf. p. 394, n. 58.

7 Paul Thomas, "Critical Reception. Marx Then and Now", p. 52.

socialism that had been a component of SPD and Second International orthodoxy. The victory of the Bolsheviks had nothing of the ballot box about it, had been forseen by few and planned by fewer. It now needed theoretical support of the kind that would explain why what had happened had to have happened, that it was in some way inscribed in the logic of history.

That a heady dose of intellectual and political chicanery was involved in the Bolsheviks' invocation of scientific socialism is not at issue here. As successful revolutionaries they were, however, faced with a real dilemma. As Marxists they had succeeded against all the odds. (A successful seizure of power in Russia, and in Russia alone, is the last thing Marx would have expected.) Their revolutionary seizure of power was no longer a distant prospect but a fait accompli. How then could they not have invoked Marx, but for whose inspiration none of this would have come to pass? It is the manner of Marx's invocation, not the fact that his name was invoked, that is at issue here. The scientific socialism that was now newly brought to the fore as a legitimating device, and brought to the fore, again, in Marx's name, had little (if anything at all) in common with that of the German SPD. The co-ordinates of the concept of scientific socialism had shifted – and not for the last time.

The shift was nevertheless decisive. Despite Marx's hopes, the success of Marxism as a revolutionary movement owed much to the efforts of leaders like Lenin, whose philosophical background was not deep. This weakened the intellectual stature of Marxism for some time to come. Marx's thought, interpreted in the light of events he had no way of foreseeing, was henceforward all too frequently forced to fit the contours of these later events. Arguments made by Marx were at times to become mightily inconvenient to Marxist regimes, and so were ignored, downplayed or suppressed, along with those intellectual mavericks who were importunate enough to reveal what Marx had said.

That it was within this context that the concept of scientific socialism was now, newly brought into play is a point of considerable importance. Hobsbawm notes that

> the increasing tendency to back political argument by textual authority, which had long marked some parts of the Marxist tradition – notably in Russia – encouraged diffusion of classic texts … In the course of time the textual appeals to Lenin and Stalin were considerably more frequent than those to Marx and Engels.[8]

Indeed they were; but what needs to be added is that Marx came off far worse than Engels. The latter's views proved much more assimilable than Marx's within the Marxist–Leninist orthodoxy, for reasons entered into more fully below (Chapter 5).

8 E.J. Hobsbawm, "The Fortunes of Marx's and Engels's Writings", in Hobsbawm, ed., *The History of Marxism*, vol. 1, *Marxism in Marx's Day*, Bloomington, Indiana University Press, 1982, p. 335.

It is a matter of record that many of Marx's writings were consigned to near-oblivion by their belated publication in the Soviet Union. These include not only the *Economic and Philosophic Manuscripts* and the *Grundrisse* but also *The German Ideology*, which did not see the light of day (and was not given a title) in any language before 1932 – by which time historical materialism

> had its own basic books, long canonized precisely because in important respects they were at variance with Marx's own. Those books included Franz Mehring's *On Historical Materialism* (1893), G.V. Plekhanov's *The Development of the Monist View of History* (1895), Antonio Labriola's *Essays on the Materialist Conception of History* (1896), and Karl Kautsky's *The Materialist Conception of History* (1927).[9]

But the important point about this Soviet-induced oblivion is its overwhelmingly selective nature. Not everything was consigned to it in anything like the same way. Engels's *Dialectics of Nature*, a book he failed to complete or publish during his own lifetime, was, by contrast with some of Marx's work, translated and published in short order in the Soviet Union and diffused widely, there and elsewhere, even though David Ryazanov had noted, quite correctly, that much (some would say most) of what Engels had had to say about natural science in the 1870s (when he put aside work on it in order to write *Anti-Dühring*) had become obsolete. Nevertheless, it seemed to fit into "the 'scientific' orientation of Marxism which, long popular in Russia,… was reinforced in the Stalin era."[10] The CPSU's far from grudging imprimatur, its welcome of *Dialectics of Nature*, points up something of great importance to the argument of this book: the centrality of Engels to Marx's reception.

Why, though, does this centrality matter? It matters at one level because Engels, as we have seen, had a genuine interest in, and largely self-taught knowledge about, natural science, and because while Marx wrote very little about natural science, Engels wrote a great deal on the subject. In considerable measure Engels invented what has come down to us as Marxism – that body of thought from which Marx's own ideas still need to be extricated and retrieved. It was Engels's "defining influence" that first "put Marxism on the map", just as Terrell Carver says.[11] Moreover, it was as a theoretician and not as an ageing consultant-from-afar of the fledgling German SPD that Engels set his seal on the development of Marxism, doing so in such a way that it never entered the minds of later Russian keepers of the flame, who derogated their German forerunners as "opportunists", to derogate Engels in anything like the same way. Although we have no way of knowing with any certainty whether Engels would have welcomed or sanctioned any such development, there is at least one sense in which

9 Paul Thomas, "Critical Reception", p. 33.

10 Hobsbawm, "The Fortunes of Marx's and Engels's Writings", p. 336.

11 Paul Thomas, "Review" of Terrell Carver, *Engels, New Political Science*, No. 8, Spring 1982, p. 101.

the first believer in the mythical joint identity of Marx and Engels was none other than Engels himself. To the extent that he appointed himself the posthumous alter ego of Marx (Marx's literary executor, we might say, in more senses than one), Engels created some of the conditions in which this same myth could take root and flourish, and in which there could be an 'E' in the MEGA and a joint place in the Marx–Engels Institute.

Engels's influence on Marx's legacy and reception has much to do with the weight Engels awarded natural science. Engels's belief that nature (in Kolakowski's words) "as we know it is an extension of man, an organ of [man's] practical activity"[12] is in one respect not an adequate rendition of Marx's thinking, and runs up against so obvious a source as the *Critique of the Gotha Program*. For that matter, it runs up against the fact that Marx read Darwin's *Origin of Species*, one of the points of which was to redefine "nature as we know it". Kolakowski appears to think that Marx regarded nature as an arena of (and for) human activity and that such activity pushes back nature's boundaries as it advances human aims. The human and the natural are here seen in zero-sum terms that Marx does not apply and whose purchase he would have denied. What makes labour human also and by the same token makes it natural to us as a species; the denial of the human character of human labour is the denial of its natural character too (see my Epilogue). This is not a trivial or incidental point. *The Origin of Species* has little to do with human efforts to transform nature, efforts which pale into relative insignificance in comparison with the sheer scope and scale of what Darwin was concerned to characterize. The idea that nature begins to exist for man only with the advent of active, human intervention in natural processes is an idea that owes nothing to Darwin and nothing to Marx, though it does play a part in Engels's speculations. Try – if you dare – telling someone who lives on an earthquake fault, or in the path of a hurricane, that "nature begins to exist for man only with the advent of active human intervention" within it! No sensible argument is advanced by easy talk about rolling back nature's barriers, or the Faustian or Promethean imposition of human purposes on natural processes, particularly in an age of ecological catastrophe and global warming.

12 Leszek Kolakowski, *Main Currents in Marxism*, Oxford, Oxford University Press, 1978, vol. III, p. 10.

1 Marx and science

> The problem of the nature of the world without regard to our recipient mental apparatus is an empty abstraction, devoid of practical worth.
>
> (Freud, The Future of an Illusion)

> Every sign by itself seems dead. What gives it life? – In use it is alive. Is life breathed into it there? – Or is the use its life?
>
> (Wittgenstein, Philosophical Investigations, para. 432)

> Natural science does not simply describe or explain nature. It is part of the interplay between nature and ourselves; it describes nature as exposed to our method of questioning.
>
> (Heisenberg, Physics and Philosophy)

Old myths die hard. The very first page of Eduard Bernstein's *Evolutionary Socialism* contains the confident assertion that "the theory of society worked out by Marx and Engels … [was] called by them 'scientific socialism' ". Bernstein's confidence (as is well known in other connections) was misplaced. Quite apart from the fact that today it is no longer customary to assume a joint identity for Marx and Engels, Bernstein's assertion – which resounds through the writings of other Marxists and commentators – can be faulted on a number of grounds. The least important of these grounds is that Marx himself never used the phrase "scientific socialism". Considering its provenance and etymology, he could not have used it. Even when Engels applied this phrase as an appropriate designation of Marxism in his *Anti-Dühring*, in order to combat a quite different notion of what scientific socialism was, Marx, for his part, did not adopt Engels's use of the expression, and for very good reason.

It is remarkable that Engels's claim that Marx was familiar with *Anti-Dühring* has remained unchallenged; the conceptual chasm separating Marx's writings from the arguments Engels set forth in *Anti-Dühring* is such that even if Marx was familiar with these arguments, he disagreed with them. Although there is no direct evidence that Marx ever even read *Anti-Dühring*, Engels claimed, after Marx's death, that he "read the whole manuscript to him [Marx] before it was printed" and that a small part "was written by Marx but

unfortunately had to be shortened by me [Engels] for purely external reasons", reasons which Engels, cryptically, does not specify. Alfred Schmidt, curiously, regards it as certain that Marx was familiar with *Anti-Dühring* on the grounds that Marx refers in the first volume of *Capital* to Engels's conception of "the transformation of quantity into quality" spelled out in Chapter 12 of *Anti-Dühring*. Yet Marx refers not to Engels but to Hegel; what he says, in his discussion of the transformation of the possessor of money and commodities into the capitalist, is that "here, as in natural science, is shown the correctness of the law discovered by Hegel [in his 'Logic'] that merely quantitative differences beyond a certain point pass into qualitative changes". Marx added to the third edition a footnote saying that "the molecular theory of modern chemistry rests on no other law".[1]

Marx's work is often seen as the instigator of the "tyranny of concepts" – the title of a book attacking Marxism by Gordon Leff – never as its victim. Yet many slogans continue to influence, sometimes imperceptibly, our judgment of his writings. It is by no means uncommon, even today, to find academic discussions of these writings constructed around concepts such as "historical inevitability" or "dialectical materialism", however discredited by recent scholarship these may be. The concept of "economic determinism", applied to a thinker who quite clearly specified that he subscribed to a belief in the social determination of economic categories, is an example of misleading, even emotive, labelling. Historically, slogans have been used by Marxist and opponents of Marxism to carry descriptive force, but this is no reason to perpetuate the bad habit. It is hard to think of any other social or political thinker who has suffered from imposed categories, proceeding from friend and foe alike, as much as Marx.

The argument advanced here is that the concept of scientific socialism is such an imposed category, one which is not only of no help to an understanding of Marx's writings and enterprises, but is also positively detrimental. The issue is anything but purely terminological. "Scientific socialism" is a phrase used by later Marxists in order to guarantee methodological certainty and doctrinal orthodoxy of a certain type. The first of these users was Engels, who popularized the phrase in his own essay in *Anti-Dühring* which was published separately as *Socialism, Utopian and Scientific*. Engels was by no means the worst offender, but he may have been the most important, giving as he did a new lease of life to a phrase that had nothing but the most odious connotations to Marx himself. Engels also indicated one crucial characteristic of the phrase in question – that it

1 Friedrich Engels, 'Preface' to the second edition of *Anti-Dühring*, 1885; Alfred Schmidt, *The Concept of Nature in Marx*, tr. Ben Brewster, London, New Left Books, 1971, p. 207, n. 121; Karl Marx, *Capital*, Moscow, 1961, vol. I, p. 309 (cf. Marx to Engels, 22 June 1867, in *Engels on Capital*, London, Lawrence and Wishart, 1941, pp. 123–4; A.V. Miller, tr., *Hegel's Science of Logic*, London, Allen & Unwin 1969, pp. 177–8. The passage about the transformation of quantity into quality occurs in *Das Kapital*, 1867, 1872 and 1883 editions, and in *Le Capital*, 1872–75.

was from the first intended to deal with a series of misapprehensions of Marx's central beliefs, misapprehensions which it succeeded in compounding. As Lichtheim points out, Engels's popularization of his mentor was, along with positivism, influential in acquainting the intelligentsia, inside and outside the German Social-Democratic Party, with a world-view that was "materialist" and "scientific" in the sense which those terms then possessed for those who advocated extension of the methods of natural science to history and to society. It is a commonplace that the later nineteenth century exhibited no shortage of such advocates; it is less of a commonplace, though rather more important, that Karl Marx should not be numbered among them.

Marx and natural science

There is "no typically Marxist methodology that has affected the progress of natural science";[2] indeed, Marxism historically has always been weak on science. It has been weak on science despite (or because of) Engels's well-known interest in the natural science, an interest which Marx, from all accounts, did not share to the same extent (any more than he shared Engels's interest – one which seems to have done less damage – in military history). There is, after all, very little argument about natural science as such, or its methods, in Marx, but a good deal of this in Engels. It might be claimed that Marx's lack of concern has helped prevent later Marxists from adequately comprehending the threats and promises of scientific progress; and to be sure, examples of lack of comprehension are not hard to come by. Herbert Marcuse's *One-dimensional Man* has been roundly criticized because of its uneasy prospect of a "liberated technology" which somehow would avoid the baneful effects of unliberated technology in late capitalist society; this prospect seems to take us no further in our critical task than Engels's less-celebrated strictures about "revolutionary mathematics and mechanics". One of Marcuse's most trenchant and most sympathetic critics has been Jürgen Habermas, the heir-apparent of critical theory. Habermas, following the Frankfurt School's critique of mechanistic Marxism, has presented an alternative claim – that the scientific and "instrumentalist" tendencies inherent in classical Marxism make necessary the construction of a "metatheory" that will restore the dimension of communication and emancipation.[3] The argument advanced here differs from both these claims. Marx himself does seem to have been aware of the pitfalls of scientistic or positivistic Marxism and was careful

2 Leszek Kolakowski, "Permanent and Transitory Aspects of Marxism", in *The Broken Mirror: A Collection of Writings from Contemporary Poland*, ed. Pavel Mayevski, New York, 1958, p. 166.

3 See Herbert Marcuse, *One-dimensional Man*, Boston, Beacon Press, 1967, pp. 227–37, and Herbert Marcuse, "Industrialization and Capitalism in the Works of Max Weber", *Negations*, Boston, Beacon Press, 1969, pp. 201–36. Jürgen Habermas, "Science and Technology as 'Ideology' ", in *Toward a Rational Society*, tr. Jeremy J. Shapiro, Boston, Beacon Press, 1970, pp. 81–122.

to stand back from them, so that what we need to do (for the time being) is to read Marx carefully. The task is urgent, for the easy demolition of the views of Engels on science and society has not, for the most part, taken account of the fact that these were views that Marx did not share. By now, the demolition of Engels's theory of science, as set forth in *The Dialectics of Nature* rather than *Anti-Dühring*, has become a kind of ritual, recently and joyously celebrated in Jacques Monod's *Chance and Necessity*, which is not original in pinpointing what Monod calls "the epistemological disaster which ensues from the 'scientific' use of dialectical interpretation".[4] Yet Monod nowhere considers Marxism to be anything but the Marxist–Leninist Weltanschauung of "dialectical materialism". This Weltanschauung is indeed positivistic and scientistic; in the hands of Engels alone Marxism became concerned with ultimate laws and constituents of the universe – something about which Marx himself had remained strangely silent. Engels even tried to deduce the "dialectics" (a word not found in Marx except when Marx was criticizing Proudhon) of society from the dialectics of nature, ascribing to Marx a coherent monistic system of materialist metaphysics which comprised a philosophy of nature and a theory of "Society" as well as a view of history. Yet Marx himself entertained no such beliefs, adumbrated no such system, and was invariably hostile to thinkers who did either of these things.

It might be claimed (perhaps by someone wishing to give new life to the hoary old interpretation that the late differs substantively from the early Marx) that "the thinking of the mature Marx discloses a growing emphasis" on the "scientific study of impersonal forces, or processes independent of human volition, forces and processes that could be described by analogy to the physical world". Lichtheim exaggerates in saying that "it is evident from his writings and correspondence that Marx gradually came to adopt a standpoint which in some respects resembled the scientism of his age".[5] Unsurprisingly, Lichtheim provides no documentation to support his claim. Such claims find remarkably little substantiation in the writings of Marx, writings which, on the contrary, remain noticeably faithful to a way of looking at natural science and at society that was first set out in the *Economic and Philosophic Manuscripts* of 1844 and discussed in greater detail in *The German Ideology*. In view of this, we shall find that the most that can be said is that Marx's resounding silence on many of the issues that according to Engels make up the Marxian "system" left a gap that Engels and his successors were only too happy to fill. The result was that Engels's numerous writings on science attained a wide circulation – such a wide circulation that, even today, whoever would take it upon himself to demonstrate that Marx's position is irreducible to that of Engels is obliged to take the high road, and to reconstruct Marx's position from an interpretation of his own writings.

4 Jacques Monod, *Chance and Necessity*, tr. Austryn Wainhouse, New York, Random House, 1972, p. 39.

5 George Lichtheim, *Marxism. An Historical and Critical Study*, New York, Praeger, 1971, pp. 236, 243n.

Socialism and communism

Marx's evident distaste for the concept (and even the expression) of "scientific socialism" in all probability is derived from its provenance. The phrase was first used by (of all people) Proudhon, and was popularized by Karl Grün who thought that Saint-Simon was a scientific socialist. Marx, whose invective and animus against Proudhon and Grün is a matter of record, considered that Saint-Simon was, among other things, a utopian.

Marx, before the Paris Commune, never described himself as a socialist, let alone a scientific socialist. He always identified himself as a communist. There are good reasons for this. Socialism pre-dated Marx; it was already flourishing on French soil when Marx arrived in Paris in 1843, as a movement which advocated economic amelioration and legislative protection for the workers, universal suffrage, civil rights of association and freedom of opinion, co-operative institutions, and cultural opportunities for the poor. Communism, too, was flourishing in Paris at the time, but it was flourishing quite separately from socialism; what was distinctive about communism can be seen in its drastic points of difference from the thought of one prominent thinker who delighted in the appellation "socialist", Proudhon's *bête noire*, Louis Blanc, who did not believe either in the organization of the revolutionary working class or in the abolition of private property relations. Communists, by contrast, espoused both beliefs, with some virulence, and rejected the socialists' markedly positive attitude towards the state; their lineage may be traced back to the *cercle social* of the French Revolution – Leclerc, Roux, Babeuf and Buonarroti – whose writings Marx studied in Paris.

Marxism made its bid after the socialist movement had already become organized, conscious, active, doctrinaire and French, which does much to explain the relative slowness of the penetration of Marxism into the French radical tradition. Lorenz Von Stein's *Der Sozialismus und Kommunismus des heutigen Frankreichs* (1842) designates as socialists the three writers Marx was to consider (in the Manifesto) "critical-utopian", namely Saint-Simon, Fourier and Owen, and whose followers Marx was likewise to dismiss as fanatical sectarians building castles in the air. Marx believed that socialism, like Proudhonism, was by definition utopian and doctrinaire, and that it was by the same token a false brother to communism; he thought that for this reason its very name should be avoided. Moreover, not only were socialists utopian, or reformist, or both; they were also invariably members of eminently middle-class movements craving respectability, as opposed to the communists who (whether they were utopians or not) were at least autonomous and proletarian.

Socialism by the 1840s had not become – and in the eyes of Marx could never become – the common creed of the working class, whereas the communism of Etienne Cabet (or for that matter of Wilhelm Weitling) had the considerable merit of endorsing class war, revolution and the abolition of private property relations, even if Cabet and Weitling did propound their beliefs in a rough-hewn way. "The theory of the communists," stated *The Communist*

Manifesto (which proclaims in its first sentence Marx and Engels's adherence to communism rather than their invention of it) "may be summed up in a single sentence: the abolition of private property [Aufhebung des Privat-Eigenthums]" – a sentence that was designed explicitly to distinguish the authors' adopted communism from the *Gütergemeinschaft* or *communauté des biens* so earnestly preached by the socialists. In accordance with this, Marx was to write, some twenty-five years later, that the (First) International "has been founded to replace socialist or semi-socialist sects with the real organization of the working class".[6]

The distinction between socialism ("scientific" or not) and communism that Marx outlined in the *Manifesto* was in fact maintained throughout Marx's later, more detailed, historical writings. It has been pointed out that in *The Class Struggles in France* and *The 18th Brumaire of Louis Bonaparte*, for instance, "the term 'socialism' glitters with many meanings, including an ironic use, calling everything that offended the interests of the party of order … by the name of socialism",[7] but the basic distinction that the *Manifesto* had outlined is maintained throughout these writings: the "socialist doctrinaires" (Ledru-Rollin, Lamartine, Blanc) are always distinguished from and compared unfavourably with "the proletariat's real revolutionaries" (Blanqui, Cabet, Raspail). Marx felt very strongly about the distinction between those who could be curtly dismissed as "socialist miracle workers" and those with whom he had identified himself. After all, Blanquism, in the harsh but accurate words of Georges Sorel's *La décomposition de Marxisme*, amounted to nothing more than "the revolt of the poor conducted by a revolutionary staff"; whereas the whole point of the *Manifesto*, and the International, was to eschew conspiratorialism and to present to the world, openly and even brazenly, the views and aims of a movement. This movement, though numerically weak, was an authentic, autonomous, working-class, international movement dedicated to a type of revolutionary programme that had transcended both the conspiratorialism of Babeuf and the elitism of Blanqui, together with reformism of nay stripe. Marx, whose personal intolerance is notorious, even tended to adhere to those revolutionaries who were on the correct side of the communist-socialist hiatus; he greatly admired Weitling and broke with him most reluctantly, even though Weitling tended to recruit among skilled artisans rather than the nascent proletariat and refused even to recognize the role of an organized working-class movement.

It should not surprise us, then, that the word "socialism" occurs in *Capital* only in a derogatory sense, applied usually to Proudhon and the utopians; Marx, it seems, never got over his dislike for the word or the concept, although the sharpness of the distinction between communism and socialism came to be blurred in later years. The reasons why this blurring took place have little enough to do with Marx's personal preferences. The *fédérés* of the Paris

6 Maximilien Rubel, "Marx et la première Internationale: une chronologie", *Etudes de Marxologie*, Paris, August 1965.

7 Zbigniew A. Jordan, *The Evolution of Dialectical Materialism*, New York, St Martin's Press, 1967, pp. 374–5.

Commune – thanks to exaggerated charges of terrorism and atrocity made against them by the bourgeois press – succeeded in giving "communism" a sinister and threatening reputation, which added urgency to the September 1871 resolution of the International prohibiting the use by its branches of any "sectarian names such as Positivists, Mutualist, Collectivists, and Communists". As Marx insisted at a speech at a banquet the same month, "the International propagates no particular credo".[8]

On the other hand, the Commune buried together with its dead many utopian brands of socialism, so that the meaning of the word "socialism" itself began to undergo a change; the distinction between socialism and communism, so important to Marx before the Commune, was disappearing of its own accord. Socialism was becoming more of a working-class movement that was increasingly inclined to look to Marx and Engels, who were becoming revolutionary elder statesmen, for guidance and an imprimatur. These developments were particularly evident in the case of the German social democratic movement, whose deliberate decision to abandon the term "communist" came to be of great strategic importance, since it reflected a determination not even to appear to want to resort to the tactics that had been responsible for the French disaster of 1871. Success, so it seemed, could be appropriated by German social democracy only if the distinction between socialism and communism were no longer too rigidly applied. What needed to be stressed in its stead was a spirited repudiation of armed insurrection as a means of establishing the dictatorship of the proletariat by a historical short-cut; such a repudiation had precedent, as the *Manifesto* was once again available in published (and this time in widely-disseminated) form as a reference. A celebrated indication of the shift was provided by Engels's "Introduction" to *The Class Struggles in France*, which, like his "Prefatory Note" to The Peasant War in Germany, expressed confidence in the Germans' obtaining Socialist revolution at the ballot box. Confidence in "legality" was now at a premium.

The compatibility of this aspect of social democratic orthodoxy with Engels's (and, still more, Bernstein's) faith in the precepts of "scientific socialism" is well known; but because it largely post-dated Marx's death, it should not be read back into Marx's lifetime. It was not an issue that struck Marx – whose own sentiments were expressed, in acerbic but almost aphoristic fashion, throughout the *Critique of the Gotha Program* – as being particularly important.

Science and positivism

Marx uses the word science throughout his writings in such a way that it is always quite incompatible with a crude, positivistic usage, although not all of Engels's formulations are incompatible with positivism in anything like the same way. In the *Economic and Philosophic Manuscripts* Marx says that

8 Jacques Freymond, *La première Internationale*, recueil de documents, Geneva, Droz (Publications de l'Institut Universitaire de Hautes Etudes Internationales, No. 39), 1962, vol. II, pp. 233–4; cf. Rubel, "Marx et la premiere Internationale".

"industry is the actual historical relationship of nature, and thus of natural science, to man … natural science will then abandon its abstract materialist, or rather idealist, orientation, and will become a human science [*Geisteswissenschaft*]". Two years later, in *The German Ideology*, we find Marx's more celebrated prolegomenon: "where speculation ends, in real life, there real positive science begins: the depiction [*Darstellung*] of the practical activity, of the practical process of development, of men. Empty talk about consciousness ceases, and real knowledge has to take its place…." Here the word science explicitly means "the study of the actual life-process and activity of the individuals of each epoch". With respect to the methodology involved in this "study", Marx is again explicit. The place of "philosophy as an independent branch of knowledge", he says, must be taken by a

> summing-up [*Zusammenfassung*] of the most general results derived through abstraction form the observation of men's historical development. These abstractions have in themselves, i.e. if considered apart from real history, no value whatsoever. They can only serve to facilitate the arrangement [*Ordnung*] of the historical material, to indicate the sequence [*Reihenfolge*] of its separate strata [*Schichten*]…. Our difficulties begin only when we set about the observation [*Betrachtung*] and the arrangement, the real depiction of historical material.[9]

In the course of a single letter – the well-known letter of Schweitzer about Proudhon – we find the word science being used with reference to his own conception of science and to erroneous, dogmatic, conceptions, such as pseudo-positivism and positivism itself. *Qu'est-ce que la propriété*? could find no place in a strictly scientific history of political economy (though this is in itself no reason to dismiss the book as valueless), says Marx; later in the same letter, Proudhon's bombastically "scientific" claims on behalf of this own doctrine, as set forth in *La philosophie de la misère*, are lambasted because they are without foundation.[10] Marx's scientific work, or the work and procedures that Marx regarded as scientific, did not, according to Marx's own admission, aim at the discovery of universal laws (or, as he would say, of "eternal" laws) regulating political economy or governing human behaviour (although the same certainly cannot be said for Proudhon, which is one of the reasons Marx came to dislike him so much). To see this will help to resolve an apparent paradox. The International, whose Brussels Congress passed a resolution claiming that "Karl Marx has the inestimable merit of being the first economist to have subjected capital to

9 T.B. Bottomore, ed., *Karl Marx, Early Writings*, New York and London, McGraw-Hill, 1964, pp. 1963–4. Cf. Karl Marx and Friedrich Engels, *The German Ideology*, Moscow, Progress Publishers, 1964, pp. 38–9.

10 Marx to J.B. Schweitzer, 24 January 1865, in Karl Marx and Friedrich Engels, *Selected Works* (hereafter cited as *MESW*), Moscow, Foreign Languages Publishing House, 1962, vol. I, pp. 390–7.

a scientific analysis", nevertheless insisted that "the principles of positivism [were] directly opposed to [its] statutes".[11]

The idea that Marx aimed at fashioning "a new science of society" resting upon "historical laws", or that "according to Marx, capitalism, by reason of the innate laws of its own nature, is hurrying along a path which will lead the world of today with the inevitability of the evolution of organic life, to the doors of the world of tomorrow"[12] is simply without foundation. Marx's response to the once prominent contemporary positivist who did aim to fashion such a social science is instructive as well as characteristic. In the summer of 1866 Marx read Auguste Comte's *Cours de philosophie positive* (1830–42) "because the English and the French make such a fuss of the fellow" and was singularly unimpressed with what he found there – as his later ironic dismissal of "Comtist recipes for the cook-shops of the future" bears witness.[13] The reasons for this are not simply that Comte, like Proudhon, defended private property, preached class collaboration, welcomed Louis Bonaparte's deliverance of France from parliamentary government, and, not altogether unlike Proudhon, considered that the moral regeneration of the French people took precedence over their political and economic emancipation. The differences go much deeper. Comte aimed to fashion a new science of society, conceived in historical terms and resting on historical laws. He imagined that this achievement would make possible the placing of morals and politics on the same scientific basis, putting an end to the divorce between the certainties of science and the affirmations of moral experience "by giving point to fact and ground to value";[14] he also wanted by virtue of this accomplishment to bring to a close an era of restless competition in economic and intellectual life which had left men secure in neither possessions nor beliefs. Comte's sociology dispensed with class conflict as the agency of historical change, and also elevated "Society" to a plane which would be fantastic for a Marxist: the science of society was held to consist in the harmonious interaction of the various parts of society. Moreover, empirical knowledge, for Comte, constituted the whole of science. This contrasts markedly with the Hegelian approach, which sees empirical knowledge as a medium, through which the understanding develops its self-consciousness. With Marx, empirical knowledge is instrumental in much the same way (and, indeed, this is even true of the later writings of Engels, closer to positivism though these were). Comte's own belief that his positivism is incompatible with idealism is vindicated; but, by the same token, it is incompatible with revolutionary Marxism. Both doctrines would be

11 David McLellan, *Karl Marx: His Life and Thought*, London: Macmillan, 1974, pp. 380–1.

12 Royden Harrison, "E.S. Beesly and Karl Marx", *International Review of Social History*, Amsterdam, Internationaal Instituut voor Sociale Geshiedenis, vol. 4, 1959, pp. 22–58, 208–38; Georges Sorel, *Reflections on Violence*, tr. T.E. Hulme and J. Roth, Glencoe, Free Press, 1950, p. 101.

13 Marx to Engels, 7 July 1866, *Marx-Engels Gesamtausgabe* (hereafter cited as MEGA), vol. III, p. 345. Karl Marx, 'Afterword' to the 2nd edition of *Das Kapital*, vol. I (dated 1873), *Capital*, p. 17; see also ibid, p. 232, n. 3 (the only time Comte's name appears in the text).

14 Harrison, "E.S. Beesly and Karl Marx", p. 235.

to a Comtean "metaphysical" and therefore anathema. Only what Comte would disparagingly call a speculative philosopher or a metaphysician would make the claim to have grasped the essential reality concealed behind the immediate sense data of experience. But Marx, as we shall see, claimed this constantly, particularly in *Capital*. No positivist would venture to claim that his method consisted in going beyond the world of appearances to the world underlying and explaining these phenomena, yet this is precisely Marx's explicit intention, for instance in the chapter on the "Fetishism of Commodities" in the first volume of *Capital*.

Marx did not emphasize empirical knowledge in the way that Comte did. Neither the "relations of production" nor the "mode of production" is definable in terms of perceived physical objects; and even the "forces of production", which seem at first glance to be more empirical, are seen not as a concatenation of things but as a development, as something in transition, a development that takes place whenever the underlying social circumstances permit. Even technical objects, seen in isolation, were unimportant in the Marxian schema. On the other hand, concepts that are central to Marx's explanations are simply not definable in Comtean terms. Comte meant the word "positive" to indicate, among other things, the transformation of knowledge from the "speculative" to the "scientific" stage; at that stage, facts, instead of being explained a priori, become connected by general laws of a completely "positive" kind, suggested and confirmed by the facts themselves. This position rests, however provisionally, on a fact-value distinction that Marx, following Hegel's critique of Kant, denied, although the neo-Kantians (whose thought was perfectly compatible, sad to say, with a naturalistic, scientistic Marxism) did not. Such was the almost automatic approval given to the word "science" that Eduard Bernstein was greatly resented by his fellow socialists, in and out of the SPD, when he stated, quite correctly, that Marx had denied this "scientific" fact-value distinction.[15] Values, to Marx as to Hegel, are incarnate in life and language, so that the positivists' adherence to this fact-value distinction as a provisional necessary truth is impossible for a Marxist to uphold. As to the "facts", one important reason why Marx attacked the classical economists, and the utopian socialists in the way he did is that they did not see through and beyond the immediate facts. Indeed, this was a way, according to Marx, of attacking the scientific pretensions of people like the classical economists and utopians. Proudhon is a case in point; according to Marx, he does not see through the assumptions of the economists. "The economist's material," wrote Marx, "is [properly] the active energetic life of man; M. Proudhon's … is the dogmas of the economist."[16]

Not only does Marx arrive at this *point d'appui* by means of a denial of the fact-value distinction so essential to the positivists; there is in Marx's writings no distinction between evaluative and cognitive statements. Marx used evaluative language (which has been used to "prove" that Marx was in fact not the

15 On Bernstein, see Peter Gay, *The Dilemma of Democratic Socialism*, New York, Collier, 1968, *passim*; and George Lichtheim, *Marxism*, esp. pp. 264 ff., and 284 ff.

16 Karl Marx, *The Poverty of Philosophy*, Moscow, International Publishers, n.d., p. 101.

"scientist" he "claimed" to be); like Hegel, he rejected Kantian dualism in favour of the unity of *Sein* and *Sollen*, a unity which is quite irreducible to that propounded by Comte. Nor is this all. Positivism, defined broadly as the importation of the concepts, methods, and models from the natural sciences into social and historical investigation, has, as its closest approximation to a model of historical change, a theory of social evolution modelled on biology (perhaps Darwin) or even geology (perhaps Lyall); it certainly drew encouragement after 1859, when *The Origin of Species* was first published, from Darwinism. Despite Comte's belief that sociology could be the highest of the sciences, positivism has little enough to say about Marx's very starting point – what it is that characterizes human society.

Kautsky's attempted assimilation of evolutionistic and positivistic views with Marxism (his *Ethik und materialistische Geschichtsauffassung*, published in 1906) is a synthesis of Marx and Darwin, which runs up against Marx's own documented ambiguity about Darwin.[17] This kind of attempt, made under the influence of an enthusiastic Engels, is inherently misleading in that Marx's thought, by its very nature, emphasizes societies as systems of relations among human beings, of which the relations entered into for purposes of "production and reproduction" are primary. It is this that Marx considered would enable us to explain why societies change. Marx added to this a theory of consciousness; positivists, by contrast, often lack even a concept of action. In the "Preface" to *A Contribution to a Critique of Political Economy*, Marx, summarizing his method, also summarizes the relevant passages in *The German Ideology*. Again Marx proceeds from the "real life process" engaging men, the "production and reproduction of material existence", of which intellectual and cultural activity is an "ideological reflex".[18]

This is not an example of positivist methodology; and even though we might say that Marx accepted the idea that history had its own, internal logic, and could be conceived as a rational process, the implications, like the origins, of this view are Hegelian, not Comtean. Marx's concept of *Entwicklung*, about which he said very little in any case, is based on that of Hegel; translated into English or French this term can mean "evolution" as well as "development", although evolution in the biological sense, as a mode of social explanation, struck Hegel and Marx alike as chimerical. *Entwicklung* also embraces the development, or unfolding, of the components contained in the original concept (*Begriff*); in the sense that such development is logical, history is logical, a rational, secular unity. But unity, according to Hegel and Marx alike, is not the same as uniformity. Investigation into the actual historical process remains a matter for empirical research; and to stress the need for empirical research in this

17 For a discussion, see Valentina Gerratana, "Marx and Darwin", *New Left Review*, vol. 82, November–December 1973, pp. 60–89; and Shlomo Avineri, "From Hoax to Dogma: a Footnote on Marx and Darwin", *Encounter*, March 1967, pp. 30–2.

18 *MESW*, vol. 1, pp. 361–5; Marx to Engels, 7 August 1866, in Karl Marx and Friedrich Engels, *Werke* (hereafter cited as *MEW*), vol. xxxi, Berlin, Dietz Verlag, 1965, p. 348.

sense is not a hallmark of scientific socialism. Nor is it merely a sine qua non of intellectually respectable Marxist historiography. It is a hallmark of scholarship, and a characteristic not so much of scientific socialism as of all understanding.

In particular, for Marx, the interaction of forces and relations of production is not invariant from epoch to epoch or from stage to stage; it is never said by Marx to yield a law by which the historical outcome could in principle be predicted in each successive case. There is, in other words, in Marx's writings no general law formulated by abstraction from the principle of interaction itself. This is a vital difference from Comte, and for that matter from Engels. Even though the relationship of forces to relations of production is of paramount importance to Marx for the study of any known society, Marx did not proceed from this to maintain that the procedure of abstracting a general "law" – for purposes of prediction or anything else – was either possible or legitimate; and, unlike Comte, he did not claim that this procedure was a characteristic of scientific method. Marx did not try to deduce from any general law of social evolution or historical change any firm necessity for one type of society to be transformed progressively into a "more developed" one. To take one illustrative example, classical antiquity regressed according to Marx, and made room for a primitive type of feudalism instead of evolving to a "higher" level; the collapse of classical society was affected by the institution of slavery, which was both the productive basis of that society and the organic limit of its further development. In short, as George Lichtheim summarizes it, "it is by no means the case that the emergence of European feudalism from the wreckage of ancient society was treated by Marx as a matter of logical necessity"[19] any more than he treats the advent of communist society as a fatalistic necessity rather than a necessary task. There is no sense in forming a social movement to help the sun rise, as Marx was well aware.

In seeing the proletariat as the embodiment and bearer of a new, higher form of society, Marx consistently spoke of the tasks confronting the movement, instead of a law of evolution in the Comtean or Spencerian manner. After Marx's death, it is true, Kautsky and Plekhanov (who regarded philosophy as *la science de la science*)[20] veered towards the latter approach, but this is the fault of Engels's fateful and insensitive attempt at a synthesis of Comtean and Hegelian thought – a false synthesis which had the bizarre effect of bringing Marxism and positivism closer together than either Marx or Comte would have believed possible.

Marx did not treat history as the unfolding of anything metaphysical – no matter what Hegel or Comte had done – and did not claim to be in possession of a key called "the dialectic" (or, worse still, "dialectics") which would open every

19 George Lichtheim, "On the Interpretation of Marx's Thought", in *Marx and the Western World*, ed. Nicholas Lobkowicz, Notre Dame, University of Notre Dame Press, 1967; reprinted in George Lichtheim, *From Marx to Hegel*, New York, Seabury, 1974, pp. 63–80.

20 Plekhanov to Kautsky, December 1898, quoted in J.P. Nettl, *Rosa Luxemburg*, Oxford, Oxford University Press, 1968, vol. I, p. 202.

door. There is in Marx no dialectical mould into which facts have to be fitted; there is dialectical inquiry as a way of interpreting those things that happen. There are in Marx's writings no universal, deterministic laws; positivists may have confused the consequent with the subsequent (and Engels, who believed in the possibility of making the post hoc identical with the propter hoc, certainly did so, too). But Marx made very few causal statements, and he specifically said that

> events strikingly analogous but taking place in different historical surroundings lead to totally different results. By studying each of these forms of evolution separately and then comparing them one can easily find the clue to this phenomenon, but one will never arrive there by using as one's master-key a general historico-philosophical theory, the supreme virtue of which consists in being super-historical.

Engels defined "dialectics" as "the science of the general laws of motion and development of nature, human society and thought" and insisted that "the dialectic in our heads is in reality the reflection of the actual development going on in the world of nature and of human history in obedience to dialectical forms".[21]

Science and society

Those who believe that political economy should borrow the methods of the natural sciences and that it should establish the laws of society just as the natural sciences establish those of physical nature will find little support in Marx's writings. On the contrary, it is Marx's writings themselves that they would have to contend with; and there is yet another reason why this is so. Marx's analyses of society do not subordinate society to permanent laws like those of physics, because society is seen by Marx as being in transition, as moving towards a new arrangement in which the "laws" of classical economics will no longer apply. Marx even speaks of the spontaneous (*naturwüchsige*) growth of the division of labour, the State, legal conditions, etc., but always in the sense that revolutionary praxis will divest them of their characteristically uncontrolled development. *Capital* is designed to show us how and why these qualities and characteristics will cease to apply; the "iron laws" mentioned in Marx's "Introduction" of 1867, far from being permanent features spanning successive modes of production, are in fact the hallmarks, "the attributes and the masks", as Merleau-Ponty puts it, of one particular mode of production – capitalism – and are of no application outside it. "A Marxist political economy can speak of laws only within qualitatively distinct structures, which must be described in terms of history", Merleau-Ponty, again accurately, points out; he goes on to say that "a priori, scientism seems a conservative idea, since it causes us to mistake the merely momentary

21 Marx to the editorial board of the *Otechestvenniye Zapiski*, November 1877 in Karl Marx and Friedrich Engels, *Selected Correspondence* (hereafter cited as *MESC*), Moscow, Foreign Languages Publishing House, 1965, p. 313. Friedrich Engels, *Anti-Dühring*, Moscow, Foreign Languages Publishing House, 1962, p. 504; Engels to Schmidt, 1 November 1891, in *MESC*, p. 590.

for the eternal"[22] – a confusion that Marx's work, we might add, is specifically designed to avoid.

Marx's analyses in *Capital* constantly look through the highly abstract yet visible categories dealt with by the political economists, in order to disclose their "fetish character" and to demonstrate what lies not beyond but within them – the "hidden haunts of production, on whose threshold we are faced with the inscription: No admittance, except on business".[23] Such a procedure, such a *Forschungsweise*, would have seemed "metaphysical" to any positivist; yet, in contrast to the positivists' denial of "essences" in any form, Marx constantly sought the "hidden substratum" (*verborgener Hintergrund*), the "inner connections" (*innere Bäude*), the "intrinsic movements" (*innerliche Bewegungen*), the "inner structure" (*innerer Bau*) connecting the phenomena under investigation. These terms, and terms like them, occur at crucial points in Marx's writings. Marx's search would be futile to any positivist; yet Marx, who believed that "scientific truth is always paradox if judged by everyday experience, which catches only the delusive appearance of things", even went so far as to say that "all science would be superfluous if the manifest form [*Erscheinungsform*] and the essence of things directly coincided",[24] a statement no positivist would make. Positivists, whose nominalism generally entails the proposition that science cannot discover the difference between the given and the essences of any shape or form, also usually believe that science is a classification of facts which adds nothing to their contents, so that generalization per se has no independent cognitive function. To put the same point another way, positivists hold that the analytic procedures of concept-formation and theory-formation do not themselves change the domain of observed "reality"; so that abstractions add nothing to the empirically derived "facts", facts that are directly observable in the same manner to different scientists. Reality to the positivist is, then, directly observable; an observable pattern of events can be seen without interpreting their "meaning".

The standard objection to this positivist mode of procedure is worth mentioning, in so far as it points to a trap into which positivists fall, while Marx avoids it. The objection is that with a scientistic definition of knowledge, i.e. if we are to believe that all knowledge derives from the empirical-analytical method, how can we establish the validity of the metatheoretical postulate of scientism itself? To say that knowledge derives from scientific procedure, a metatheoretical claim, and then to try to prove this by pointing to the results of science is to involve oneself in a circle, because the very principle of scientific meaning is unjustified.

Marx's self-proclaimed project was that of a critique of political economy, and his method was a critique of concepts, including a hard look at what these concepts refer to, a critique which spans the *Economic and Philosophic*

22 Maurice Merleau-Ponty, *Sense and Non-sense*, tr. H.L. and P.A. Dreyfus, Evanston, Northwestern University Press, 1964, pp. 125–6.

23 Marx, *Capital*, vol. I, p. 176.

24 Karl Marx, *Capital*, vol. III, Moscow, Foreign Languages Publishing House, 1961, p. 797.

Manuscripts, and *Poverty of Philosophy*, the *Grundrisse* and *Capital*, a method that consists, inter alia, in a critical analysis of capitalism by means of a critique of those concepts that would be shown to be germane to capitalism. It is within this context that the word "scientific" is brought into play. Marx intended his work, the projected "critique of political economy" that he never completed, to be a contribution to the working-class movement, "a scientific victory for our party".[25]

The word scientific was brought in, originally, not by Marx but by the English political economists whose work he was criticizing, since they were wont to refer to their subject as a science and to their own work as scientific, on the straightforward grounds that they were dealing with observed facts rather than imposed metaphysical categories. Political economy was commonly seen as "the science of the production, distribution and consumption of wealth".[26] However straightforward and unproblematic this may seem, Marx, for his part, was constantly engaged in disputing its very foundations – but he did not do so without appropriating "science" for his own use. In a letter to Engels in 1859, for example, we find Marx saying of his projected "Critique of Economic Categories" that

> the presentation and style is completely scientific and therefore not police-prone in the usual sense … [this means that] the dogs cannot limit their criticism to mere bitching about [political] tendencies, and the whole looks exceedingly serious and scientific; I force the scoundrels to take my later views on capital rather seriously.[27]

Marx's "Critique of Economic Categories" appeared in the form of *Capital*, and, earlier, the *Grundrisse*, where we find the same kind of critique of economic categories, still described as "scientific", as the one we found in the *Economic and Philosophic Manuscripts* and *The German Ideology*. For instance Marx is severely critical of John Stuart Mill's view that "the laws and conditions of the production of wealth partake of the character of physical truths … they are ultimate laws, which we did not make, and to which we can only conform". Mill's denial of Vico's *verum factum* did not endear him to Marx. Mill's principles of production – "natural agents", capital, the division of labour, and (worse still) labour itself – are presented as constituent "eternal natural laws independent of history" so that, according to Marx, Mill's work "is the occasion for passing off, in an underhand way, bourgeois relations as irrevocable natural laws of society in the abstract".[28] The criticism is a familiar one to readers of Marx, who was

25 Marx to Weydemeyer, 1 February 1859, *MEW*, vol. xxix, p. 572.

26 *Encyclopaedia Britannica*, 1885 edition, vol. XIX, pp. 346–7.

27 Marx to Engels, 13–15 January 1859, quoted in Terell Carver, ed., *Karl Marx*: *Texts on Method*, Oxford, Basil Blackwell, 1975, p. 10.

28 John Stuart Mill, *Principles of Political Economy*, London, Longman's, Green, 1848, vol. I, pp. 239–40; Carver, *Texts on Method*, p. 107.

deeply suspicious of eternal laws and universal truths, scorning them as trivial, misleading, false, or – if you will – unscientific.

Marx insisted "the system of bourgeois economy, critically presented" is "the presentation of the system" and at the same time, through "this presentation, its critique".[29] The laws of the market present themselves with the force of natural necessity not because the market is in any real, ultimate sense a natural order, but because the blinkers have not been removed from men's eyes, because the laws of capital accumulation operate, as it were, behind men's backs, concealing the fact that the interaction of things to which they refer is in reality nothing but an expression of the social relationships of men to each other. "The weak points in the abstract materialism of natural science," as Marx says in *Capital*, "is a materialism that excludes history and its process, are at once evident from the abstract and ideological conceptions of its spokesmen."[30] In Marx's successive critiques of political economy, "matter", in so far as it appears at all, is presented in conformity with the "Theses on Feuerbach", as a social rather than a simplistically-conceived natural category; all natural categories are, ipso facto, socially mediated. The natural sciences as such, which had been a prime source of materialist assertions ever since the French Enlightenment, provide for Marx no immediate understanding of material reality, because man's relationships to reality are not according to Marx primarily theoretical but practical and modificatory. In one of his last works, and one of the last to be translated into English, Marx emphasized this point. Men are not "confronted" first with the "external" means to the satisfaction of their needs; they do not "stand" in any epistemological relation to them.

> They begin, like every animal, by eating, drinking, etc., hence not by "standing" in a relation, but by relating themselves actively, taking hold of certain things in the external world through action, and thus satisfying their need[s]. (Therefore they begin with production.)

This passage parallels others that are rather better known.[31] The emphasis throughout, in *Capital* as well as *The German Ideology* and the *Economic and Philosophic Manuscripts*, is on labour, labour as an ontological category, on what specifically human agency does and what it brings about. Men, by their very nature, work on the constituent parts of the world – the world they find and the world they find made for them by other men – and thereby change the material world and the human social world at one and the same time.

This view is quite irreducible to a scientistic view of men confronted by an external world not of their own making, a world with its own immutable laws which merely human agency is powerless to deflect. Such a scientistic

29 Carver, *Texts on Method*, p. 157; Marx to Lassalle, 22 February 1885, *MEW*, vol. xxix, p. 550.

30 Marx, *Capital*, vol. I, p. 372, n. 3.

31 Carver, *Texts on Method*, p. 190; Marx, *Capital*, vol. I, pp. 177–8; Marx and Engels, *The German Ideology*, pp. 31–2.

viewpoint, which did influence Engels, and which Engels in turn influenced, has no place in Marx's writings. Even to say that Marx, through an application of "science", aimed at presenting an accurate reflection of the "facts" is to fail to take into account Marx's own methodology, his own amply documented "mode of investigation" (*Forschungsweise*), which was "to appropriate the material in detail, analyze its different forms of development, and trace their inner link".[32] Whatever might be said of this procedure, it has nothing of "science" about it on most non-Marxian definitions. Marx's approach, as contrasted with that of most of those – then or since then – who label their procedures "scientific", is free from any metaphysical assumptions about the ontological primacy of any substance that might be termed "matter". Marx's "Theses on Feuerbach", with their critique of "all materialism up till now", amount to Marx's decisive separation of his own thought from the prevailing French Enlightenment view, a view perpetuated by Feuerbach himself, of natural science and the abstract "materialism" that went along with it. The only thing wrong with Alexander Bogdanov's statement – that "although Marx called his doctrine 'materialism', its central concept is not matter but practice, activity, live labour"[33] – is that Marx was not, for the most part, even inclined to call his doctrine "materialism" at all, probably to avoid confusion with the doctrine so trenchantly criticized in the "Theses on Feuerbach" and elsewhere.

The "Theses" should be seen, inter alia, as an attack on the Cartesian cogito, on the doctrine of the passive mind confronted by the "external" object. To the extent – a considerable extent – that its assertions about nature are isolated from the living practice of men, Engels's philosophy of nature as set forth most dramatically in *The Dialectics of Nature* is subject to the criticisms Marx had levelled in the "Theses on Feuerbach". Marx was too well-educated in philosophy to suppose that he could observe the capitalist world *tout simplement*, marshall data on the "facts", and provide an explanation without simultaneously examining in a critical manner the concepts of political economy, concepts that, themselves, cannot be reduced to the "facts" in any direct or simplistic way, although they obviously refer to them and are to that extent correlative with them. Even so basic a concept (to capitalism) as "the commodity" is described in *Capital* as needing demystifying by its very nature.

> A commodity is, therefore, a mysterious thing, simply because in it the social character of men's labour appears to them as an objective character stamped upon the product of their labour, because the relation of the producers to the sum total of their labour is presented to them as a social relation, existing not between themselves, but between the products of their labour. This is the reason why the products of labour become commodities, social things whose qualities are at once perceptible and imperceptible by

32 Marx, 'Afterword' to *Capital*, vol. I, p. 19.

33 Alexander Bogdanov, quoted by S.V. Utechin, "Philosophy and Society", in Leo Labedz, ed., *Revisionism*, London and New York, Praeger, 1962 [1953], p. 118.

> the senses. In the same way the light from an object is perceived by us not as the subjective excitation of our optic nerve, but as the objective form of something outside the eye itself. But, in the act of seeing, there is, at all events, an actual passage of light from one thing to another, from the external object to the eye. There is a physical relation between physical things. But it is different with commodities.[34]

Marx's method was not one of the straightforward observations of a detached observer, of data-gathering and collation, and the subsequent construction of an explanatory and predictive system. Where, after all, are Marx's predictions – as opposed to the guileless optimism expressed mainly in the privacy of his letters to Engels that "the revolution", like prosperity, was just around the corner? Marx never claimed to be a scientist in this sense. Why should he have claimed this when his own amply-documented methodology denied its very foundation? Marx refused to argue from "matter" on the grounds he had laid down originally in *The German Ideology*: Feuerbach "refers particularly to the view of natural science, he mentions secrets revealed only to the eye of the physicist or chemist";

> but where would natural science be without industry or trade? … Even the objects of the simplest "sensuous certainty" are given him only through social development, industry and commercial relations. The cherry tree, like all fruit trees, was transplanted into our zone [Western Europe], as is well known, by commerce; it was only by virtue of this action of a determinate society at a given time that it was given to the "sensuous certainty" of Feuerbach … even pure natural science is provided with an aim, as with its material, only through trade and activity, through the sensuous activity of men.[35]

It is important to get the sense of this. Any suggestion that all non-human things are products of human activity, in any simplistic way, is obviously false; but Marx is right in thinking that knowledge has its conditions and that these conditions are historical, that is, that they change. How one comes to know is not the same as the truth of what one believes; yet Marx's belief is vindicated that "nature, taken abstractly, for itself, separated from man, is nothing for man". Men, by their very nature, or more properly by their very humanity, apply themselves to the world. The interaction of human, sensuous activity and objectified nature is a process in which man's labour produces the external world facing him. The world apprehended by the senses is in this sense the counterpart of the human being himself. "Nature, as it unfolds in human history, in the genesis of human society, is man's real nature; hence nature, as it develops through industry, albeit in alienated form, is truly anthropological nature."[36] This viewpoint is not the complement but the reverse of Engels's procedure of dedu-

34 Carver, *Texts on Method*, p. 9; *Capital*, vol. I, p. 72.
35 Marx and Engels, *The German Ideology*, p. 58.
36 Bottomore, *Karl Marx, Early Writings*, p. 164.

cing historical laws from the operation of those of nature, conceived as an independent reality external to man.

As Alfred Schmidt has persuasively and perceptively argued, Marx

> does not attempt to assert anything of the material world in abstraction from the practico-intellectual forms of its "appropriation" by a given society … it appears to be impossible to derive the idea of a revolutionary humanism from the self-movement of "matter" conceived through the eyes of particular natural sciences.[37]

Engels and Feuerbach, on the one hand, as well as Marx, on the other, can be taken to demonstrate the force of Schmidt's statement; and, in the case of Marx, this means merely that he remained true to the critique of what he called "all materialism up till now" first stated programmatically in the "Theses on Feuerbach". The external world is accessible to man only in its humanized form – which means, for one thing, that men's consciousness of that world, and their activity within it, cannot be reduced to their behaviour faced with it. (That consciousness and action can be reduced to behaviour is, however, an idea that characterizes certain forms of scientism.)

Marx preserved intact his position that nature is "the primary source of all the instruments and objects of labour" by insisting, in the *Critique of the Gotha Programme*, that nature cannot be so much as apprehended in abstraction from the human activity of producing and constantly reproducing it, of adapting its successive forms for successive human purposes. This may not be a position from which any firm belief in the cognitive value of science as such could be built; but nevertheless, it is a position from which Marx himself never wavered. Man, as the connecting link between the instrument and the object of labour, changes his own nature (and realizes its potentialities) as he deprives external nature of its externality, and mediates nature through himself – the same process that capitalism as a form of alienated social life parodies and perverts when it posits the concepts of use-value (rather than usefulness as such) and exchange-value.[38]

The "Introduction" to the first volume of *Capital* suggests that Marx believed that the discovery of the "laws of motion" governing the development of capitalism was not in principle impossible. This "Introduction" has seemed to some to be the locus classicus of scientistic Marxism, for this reason: it seemed to demonstrate that the "mature" Marx was not so very different from the Engels of *The Dialectics of Nature* after all. These charges, deeply mistaken though they are, deserve consideration. Marx's meaning, upon closer examination of the relevant passages in this "Introduction", is in fact of far more limited application.

Marx in this 1867 "Introduction" is, as we might expect from something addressed to a German readership not too familiar with the ideas of Marx, a

37 Schmidt, *The Concept of Nature in Marx*, pp. 10–11.

38 Marx, 'Critique of the Gotha Programme', in *MESW*, vol. II, p. 18; *Capital*, vol. I, 43; *Capital*, vol. II, Moscow, Foreign Languages Publishing House, 1961, p. 144.

response to the very different ideas of Lassalle. In order to demonstrate to a readership that might otherwise be disinclined to accept an analysis of English capitalism as an analysis of capitalism per se, that "one nation can and should learn from others", Marx is concerned to maintain, above all, that the "classic ground" of the capitalist mode of production is indeed England "and the conditions of production and exchange corresponding to that mode" exist there as nowhere else. "The country that is more developed industrially only shows to the less developed the image of its own future." Why should this be so? Marx says,

> Intrinsically, it is not a question of the higher or lower development of the social antagonisms that result from the natural laws of capitalist production. It is a question of these laws themselves, of these tendencies working with iron necessity towards inevitable results.

Here Marx, far from predicting the inevitability of the advent of Communist society, is actually doing almost the opposite. He is combating complacency. (That the SPD never listened is another story.) According to what are presented to us as the "natural laws" of capitalist production, capitalist society itself is likely to develop internally from a lower to a higher form. This development, Marx goes on to say, is no more than "likely". For even when a society has got on the right track for the discovery of the "natural laws" of its own movement (a discovery that cannot of itself be automatic, or Marx would not have written this in the first place; there would have been no need to do so), "it can neither clear by bold leaps, nor remove by legal enactment, the obstacles offered by the successive phases of its own development. But it can shorten and lessen the birth-pangs". Thus, even though Marx says that "it is the ultimate aim of this work to lay bare the economic law of motion of modern society", and even though he describes "this standpoint" as one from which "the evolution of the economic formation of society is viewed as a process of natural history", his purpose was in fact far less scientistic than many commentators (first and foremost Engels) have supposed. Marx in this "Introduction" was attempting to indicate to his German readers that

> in England the process of social disintegration is palpable. When it has reached a certain point, it must re-act on the continent. There it will take a form more brutal or more humane, according to the degree of development of the working class itself.

Marx's focus throughout is not so much on the status of science as on the tasks facing the German workers' movement.

Genuine science

Far from sharing Engels's well-known belief in the possibility and desirability of a "science of the most general laws of motion" in society (and in nature),

Marx is stopping well short, contenting himself in the 1867 "Introduction" with sounding as "scientific" as possible while remaining as flexible in his prescriptions for the German working-class movement as circumstances (and the residual effects of Lassalleanism) would allow. The "inevitable" working-out of "iron laws" (a Lassallean phrase if ever there was one) is in fact portrayed by Marx as being subject to contingency, as Marx in this "Introduction" was only too well aware; it is, in any case, at best a feature of capitalism – within which mode of production there are distinct national variations that threaten fatally to mislead the German workers' movement. Within capitalism, in any case, as we know from all of Marx' writings (and as we have been given a salutary recent reminder by Lucio Colletti),[39] an altogether peculiar mode of objectivity pertains. The "inevitable" working-out of "iron laws" is not, in Marx's eyes, an invariant attribute of the human condition. It refers to the internal development of capitalism from a lower to a higher stage; and, what is more, there is here, as elsewhere in Marx's writings, as we might expect, an implicit suggestion, not very far below the surface, that once understood and once acted on in a conscious manner, these same "iron laws" will give way to conscious social control of the productive process.

Marx was, of course, prepared and willing to compare his work and methods to those of the natural scientist, for the sake of the favourable connotations of the word science, connotations that were particularly favourable to late nineteenth-century German intellectuals. Yet at the same time it should be acknowledged that Marx was concerned to limit – and to limit with extreme care – the analogies that could be drawn between his work and that of natural scientist. The main body of the first volume of *Capital* is full of such contrasts;[40] but even in the "Introduction" itself this stands out. "[In] the analysis of economic forms," Marx says, "neither microscopes nor chemical reagents are of use. The force of abstraction must replace both" – a statement of methodology no positivist could make or accept. While he did not hesitate to use the empirical discoveries of natural science against spiritualist metaphysics, including the Hegelian variety, his underlying purpose in so doing should not be overlooked. The word "scientific" was used by Marx in contradistinction to the "absolute" truths of "Justice" or "Reason" of the utopians; it was used, as the opposite of the word "arbitrary" or "fantastic", in order to distinguish facts and empirical investigation from pious wishes, including those of the "socialist miracle workers" he was so concerned to denigrate.

The German usage of the word *Wissenschaft* is of still wider application, and was so in Marx's day too. The common German distinction between *Naturwissenschaft* and *Geisteswissenschaft* cannot easily be rendered into English; and the adjective that Marx used, *wissenschaftlich*, is commonly and accurately rendered as "factual", "logical", "non-random", "rigorous", "systematic" as well as

39 Lucio Colletti, "Marxism: Science or Revolution", in Robin Blackburn, ed., *Ideology in Social Science*, London, Fontana, 1972, pp. 369–77.

40 Marx, *Capital*, vol. I, pp. 72, 183, 215.

"scientific" in the narrower, English sense. (Even in French, "la science" can well mean "knowledge", though not to M. Althusser and his followers.) Marx, who constantly attacked other writers, socialist and non-socialist, for their "scientific" pretensions, entertained surprisingly few himself. He can, of course, be accused of vagueness; but the cognitive content and status of the word scientific was not what he took to be the central problem facing him, and facing us. Yet in many ways Marx's usage is less vague than such a statement might suggest. Even in the 1867 "Introduction" to *Capital* the line between appropriating for his own use the positive connotations of the word science, and accepting its denotations (which in many cases known to Marx were overwhelmingly negative) is drawn with some precision. The idea that science, broadly conceived, increases our power to act, that objective knowledge about what men do will increase their freedom and power, does not really tell us very much; after all, Freud believed it just as much as Marx, and Freud and Marx (pace Marcuse *et al.*) have very little else in common. The most that might be allowed in the case of Marx is that his systematic observation of society is not the same thing as "scientific" observation; and that Marx did think that his observations were scientific, for reasons which had nothing to do with any belief in the cognitive value or status of natural science as such.

How, then, did Marx use the term "science"? What did he mean when he described his work as being "scientific"? At widely separated points in his career, Marx lambasted Proudhon's "scientific" pretensions ("the twaddle about 'science' and sham display of it, which are always so unedifying"); the *Poverty of Philosophy*, its author was to recall, shows "how Proudhon and the utopians are hunting for a so-called 'science' by which a formula for the 'solution of the social problem' is to be excogitated a priori, instead of deriving their science from a critical knowledge of the social movement". Proudhon "wants to soar as a man of science above the bourgeois and the proletarians"; he is, however, "in agreement with both in wanting to fall back on the authority of science [which] for him reduced itself to the slender proportions of a scientific formula".[41] These accusations are important; Marx himself has been accused of wanting to fall back on the authority of science, because, it is said, he was a "materialist" who broke with Hegelian idealism.

This charge deserves meeting. Marx stressed the need for "empirical observation [which] must … bring out empirically, and without any mystification and speculation, the connection of the social and political structures with production"; he believed that even his early "conclusions [were] the fruit of an entirely empirical analysis based on a careful study of political economy";[42] while Proudhon, and others like him, set out to apply "ideal" standards (one of which, in Proudhon's case, was "science" itself) to the study of society and history, Marx set out to base his analyses on what men actually do in society. This dis-

41 Marx to J.B. Schweitzer, 24 January 1865; appendix to Marx, *Poverty of Philosophy*, pp. 186–94. Passages cited are on pp. 190–1.

42 Marx and Engels, *The German Ideology*, pp. 38–9; Marx, *Early Writings*, p. 63; *MEGA*, vol. I/3, p. 33.

tinction raises an important methodological point. Work, for Marx, is not, for all its centrality, a "metabolic" process involving man, nature and society if this means that it involves a metaphysical conception of praxis which may be invoked as an absolute point of departure or as a pre-categorical postulate. The world is not a scientific laboratory writ large. Marx's emphasis on constitutive labour, indeed, depends upon his belief that there are no such extrinsic principles, preceding empirical enquiry that can be "applied" to the "facts". To see dialectic as a universal *passepartout*, or as a formula into which the "facts" may be squeezed, is to misconstrue the nature of dialectical methodology. Observation does not proceed from someone on the sidelines of society, for society has no sidelines. It also has no universals, so Marx makes use of any universal category in only the most restricted of senses.

> There are characteristics which all stages of production have in common, and which are established as general ones by the mind; but the so-called general characteristics of production are nothing more than these abstract moments with which no real historical stage of production can be grasped.[43]

This means, inter alia, that the idea that scientific method, any scientific method, embodies constitutive force is a utopian delusion.

> Just as the economists are the scientific representatives of the bourgeois class, so the socialists and the communists are the theoreticians of the proletarian class. So long as the proletariat is not yet sufficiently developed to constitute itself as a class,… these theoreticians are merely utopians who, to meet the wants of the oppressed classes, improvise systems and go in search of a regenerating science. But in the measure that history moves forward, and with it the struggle of the proletariat assumes clearer outlines, they no longer need to seek science in their minds; they have only to take note of what is happening before their eyes and become its mouthpiece.… From this moment, science, which is a product of the historical movement, has associated itself with it, has ceased to be doctrinaire, and has become revolutionary.[44]

Marx's distinction between doctrinaire, utopian science and revolutionary science is more relevant here than either that between "utopian" and "scientific"

43 Karl Marx, *Grundrisse*, tr. Martin Nicolaus, Harmondsworth, Penguin Books, 1973, p. 88; cf. ibid., p. 85, and Galvano della Volpe, "Methodologische Fragen in Karl Marx' Schriften von 1843 bis 1859", *Deutsche Zeitschrift fur Philosophie*, (East) Berlin, Dietz Verlag, 1958, vol. 6, pp. 777–804, esp. pp. 792–804, which deal with the *Grundrisse.*

44 Marx, *Poverty of Philosophy*, p. 120. Marx refers to this passage in his "Marginal Notes" on Bakunin's *Statism and Anarchy* (which he read as an aid to learning Russian). "Utopian socialism … wants to attach people to new delusions instead of confining its science to the knowledge of the social movement made by the people itself" (*MEW*, vol. xviii, p. 636; Karl Marx, *The First International and After*, ed. and tr. David Fernbach, Harmondsworth, Penguin Books, 1974, pp. 337).

socialism (to which Marx's distinction does not correspond) or, indeed, that between Hegelian "idealism" and Marx's "materialism". This latter, overdrawn schematization, which has bedevilled even recent Marx scholarship, is in no way implied by Marx's own "materialist interpretation of history" which is wholly compatible, methodologically, with his attacks on "all materialism up till now" (in the "Theses on Feuerbach") and on "the abstract materialism of natural science" (in *Capital*).[45] The materialism Marx attacks in either case is that of the French Enlightenment, as mediated (with some Young-Hegelian emendations) by Feuerbach. Eighteenth-century materialism is not, of course, all of a piece, although many aspects of it favour a doctrinaire approach to, and evaluation of, natural science, an approach which is attacked by Marx (though, notably, not by Engels) for reasons that tell us a great deal about Marx's conception of non-doctrinaire science. The mechanistic Cartesian view of nature, which rejects any distinction between *res extensa* and *res cogitans*, entails the primacy of matter, a *causa finalis*; all motion, including that of the mind, is said to derive from that which inheres in matter. The soul, for which, mutatis mutandis, we may read "consciousness", is a modus of the body; because our ideas are no more than mechanical motions, there is on this reductive – indeed, reductionist – view nothing distinctive about human ideas and actions; and Marx, for this very reason, was hostile to Descartes's bete machine, to *L'homme machine* of la Mettrie, and to d'Holbach's portrayal of man as *matière sensible*. Anti-metaphysical materialism, which informs nineteenth-century positivism, can be dismissed as a *contradictio in adjecto* if "matter" itself is seen as a metaphysical category (although this point seems not to have occurred to Engels, whose *Dialectics of Nature* reduces everything either to energy or to matter)[46] but this argument cannot apply to those materialists who attempted to overcome an acknowledged dualism of man and nature by using a Lockean tabula rasa epistemology, and who were closer to Marx – if not to Engels – than Cabanis and the other Cartesians. Their efforts led not to positivism, but, by indirection, to socialism; even so, the belief that human development may be predicated upon educational manipulation of the sources of perception, which may be found in Babeuf, Fourier, Cabet and Owen as well as Condorcet, is also condemned by Marx. It cannot account for historical change because it, too, reduces men to the state of being acted upon from without, and reduces the historicity of human nature to the way in which men are confronted with *res gestae*. Even this

45 Marx, *Capital*, vol. I, p. 372, n. 2.

46 "By matter [Engels] meant the Daltonian billiard ball atoms envisaged by contemporary Victorian science" and, *mutatis mutandis*, by Democritus. See Loren R. Graham, *Science and Philosophy in the Soviet Union*, London, Allen Lane, 1974, *passim*.; and an anonymous review of it in *The Times Literary Supplement*, 22 February 1974, p. 175. That "the materialist conception of nature is still not the materialist conception of history" was, however, acknowledged by Plekhanov. Cf. George Plekhanov, "For the 60th Anniversary of Hegel's Death", *Selected Philosophical Works*, tr. R. Dixon, Moscow, Foreign Languages Publishing House, n.d., vol. I, p. 472; cf. 'The Development of the Monist View of History', *Selected Philosophical Works*, p. 606.

Lockean materialism regards men – who register perceptions and act according to the impulses received – as supine, passive and receptive; but unlike Cartesian materialism, which has no bearing on man and society *sui generis*, it is sufficiently social in its bearing to be able to develop, at times, a real theory of the historicity of knowledge. To Condillac, for instance, since knowledge is impossible without language, it must be the product of social life in the sense that language is; and this argument is closer, in fact, to the attack in *The German Ideology* on German idealism[47] than it is to Locke's *An Essay Concerning Human Understanding*.

Marx also made use of some arguments developed by German idealism against the excesses of "all materialism up till now"; "the active side [of social existence] was developed" (however "abstractly") "in opposition to materialism".[48] While Hegel, unlike Feuerbach, had stressed the world-constitutive side of our coming to-know, Marx, who was closer in this respect to Condillac, stressed that the constitutive function of thought and action on the world arises not from thought but from men's life in the world. The extreme radicalism of what follows – "after the disappearance of the other-worldliness of truth [*das Jenseits der Wahrheit*] the task of history is to establish the truth of this-worldliness [*das Wahrheit des Diesseits*]"[49] – is hostile to Engels's *Dialectics of Nature* and to Lenin's warmed-over copy theory of perception in *Materialism and Empirio-criticism* alike. Because nature itself is not independent in the required sense, scientific truth is no mere correspondence of human perceptions and judgments to an independent reality; there can be no real apprehension of the world without its alteration, no perception without action on the object perceived. Marx substitutes the directionality of history for Hegel's reflexivity of consciousness in society; not only is our practice, as with Vico, our guarantee of knowing the reality we have made, but we are both actors and authors in our own drama in the additional sense that we may have no real knowledge of the world without practical activity (*praktische Tätigkeit*) within it. Work creates human reality, extricates it from a given situation, and goes beyond given conditions, continually remaking what had been made.

What Marx abhorred about idealism was not its constitutive side (which he extended to cover labour, against naïve materialism) but its abstract, speculative side. Yet, of course, "the abstract materialism of natural science" may be just as speculative as idealism, and Marx is perfectly aware of this. "The dispute over the reality or non-reality of thinking that is isolated from practice is a purely scholastic question";[50] and this is just as true of scientific thinking as of any

47 See Marx and Engels, *The German Ideology*, pp. 37, 41–2, 491.

48 Marx, "First Thesis on Feuerbach": "Practical activity is apprehended [by Feuerbach] only in its dirty-Jewish manifestation", i.e. Feuerbach arrived at practical activity only *after* he had considered the "proper" human attitude – which was in his view (according to Marx) "Theoretical" and "Christian".

49 *MEGA*, vol. I/1/I, p. 608; Karl Marx, *Critique of Hegel's Philosophy of Right*, ed. and tr. Annette Jolin and Joseph O'Malley, Cambridge University Press, 1972, p. 132.

50 Marx, 'Second Thesis on Feuerbach'.

other kind. Marx, indeed, regarded scientific thinking as either scholastic or practical in so early a work as his doctoral dissertation, "Differenz der demokritischen und epikureischen Naturphilosophie". Marx in 1841 favoured Epicurus over Democritus because, unlike Democritus, who was concerned with the atom as a pure, "abstract" category, and with atomism as a hypothesis explaining physical nature *tout court*, Epicurus sought to understand nature in order to rid men of spiritual bondage and teach them a better way of life; Epicurus, "the greatest Greek *Aufklärer*",[51] founded science as something that would include, not exclude as with Democritus, man's consciousness and action in the world. Engels, who also explained man and nature in consonant terms, is nevertheless closer to Democritus (and, mutatis mutandis, to Descartes), not so much because of the atomic view of matter he shares with Democritus but because he applied the terms he had derived from a hypostatized natural science across the board to society, and because to this extent he regarded natural science as prior to history.

For Marx, by contrast, the truths of natural science, far from providing any model for truths about society, are themselves dependent on the social purposes which provide the climate and the context of the scientist's enterprise; "genuine science" has to proceed from "sensuous need",[52] not vice versa. The crucial distinction in Marx's thought, a distinction very much to the fore whenever he discussed science, is not the supposed polarity of idealism and materialism: a stress on activity and a materialist epistemology are not the same thing. Marx, to whom theory itself becomes a material force once it moves the masses,[53] in fact attempted an ambitious replacement of epistemology by ontology.[54] The crucial distinction in his thought is that between speculation, contemplation and "abstract" reflection, on the one hand, and reality, history, society, concreteness and the empirical enquiry that is appropriate to it, on the other. Engels oversimplifies, indeed parodies, this distinction by making of it a contrast between utopian and scientific thinking; yet abstract speculation, as Marx was well aware when he wrote about the French materialists and about Democritus, specifically, even prominently, includes much doctrinaire scientific reasoning. In Marx's own words, "one basis for life and another for science is a priori false";[55] science, in isolation from society, is as speculative as idealism at its worst.

51 Marx and Engels, *The German Ideology*, p. 147. For Marx's doctoral dissertation, see *MEGA*, vol. I/1/I, pp. 1 ff; Norman Livergood, *Activity in Marx's Philosophy*, The Hague: Martinus Nijhoff, 1967, *passim*. Cf. David McLellan, *Marx before Marxism*, New York, Harper & Row, 1970, p. 53n.

52 Bottomore, *Karl Marx, Early Writings*, pp. 163–4. Marx in the Manuscripts regarded "the great achievement of Feuerbach" over Hegel to have been that the "founded genuine materialism and positive science by making the social relationship of 'man to man' the basic principle of his theory", ibid., p. 197; in *The German Ideology* (1845–46) he criticized Feuerbach for not pushing his "achievement" towards a "practical" materialism, but never changed his mind about science.

53 Marx, *Critique of Hegel's Philosophy of Right*, p. 137.

54 I am indebted to Reinhard Bendix for putting the problem to me in these terms.

55 Bottomore, *Karl Marx, Early Writings*, p. 164.

2 Engels and "scientific socialism"

Engels claimed in 1892 that his *Socialism: Utopian and Scientific* (three chapters excerpted from his longer and more difficult *Anti-Dühring*) was circulating in ten languages. "I am not aware," he wrote (rather Germanically), "that any other socialist work, not even our *Communist Manifesto* or Marx's *Capital*, has been so often translated. In Germany, it has had four editions of about 20,000 copies in all".[1] This is a sobering, even alarming, claim. It suggests that significant numbers of interested readers were receptive, not necessarily to Marx in any direct sense, but to a Marxism whose scope was self-consciously extended – but also narrowed – by Engels. As Engels himself condescendingly put it in the privacy of a letter, "Most people are too idle to read thick books like *Capital*, so a little pamphlet does the job much more quickly."[2] In what follows, I argue that this extension – and narrowing – needs urgently to be interrogated. The notion that *Socialism: Utopian and Scientific* does the job of *Capital* is an instance of breathtaking hubris. I argue further that Engels's arguments in *Socialism: Utopian and Scientific* are in significant respects at variance and plainly incompatible with what Marx had said, and that the wide dissemination of Engels's arguments as surrogates for Marx's own has had effects – not just on the reception of Marx's doctrines but on the development of Marxism as a political movement – that were little short of disastrous.

The effects of distortion

The development of historical materialism over the late nineteenth and early twentieth centuries established a canon of theoretical writings within which Engels's offerings occupied a hallowed place. The existence of a canon, which at first was not imposed, points to a thirst for theory among German Marxists, as

1 Karl Marx and Friedrich Engels, *Selected Works in Two Volumes*, Moscow, Progress Publishers, 1962, vol. 2, pp. 94–95; Carver, Terrell, *Engels*, Oxford, Oxford University Press, 1981, p. 46.

2 Karl Marx and Friedrich Engels, *Collected Works in English*, New York, International Publishers, 1975, vol. 35, p. 396; see Terrell Carver, *Marx and Engels: The Intellectual Relationship*, Brighton, Harvester/Wheatsheaf, 1983, p. 132.

does the publication history of the texts that made it up, few of which were Marx's. Eric Hobsbawm writes

> In Germany the average number of copies per edition printed of the *Communist Manifesto* before 1905 was a mere 2,000 or at most 3,000 copies, though thereafter the size of the editions increased. For a comparison, Kautsky's *Social Revolution* (Part I) was printed in an edition of 7,000 in 1903 and 21,500 in 1905. Bebel's *Christentum und Sozialismus* has sold 37,000 copies between 1898 and 1902, followed by another edition of 20,000 in 1903, and the [German Social Democratic] party's *Erfurt Programme* (1891) was distributed in 120,000 copies.[3]

The reputation and influence of these works, which at one time was considerable, did not survive the First World War and the unexpected triumph of the Bolshevik Revolution in Russia (1917). What did survive these developments was the canonical status of Engels's works, works either like *Anti-Dühring* and *Socialism: Utopian and Scientific*, which were given a new lease of life by the Russian Revolution, or works like *Dialectics of Nature*, which were published for the first time in its wake. Engels failed to complete and publish *Dialectics of Nature* in his own lifetime. It was published and translated in short order in the Soviet Union and diffused widely, there and elsewhere, even though its editor, David B. Riazanov, the director of the Marx-Engels Institute (note the name), had believed quite correctly, that much – some would say most – of what Engels had to say about natural science in the 1870s (when he put aside work on the book in order to write *Anti-Dühring*) was now obsolete. Nevertheless, it happened to fit into "the scientistic orientation of Marxism which, long popular in Russia … was reinforced during the Stalin era"[4] – a "scientistic" orientation we might add, that Engels's already-published offerings played no small part in inspiring. Engels, that is to say, emerged over time as "the father of dialectical and historical materialism, the philosophical and historiographical doctrines … [that] became the basis of official philosophy and history in the Soviet Union and in most other countries that declare themselves Marxist".[5] To the extent that Marx's early writings did not jibe with the canonical works – and we should remember that the Soviet canon, unlike the SPD canon, was state-imposed – these early works were all too frequently marginalized, and their links with Marx's later writings remained uninvestigated, save by mavericks writing in the West.

Yet selectivity had its limits. The CPSU's far-from-grudging imprimatur, its desire to put *Dialectics of Nature* into print in the shortest possible order, indicates that this same Soviet canon proved mightily hospitable to Engels's writings.

The Russian Revolution … transferred the centre of Marxian textual scholar-

3 Eric J. Hobsbawm, *The History of Marxism*, vol. 1, *Marxism in Marx's Day*, Bloomington, Indiana University Press, 1982, p. 331.

4 Hobsbawm, *The History of Marxism*, p. 336.

5 Carver, *Engels*, p. 48.

ship to a generation of editors who no longer had personal contacts with Marx, or more usually with the old Engels … his new group was therefore no longer directly influenced either by Engels's personal judgments on the classic writings or by questions of tact or expediency … which had so obviously influenced Marx's and Engels's immediate literacy executors [Eduard Bernstein, Karl Kautsky, August Bebel].… [C]ommunist (and especially Russian) editors tended – sometimes quite correctly – to interpret the omissions and modifications of earlier texts by German Social Democracy as 'opportunist' distortions."[6]

Yet it never entered the minds of the same Russian editors and Party stalwarts, who derogated German Social Democrats as "opportunists", to disparage Engels in anything like the same way. To the contrary, the theoreticians of the Marx-Engels Institute in Moscow presented Engels – his own disclaimers notwithstanding – as someone he had never claimed to be, someone on equal footing with Marx himself as a "classic" theorist and founding father.

The Marxist notables of the SPD and the Second International (1889–1914) had taken Engels, who had never claimed to be Marx's intellectual equal, at his word. They treated him personally as he treated himself, as Marx's junior partner. Russian Marxists, who did not have to deal at first hand with Engels's principled protestations, were governed instead by their own need to establish continuities – between Marx and Engels and thus among Marx, Engels, Lenin, Stalin, and whoever else was in vogue at the time. We have no way of knowing with any certainty whether Engels would have welcomed or approved such a development – if indeed "development" is the right word to employ, given the intellectually downward slope of the sequence. But what we can establish with some certainty is that Engels, whatever his intentions might have been, did much to make this sorry sequence possible. There is at least one sense in which the first believer in the mythic joint identity of Marx and Engels was none other than Engels himself.[7] To the extent that he appointed himself the posthumous alter ego of Marx (Marx's literary executor, one might say, in more senses than one), Engels is responsible for creating some of the conditions in which this same myth could take root and flourish, and in which there could be an E in the MEGA (the *Marx-Engels Gesamtausgabe*, the edition of their complete works that was to have been published in the Soviet Union before Riazanov's purge).

It is with Engel's canonical status in mind, his canonical status both within the SPD and – there is something remarkable about this double service – within the CPSU, that we should re-examine Engels's immense productivity, as theorist as well as *éminence grise*, between Marx's death in 1883 and his own in 1895 (the very period, on his own admission, when *Socialism: Utopian and Scientific* began to circulate widely). For he laboured prodigiously, setting himself up as "the custodian not only of Marx's works, but of the relationship between [Marx and Engels] itself".[8] He once complained that the translator of his *Condition of*

6 Hobsbawm, *The History of Marxism*, p. 332.
7 Carver, *Engels*, pp. 73–6.
8 Carver, *Marx and Engels*, p. 118.

the Working Class in England, Florence Kelly Wischnewetzky, "translates like a factory", but he produced texts like a factory himself.

> In the years after Marx's death … Engels produced prefaces to new editions of their *Communist Manifesto* (five editions), one of his own *The Condition of the Working Class in England* (two editions) and of (several) works by Marx, *The Poverty of Philosophy*, *Wage-Labour* and *Capital, The Communist Trial in Cologne* and *The Class Struggles in France.* To these works he contributed editorial notes and changes, but his principal projects as editor were the second and third volumes of *Capital* (with prefaces).[9]

Engels put together *Capital* from Marx's scattered unpublished notes and drafts: it "has come down to us not as Marx intended it to, but as Engels thought he would have intended to … [even its] first volume is also a text finalized by Engels and not by Marx".[10] This means at one level that some of Marx's writings were made more widely available than ever before, thanks to Engels's diligence (and for the record, that of Kautsky, who edited *Theories of Surplus Value* and Bernstein, who edited Marx and Engels's correspondence). At another level, however, these were, in Hobsbawm's words, "a corpus of 'finished' theoretical writings [that were] intended as such by Engels, whose own writings attempted to fill the gap left by Marx and bring earlier publications up to date".[11]

Marx's writings, which often took the form of "penetrating but convoluted critiques" and which contain more than their fair share of cryptic or gnomic utterances, could well be regarded as complex and in need of the kind of simplification and popularization that Engels was not alone in bringing to bear. Engels's most recent English-language biographer points to a "steady focus on intended audience, quick publication and immediate effect" as characteristics of Engels's – though certainly not of Marx's – writings. Engels did not share Marx's "penchant for overblown satires," satires that were often mordant and heavy-handed into the bargain.[12] However *terrible* he might have been – and he makes an unlikely villain – Engels was very much the *simplificateur*. But for all this, Hobsbawm's further point begs the question whether Marx would have agreed that what he had not covered in his own work left "gaps" of the kind that needed to be "filled" by others. This is a question to which I shall return.

Engels's relentless industriousness was not restricted to the reproduction or updating of Marx's texts. He also produced a large number of his own, which (we should remember) circulated, by and large, much more widely. Their scope and variety is at first glance impressive. Engels's *Peasant War in Germany* could well be regarded as "the first Marxist work of history"; Engels also could well be regarded as the first Marxist anthropologist on the basis of *The Origin of*

9 Carver, *Engels*, pp. 42–3.
10 Hobsbawm, *The History of Marxism*, p. 330.
11 Ibid.
12 Terrell Carver, *Friedrich Engels: His Life and Thought*, London, Macmillan, 1989, p. 181.

the Family, Private Property, and the State and his manuscript on "Labour in the Transition from Ape to Man" (an early, prototypical attempt – the first of many – to combine Marx and Darwin). Nor is it too much to identify Engels as "the first Marxologist", for in writing *Ludwig Feuerbach and the Outcome of German Classic Philosophy* in 1888 (and by adding Marx's hitherto-unpublished "Theses on Feuerbach" – in an edited form – as an appendix) Engels "launched the first enquiry into young Marx, tracing influences upon him, primarily philosophical, and searching in the earlier works for enlightenment concerning the origins and meanings of the later ones".[13] That *Feuerbach* is evidently a skewed account of Marx's development[14] may be less important than what the book stood for. It established a modus operandi for dealing with Marx's development as a theorist, one that is still, in its broadest sense, followed today. There is more than one sense in which "the study of Marx has been footnotes to Engels".[15] These are achievements of some moment, but whose moment depends, in large measure, on the assertion of a joint identity between Marx and Engels that accompanied them into the canon; Engels referred self-consciously to "our doctrine" on several occasions. Engels, in *Anti-Dühring*, tried to produce "an encyclopaedic survey of our conception of … philosophical, natural, scientific and historical problems".[16] But his use of the first-person plural is misprized. There is no evidence for any joint doctrine outside of Engels's insistence that it was somehow – or had to be – "there". Let us be plain. Engels's post-Marxian doctrines owe little or nothing to the man he called his mentor. Historical materialism – Engels's term – was something left to us not by Marx, but by Engels (even though he originally credited it to Marx). Even if – or precisely because – Engels "brought Marxism into existence" and "put Marxism on the map",[17] Engels's Marxism had an improperly scientistic aspect that is radically, and demonstrably, at variance with Marx's approach, method, and even subject matter.

Engels claimed, in *Socialism: Utopian and Scientific* and elsewhere, that Marx's method produced a law of historical development of the kind that invited comparison with Darwinian biology. He proceeded blithely but fatefully to make claims about the certitude and universality of this "law" that have no counterpart in any of Marx's writings. "Just as Darwin discovered the law of development of organic nature," Engels declaimed at Marx's graveside, "so Marx discovered the law of development of human history"[18] – a law that is, however, nowhere to be found in Marx's writings. Marx's laws of capitalist development – which are tendential lawlike statements rather than anything else – were never invented to have any application outside the capitalist mode of

13 Carver, *Engels*, p. 53.

14 Terrell Carver, *Marx and Engels: The Intellectual Relationship*, Brighton, Harvester/Wheatsheaf, 1983, pp. 137–9.

15 Terrell Carver, "Marx, Engels and Scholarship", *Political Studies* 32: p. 256, 1984.

16 Marx and Engels, *Collected Works*, 36: 136.

17 Carver, *Engels*, p. 38.

18 Marx and Engels, *Selected Works in Two Volumes*, vol. 2, p. 167.

production. Marx, unlike Engels, never equated these laws with the laws of matter in motion, laws that he never even discussed. Engels, not to put too fine a point on it, departed from Marx in claiming that he had found a historical law in accord, in some ultimate causal sense, with all events. Neither Engels's view that one, unitary set of dialectical laws account for all phenomena nor his view that "dialectical philosophy itself is nothing more than the mere reflection of this process in the thinking brain"[19] appeared in print before Marx's death. Moreover, "by interpreting 'material life' [Marx's phrase] to imply the materialism of the physical sciences, Engels glossed Marx's view of [individuals and their] material productive activity out of all recognition".[20] Indeed, Engels's unwarranted extraction from Marx of a scientistic historical materialism "gave the impression that Marx was merely reflecting a historical course" in his own theoretical writings, rather than doing what he said he was doing: "subjecting a body of economic theory (*Capital*'s very subtitle is 'Critique of Political Economy') to logical, philosophical, mathematical, social, political, and historical analysis."[21]

This impression, wrongheaded though it was, became rapidly, indeed eagerly, seized upon by others – either by those in Germany who were intent on developing Engels's historical materialism into a *Weltanschauung* (or worldview), or by those in Russia to whom historical materialism so understood (and shorn of its "opportunistic" aspects, to be sure) needed assimilation within that Soviet monster, dialectical materialism. The implications of such seizures, both for the reception or understanding of Marx's thought and for Marxism's subsequent, and consequent, degeneration into an ossified dogma were, in a word, disastrous. Marxism in short order became what it has been ever since: a galaxy of contending creeds within which Marx's thought, effectively marginalized in the jostle at the very point where it should have been most useful, occupies an ambiguous place. Historical materialism perforce turned into what was not so much a means of explanation as an object of study in its own right – by which point the damage was well and truly done. Even before the Bolshevik Revolution set it in stone, historical materialism had become "an object of exegesis independent of the complexities it was designed to summarize".[22]

Engels was of course by no means the sole person to blame for this sorry story of confusion worse confounded. But he bears a degree and kind of responsibility for it, in the sense that his misrepresentation of Marx's legacy made possible or sanctioned in advance later, worse misrepresentations, which came almost to feed on one another exponentially. Even though a fateful degree and kind of distortion of Marx's views can be laid, for this reason, fairly and squarely at Engels's door, mendacity and perfidy cannot. (Would that we could say the same of his successors, who garbled Marx's message even further.) Even though Engels never claimed to have familiarized Marx with the arguments of

19 Marx, and Engels, *Selected Works in Two Volumes*, vol. 2, p. 363.
20 Carver, *Engels*, p. 68.
21 Carver, *Engels*, p. 40.
22 Carver, *Engels*, p. 63.

Dialectics of Nature, it probably never occurred to Engels that his accounts of what Marx had really meant – or must have meant – could conflict with Marx's insights, or that his extensions of what he took to be Marx's method into uncharted regions were in any way out of line or incompatible with what Marx had accomplished.[23] That Engels was anything but the last of the true believers in the mythical joint identity of Marx and Engels speaks to and impugns the ulterior motives of later theorists, stalwarts and doctrinaires whose utterances neither Marx nor Engels could possibly have foreseen. But if the employment of Marx's resources was dogmatic and slanted from the outset, and if, as seems clear, not all of this was Engels's responsibility, he still has a lot to answer for. By making of Marxism a more universal, more scientistic theory than Marx had ever wanted it to be, Engels left behind the impression that Marx had provided posterity with a key to unlock every door – which leaves Marx himself as a historical figure high and dry.

The disservice done to Marx by the orthodox Marxist-Leninist world-view is to have turned his thought into a kind of overarching theory that Marx never intended to provide. Marxism-Leninism constructed around Marx's writings, to the extent that these were made available, a grand theory concerned with the ultimate laws and constituents of the universe, the natural as well as the social world, even though Marx himself had maintained discretion on such cosmic questions. Naturalism and cosmology were distant from, even alien to, Marx's brief, the critique of political economy. Worse still, it was in a sense precisely because Marx had remained reticent on these issues, while claiming a more limited scientific status for his more narrowly defined field of inquiry, that his admirers and followers – to whom Marx's reticence evidently seemed strange and unnerving – felt the need to fill in the "gaps" and construct a coherent, comprehensive system of materialist metaphysics. Yet Marx's sustained silence about many of the issues that came to be held to constitute his "system" denoted not a failure of scholarly nerve but a well-judged reluctance to extend his arguments into the domains of nature and physical science, domains to which his arguments could have no meaningful application. When we ask ourselves who thought that Marx's arguments could and should be extended in such untoward directions and who regarded natural science and the laws of thought as "gaps" needing to be "filled" with Marxist argumentation, Engels is the earliest theorist to snap into focus.

Eric Hobsbawm claims that *Anti-Dühring* was the book "through which, in effect, the international socialist movement was to become familiar with Marx's thought on questions other than political economy".[24] But quite apart from the probability that this honour should be claimed, not by the ponderous and elephantine *pièce de circonstance* that was *Anti-Dühring*, but by *Socialism: Utopian and Scientific* instead, Hobsbawm's claim is disingenuous. Marx, by 1877–78, when *Anti-Dühring* first appeared, had written very little on "questions

23 Carver, *Engels*, p. 60.

24 Hobsbawm, *The History of Marxism*, p. 328.

other than political economy", at least according to his own rather broad understanding of the term, and in future years was to add even less. This means that the international socialist movement had perforce to be made "familiar" with something having little real existence. Small wonder, perhaps, that such familiarity was quick to breed contempt among readers who were not predisposed to accept socialism of any stripe but who were nevertheless content for this very reason to credit *Anti-Dühring* as a definitive statement of Marx's doctrine – the very thing it was not.

The pattern of distortion

In the words of Lezsek Kolakowski,

> [It] does not appear that the philosophical bases of Marx's Marxism are compatible with belief in general laws of nature having, as particular applications, the history of mankind and also the laws of thought, identified with psychological or physiological regularities of the brain.

But such laws, rules and regularities are the very *Leitmotiv* of *Anti-Dühring* and *Socialism: Utopian and Scientific* alike. Kolakowski, here at least, is under no illusion. There is, he goes on to say, "a clear difference between the latent transcendentalism of Engels's dialectics of nature and the dominant anthropocentrism of Marx's view", an anthropocentrism that can and should be contrasted with Engels's "naturalistic evolutionism". Whereas

> Engels, broadly speaking, believed that man could be explained in terms of natural history and the laws of evolution to which he is subject, Marx's view was that nature as we know it is an extension of man, an organ of practical activity.[25]

Engels maintained that "our mastery of nature consists in the fact that we have the advantage over other beings of being able to know and apply its laws", and that "we are more and more getting to know, and hence to control, even the more remote natural consequences … of … our productive activities".[26] This is a much more Baconian- Promethean notion than anything we encounter in Marx.[27] The relation of theory to practice Engels proffers is straightforwardly instrumental. The laws of physical nature, because they are laws as Engels understands the term, admit only of being applied for the sake of control. Such control can be

25 Leszek Kolakowski, *Main Currents of Marxism*, vol. 1, *The Founders*, tr. P.S. Falla, Oxford, Oxford University Press, 1978, pp. 401–2; Paul Thomas, "Marx and Science", *Political Studies* 24: pp. 1–23, 1976; Paul Thomas, "Nature and Artifice in Marx", *History of Political Thought* 9: pp. 485–503, 1988.

26 Friedrich Engels, *Dialectics of Nature*, New York, International Publishers, 1940, pp. 292–30.

27 See below, Epilogue, pp. 132–51, "Nature and Artifice in Marx".

either of nature or of society. Natural science and social management exist – for Engels, not for Marx – on the same continuum. Engels proffered a shift

> from Marx's view of science as an activity important in technology and industry, to seeing its importance for socialists [as] a system of knowledge, incorporating the causal laws of physical science and taking them as a model for a covertly academic study of history, "thought" and … current politics.[28]

Human beings in Engels's view are in the last analysis physical objects whose motion is governed by the same general laws that regulate the motion of all matter. Alfred Schmidt tersely observed, apropos of Engels, that "the fact that human history is made by beings endowed with consciousness is nothing more than a factor that tends rather to complicate matters".[29] Engels would not admit this as a criticism; he himself said much the same thing about human consciousness without any discernible irony. Purpose, practice and human thought itself are in Engels's view complex forms of motion, about which lawlike statements may be made. The "law of the negation of the negation" Engels regarded as "an extremely general – and for this reason extremely far-reaching and important – law of development of nature, history, and thought; a law which holds good in the animal and plant kingdoms, in geology, in mathematics, in history and in philosophy".[30] How such a "law" could possibly admit of so broad a purchase is something Engels never took it upon himself to demonstrate in any adequate sense – unsurprisingly, since, in passages like this one (there are examples aplenty) he was clearly out of his depth. Be this as it may, human history and human thought are on Engels's account nothing but special fields of play for nature's general laws of motion and development. This is why, on the one hand, the "government of persons" (in the Saint-Simonian phrase Engels so readily appropriated) can give way without undue difficulty to the "administration of things"[31] – a shift that also, far from incidentally, may be encountered in the writings (if not the practices) of Lenin.[32]

The "government of persons" and the "administration of things" are both simply matters of technique. Slippage from one to the other is unproblematic because each is viewed instrumentally. Either we control nature or nature controls us; subjection or subjugation of people to nature gives way, sooner or later, to their domination of nature, this being what human history finally comports. "Master demons" in due course become "willing servants".[33]

28 Carver, *Marx and Engels*, p. 157.
29 Alfred Schmidt, *The Concept of Nature in Marx*, London, New Left Books, 1971, p. 191.
30 Friedrich Engels, *Anti-Dühring*, Moscow, Progress Publishers, 1969.
31 Engels, *Anti-Dühring*, p. 333; Carver, *Engels*, p. 60.
32 Paul Thomas, *Alien Politics: Marxist State Theory Retrieved*, New York, Routledge, 1994, p. 129.
33 Friedrich Engels, *Socialism: Utopian and Scientific*, New York, International Publishers, 1972, p. 68.

Engels even manages to combine the apocalyptic dualism evident in such formulations with what Kolakowski identifies, correctly, as Engels's "naturalistic evolutionism". This unlikely alliance does nothing to make Engels's thought more palatable, or more compatible with the writings of Marx, in whose name Engels took care to advance it. *Socialism: Utopian and Scientific* declaims:

> The whole sphere of the conditions of life which environ man, and which have hitherto ruled man, now comes under the dominion and control of man, who for the first time becomes the real, conscious lord of nature, because he has become master of his own social organization … Man, at least the master of his own form of social organization, becomes at the same time the lord over nature, his own master – free.[34]

If domination-and-control philosophies of nature all too readily lead into domination-and-control philosophies of human nature and vice versa – and I see no reason to doubt this general proposition – then Engels's views have repressive, authoritarian implications (though he sometimes sugared these with gradualist, evolutionary coatings, which in fact sit ill with the apocalyptic side of this thought – deep coherence was not Engels's strong suit). Terence Ball has argued persuasively that "there is a logical link between positivist meta-science and the view that social relations are best managed by technical experts and administrators".[35] This at root is why the task of disentangling Marx's writings from those of Engels is a task that matters. Since the historical links between post-Marxian Marxism and authoritarianism are not in doubt, there is every reason to question the extent of their intellectual grounding in Marx's writings.

Briefly put, Marx, in *Capital*, excoriated what he called "the abstract materialism of natural science".[36] The truths of natural science, far from being logically prior to history and society, and far from providing any truths about society, are themselves dependent on the social purposes that provide the climate and context for the scientist's enterprise. Nature to Engels was by contrast necessitarian; freedom could only be freedom from it or over it. Marx saw nature very differently, and was a much less apocalyptic theorist than Engels. For Marx the continuum of nature does not stop short at the arbitrary barrier of the human senses and cognitive faculties. The implications of this for our understanding of the ontological basis of natural science lend no credence to Engels's apocalyptic and necessitarian claims. Natural science on Marx's view of it cannot be what Engels thought it must be: the observation of, and drawing of lawlike conclusions about, an external, material reality that exists independently of the observer it confronts. If nature is not independent of human aims, projects and purposes in the sense Engels requires it to be, then scientific truth cannot be

34 Engels, *Socialism: Utopian and Scientific*, pp. 72, 75.

35 Terence Ball and James Farr, eds., *After Marx*, Cambridge, Cambridge University Press, 1984, p. 236.

36 Karl Marx, *Capital*, Harmondsworth, Penguin, 1976, vol. 1, p. 272, n. 2.

a matter of a correspondence between human perceptions and judgments, on the one hand, and an independently existing "reality", on the other. People's various observations and adaptations of nature are not, in Marx's view, to be regarded as forays into the uncharted territory of a categorically separate realm ("reality") that operates according to its own, necessitarian laws – laws we can but confront, interpret and apply within our own social realm.

Engels, who did regard our observations and adaptations in that very way, is often credited for having belatedly seen into print Marx's "Theses on Feuerbach". In so doing, however, Engels – whose own thought, let it be said, remains firmly and unambiguously within the confines of the "old materialism" that the "Theses" excoriate – seems not to have reflected very much about their meaning. He seems never to have discerned that if, in the words of the Second Thesis, "the dispute over the reality or non-reality of thinking that is isolated from practice is a purely scholastic question", then this admonition may be true of scientific thinking as of any other kind. The constitutive function of human thought and action on the world arises not from anything in the realm of thought, as Hegel and the Young Hegelians had believed, but from people's life in the world. Nature, on this view, cannot be regarded as Engels evidently regarded it: as an inhuman, necessitarian realm to whose laws people are subject until they can "master" them. Nor can the world be regarded as Engels regarded it, as a kind of screen on which we as supine spectators can or should watch natural processes unfold. Engels, to reiterate, understood "dialectics" to be "the science of the general laws of motion and development of nature, human society and thought" considered in all seriousness as constituting a seamless web. He believed that "the dialectic going on in our heads is in reality the reflection of the actual development going on in the world of nature and of human history in obedience to dialectical forms." People's cognitive links with nature consist in the subjection to general laws of nature, of which human history and the laws of thought are but particular expressions. Thoughts are identified as physiological regularities of the brain; everything in the last analysis is an instance of matter in motion. Since "the unity of the world consists in its materiality", we can deduce the "dialectics" of society from the "dialectics of nature" by using "a 'system of nature' [like that of the eighteenth-century *Aufklärer* d'Holbach, but] sufficient for our time".[37]

It should be clear how distant such thinking is from Marx's. It differs not just in degree but in kind, not just in emphasis but in principle. Marx and Engels are separated by a conceptual chasm that should have resisted all attempts at papering it over.

37 Marx, and Engels, *Selected Works in Two Volumes*, vol. 2: p. 504; Engels, *Dialectics of Nature*, pp. 314, 179; Karl Marx and Friedrich Engels, *Selected Correspondence*, Moscow, Progress Publishers, 1975, p. 590; Marx and Engels, *Selected Works in Two Volumes*, vol. 2: pp. 65, 136–7; Karl Marx and Friedrich Engels, *Selected Works in One Volume*, New York, International Publishers, 1968, p. 622.

The nature of distortion

Yet there have been many such attempts. We have been told, for over a century now, that Marx and Engels occupy common ground – and there are still people who subscribe to such a belief. Investigation of their reasons for subscribing to it would take this chapter too far afield; we must remain content with an outline of the textual evidence, which, unless it proceeds from Engels after Marx's death, all points in a different direction. Engels claimed in 1885 that he had read *Anti-Dühring* to Marx – a curious claim, since Marx was not incapacitated or bedridden at the time it was written, and listening to a recitation of its ponderous contents would have taxed the patience of Job – and that it was issued with his knowledge (a much weaker claim, which, as far as it goes, is presumably true but means little). "It was self-understood between us," wrote Engels, "that this exposition of mine should not be issued without his knowledge."[38] The implication here, seized upon by later true believers, is that Engels, in writing *Anti-Dühring*, was faithfully fulfilling his part in what was an agreed-upon division of labour, according to which Engels produced texts that were interchangeable with Marx's on some subjects and supplementary to, but always compatible with and true to, Marx's work on others. The trouble is that there is no direct textual evidence anywhere in Marx's writings – and most of these are by now available – that he agreed with Engels's overall deterministic materialism and teleological "dialectics". "We do not find in Marx's works the confusing, windy and ambiguous philosophizing that we find in Engels."[39] Only after Marx's death did Engels write that

> Marx and I were pretty well the only people to rescue conscious dialectics from German idealist philosophy and apply it in the materialist conception of nature and history … [I]n nature, amidst the welter of innumerable changes, the same dialectical laws of motion force their way through as those which in history govern the apparent fortuitousness of events; the same laws that simultaneously form the thread running through the history of the development of human thought and gradually rise to consciousness in the mind of man.[40]

Engels's claims in the first (1878) preface to *Anti-Dühring* are appreciably more modest. He refers there to "my views" or "the various views which I have advanced". Even with these, Marx is nowhere on record as having agreed. And why should he have, since the views were so radically at variance with his own? The wearisome argument we have all heard, over and over again – that Marx must have agreed with Engels about science because he never expresses disapproval of Engels's views in the surviving correspondence – is weak, argues from

38 Engels, *Anti-Dühring*, p. 13.
39 Carver, "Marx, Engels and Scholarship", 32: p. 251.
40 Engels, *Anti-Dühring*, pp. 15–16.

silence, and strains credulity. Carver observes wryly that "if it is not really possible to agree or disagree with Engels's dialectics" anyway, "because they are supposed to underlie everything".[41] Quite apart from this, sustained epistolatory exchanges between friends need to be treated with considerable caution. It is likely that each correspondent will, at times, write what he expects the other to hear, and will humour or even indulge him when nothing pressing or urgent is at stake. Over and above this, it has been noted that "in correspondence on dialectical subjects as Engels understood them Marx was stand-offish or evasive"[42] rather than supportive. It is not hard to see why he adopted so markedly "perfunctory and non-committal" an attitude.[43]

Engels wrote a postscript to Marx on 30 May 1873 that, as Helena Sheehan points out,[44] was omitted from the English-language *Selected Correspondence* (one suspects the usual chicanery and legerdemain). "If you think there is anything in it," wrote Engels, "don't say anything about it just yet, so that no lousy Englishman will steal it on [sic] me. It may take a long time yet to get it into shape."[45] The "it" in Engels's postscript refers to the following:

> This morning while I lay in bed the following dialectical points occurred to me: the subject-matter of natural science – matter in motion, bodies. Bodies cannot be separated from motion, their forms and kinds can only be known through motion; of bodies out of motion, out of relation to other bodies, nothing can be asserted. Only in motion does a body reveal what it is. Natural science, therefore, knows bodies by examining them in relation to one another, in motion. The knowledge of the different forms of motion is the knowledge of bodies. The investigation of these different forms of motion is therefore the chief subject of natural science.[46]

From all appearances Marx did indeed maintain a discreet silence – and presumably an embarrassed one – about this instance of scholarship in majestic stride. Marx's doctoral dissertation, we might recall, had been about Democritus and Epicurus, either of whom takes us much further than Engels's amateur peregrination does. Engels had admitted to Arnold Ruge in 1842 that he was an *Autodidakt in der Philosophie*.[47] He still is. One is hard put not to admire Marx's forbearance in not pointing out to his friend that there is nothing remotely dialectical (or even profound) about Engels's presumed insight.

41 Carver, "Marx, Engels and Scholarship", 32: p. 256.

42 Carver, "Marx, Engels and Scholarship", 32: p. 252; John Stanley and Ernest Zimmerman, "On the Alleged Differences between Marx and Engels", *Political Studies*, 32, 1984: pp. 242–3.

43 Carver, *Marx and Engels*, pp. 128–9.

44 Helena Sheehan, *Marxism and the Philosophy of Science*, vol. 1, *The First Hundred Years*, Atlantic Highlands, Humanities Press, 1985, p. 64.

45 *CW* 33:81.

46 *CW* 33:80–81.

47 Carver, *Friedrich Engels*, p. 93.

> Perhaps Marx felt it easier, in view of their long friendship, their role as leading socialists, and the usefulness of Engels's financial resources, to keep quiet and not to interfere with Engels's work. After all, *Anti-Dühring* went out under Engels's name alone, Engels stated in the preface that the work contained "my views", and neither Engels nor Marx seem to have revealed publicly during Marx's lifetime that Marx contributed to the chapter on political economy, or that Marx's rather distant preface to *Socialism: Utopian and Scientific* was published under Paul Lafarge's name.

In general, "Engels, it seems, was canny enough to avoid creating disagreements with Marx. And Marx seems to have been similarly canny in not pressing Engels on his work".[48] The fact remains that, overall,

> [t]he surviving Marx-Engels correspondence fails to support the picture painted by Engels in the 1885 preface to *Anti-Dühring.* Marx did not discuss Engels's dialectical laws, even after prodding, nor did he say anything to substantiate the contention that he and Engels were the joint expositors of a universal materialism predicated on the natural sciences, understood as the study of matter in motion. Marx said nothing to confirm Engels's claim that he endorsed it … the diffidence, lacunae, and artful evasion displayed in Marx's replies to Engels does not illustrate a perfect partnership on theoretical issues.[49]

The stakes of distortion

Yet this is not how the Marx-Engels intellectual relationship has come down to us. It has come down to us in mythic form as a story of complete agreement expressed in interchangeable works or an agreed-upon division of labour within a perfect partnership. It has come down to us in this mythic form because Engels wanted it to and because, mainly in the 1883–95 period, he bent to the task of "setting Marx's work in an academic and philosophical context, drawing out its implications as a universal methodology, and adding what was declared in advance to be consistent with it, a positivist account of natural science".[50] To rehearse the long and weary story of how this myth found so many subsequent takers, and why it found so many adherents, will be the subject of subsequent chapters. Suffice it to say in a preliminary sense that the myth set the terms of its own acceptance – again, in large measure because Engels wanted it to do so. Leonard Krieger (one of the best commentators on Engels as a historian) referred in 1967 to "the delicate surgery of detaching Engels from Marx".[51] I

48 Carver, *Marx and Engels*, pp. 129–32; Leonard Krieger, "Introduction", *The German Revolutions*, by Friedrich Engels. Chicago: University of Chicago Press, 1967, p. xii.

49 Carver, *Marx and Engels*, pp. 128–30.

50 Carver, *Marx and Engels*, pp. 156.

51 Krieger, "Introduction", p. xii.

cannot forgo the observation that such surgery has needed to be "delicate" in large measure because Engels wanted it to be "delicate". He has to this day given us a great deal of work to do, work that is uphill and ought to have been needless. But in saying this we are by no means done with irony.

It is arguable that Engels's best and most original works – *The Condition of the Working Class in England* is a minor masterpiece, if ever there was one – were those which owed least to Marx. This is not an idle observation. One could write – many people by now have written – about Marx without much emphasis on Engels. That one could write about Engels without referring to Marx, is, however, much less clear. Engels in his manner may have been perfectly aware of this. His adoption of Marx's mantle, conscious or unconscious as this may have been, was certainly self-conscious. Without invoking or even (to a considerable extent) inventing the adjectival status of Marx's name, would he have been listened to? Would he have found as many takers for ideas that were his and his alone? The question is at the very least an open one. I rather suspect that Engels himself knew in his heart of hearts the answer to it has to be no.

3 The question of Darwin

> When someone has behaved like an animal, he says: "I'm only human!" But when he is treated like an animal, he says: "I'm human too!"
>
> (Karl Kraus)

In claiming at Marx's graveside that "Darwin discovered the law of development of organic nature", Engels did much to set the terms of future comparisons between Marx and Darwin. But how does Engels's claim about Darwin square with what Darwin accomplished and thought he had accomplished? Marx had applauded Darwin for having undercut teleological argument in the natural sciences, and Engels had too. This being so, we need to ask questions about the "law of development" Engels in 1883 credited Darwin with having "discovered". Darwin himself propounded no such discovery. Engels's "law of development" cannot refer to evolution at large, which Darwin never claimed to have discovered. If Engels had in mind the principle of natural selection, which Darwin did claim to have discovered as a means of refiguring and refining the concept of evolution, we are no better off: Darwin certainly uses the term "law", but he does not use it to refer to his principle of natural selection.

Engels's claim at Marx's graveside was, just as we might expect, less about the character of Darwin's discoveries than about their supposed comparability with Marx's. Engels, that is to say, raises an important question about Darwin, but is of little help in answering it. He had his own ideas about what the "law of development of organic nature" comported, and these in truth owed little enough to Darwin. It does not follow from this that the question Engels raises is unanswerable. What follows is that Engels, in raising it, has (perhaps despite himself) obliged us to turn to Darwin himself.

The belief system that Darwin (1809–82) inherited, then subverted, was in various ways "inculcated through the writings of theologians, scientists, scientific popularisers, and political economists". It

> included the idea – indeed the perception – that the adaptation of organisms to their environment is perfect, that nature is a well-adjusted mechanism, that there is a harmony among organisms and between them and the

inorganic world; the idea that the laws of nature were established by God to achieve his ends; and the idea that all natural phenomena serve purposes relative to the whole economy of nature.

After 1859, as Dov Ospovat points out, "Darwin's theory contributed to the complex process, already under way, by which [all these ideas] lost currency", and contributed to this process decisively. Yet "for many years and in some respects throughout his life, Darwin shared his contemporaries' belief in harmony and perfection", a belief that proved notably difficult to shake off once and for all.[1] Moreover, none of the constituent ideas listed above, either in themselves, or in combination with any (or all) of the others, is necessarily inconsistent with "evolution", if evolution is but vaguely defined. The belief-system these ideas constitute is, however, resolutely teleological, and this is why Darwin's onslaught on teleological explanation needs to be positioned with some care, and considered not just in its effects, but also in its genesis. Darwin at first imbibed the elements of a belief-system his later researches subverted. He did not subvert these elements all at once, however trenchantly he interrogated their various presuppositions. There was no singular flash of insight animating Darwin's quest, but this does not rob it of its drama, which was one of questioning and self-questioning, of learning to take nothing on authority, nothing on trust, nothing for granted – not even his own, once-cherished beliefs and preconceptions.

Several of Darwin's precursors and contemporaries – Theodor Schwann, Richard Owen, Louis Agassiz and William B. Carpenter are among those that come to mind – believed or came to believe that the facts of natural science were incompatible with a strictly teleological interpretation of organisms, but remained committed to the idea that the universe taken as a whole exhibits both order and purpose. Darwin at first was in full agreement with them.[2] It was perfectly possible to argue against teleological explanations without abandoning the ideas of harmony, "progress" and "development"; in doing so at first himself, Darwin was in good company, the best his age had to offer.[3] Much has been made in biographical accounts of Darwin of the influence of Malthus's argument about population and scarcity. (Marx duly took note of this.) Yet, when he first read Malthus in 1838, Darwin did not at once abandon his belief in perfection and harmony. Nor indeed would the Revd Malthus have expected otherwise. Nature at large could still be seen, and was seen (by Malthus as well as Darwin) as a system of beneficent laws designed to produce pre-ordained, God-given ends. Malthus believed that society as well as nature proceeded according to divinely appointed laws. His concern was not just to explain the operation of his principle of population; it was also to show how this principle fits into the creator's grand design. By demonstrating "how little the price of labour and the

1 Dov Ospovat, *The Development of Darwin's Theory. Natural History, Natural Theology, and Natural Selection, 1838–59*, Cambridge, Cambridge University Press, 1981, pp. 2–3.

2 Ospovat, *The Development of Darwin's Theory*, p. 28; cf. pp. 29–30.

3 Ospovat, *The Development of Darwin's Theory*, pp. 37–8.

means of supporting a family depend upon a revolution", Malthus hoped, and as a clergyman hoped devoutly, to "induce every man in the lower classes of society … to bear the distress in which he might be involved with more patience … and feel less discontent and irritation at the government and the higher classes of society on account of his poverty". Malthus urged the "lower classes" to "become more peacable and orderly,… to be less inclined to tumultuous proceedings in seasons of scarcity, and … at all times be less influenced by inflammatory and seditious publications". This helps explain why Marx, as author of seditious and inflammatory publications, loathed Malthus as much as he did; but it also helps explain Malthus's appeal to Darwin, which was more resonant than many have supposed. Malthus was bent on encouraging people consciously to adapt, in the belief that adaptation, be it conscious or not, is part of nature's plan. This belief in the efficacy of adaptation, a belief that progress could and should be based on adaptation, was one that Darwin shared and extended. The principle of population was for Malthus (as it was for Paley) by no means destructive of the harmonistic view of nature or "creation". To the contrary, the principle of population is, as Ospovat says, "part of the plan".

Malthus's emphasis on competition for scarce resources may well have inspired Darwin's principle of natural selection, as Darwin's biographers commonly claim; but Malthus also, and perhaps more fundamentally, provided Darwin with a new solution to an old problem: How does the organic world adjust to change so that the harmony of nature is not disturbed?[4] Darwin in 1838 still believed in the harmony of nature; nothing he read in Malthus would have shaken this conviction.

This means that if we are to accept the invitation Engels proffers, and ponder Darwin on law, teleology, development and progress, we must probe more deeply into his development as a scientist. Maurice Mandelbaum is of great help here. In his words,

> one might have expected that Darwin would have regarded it as a law of nature … that all things should progress toward higher forms. However, this is a step he refused to take. While he did believe that progress was a necessary consequence of nature's laws, he explicitly rejected the view that the phenomena of life were to be examined by means of a law of progressive development … [A]daptations follow from a long series of adaptive changes, not from an inherent developmental tendency.[5]

Indeed, the idea of an inherent developmental tendency, an idea that could and did receive Lamarckian or theological sanction, was an idea Darwin set out to guard his principle of natural selection against.

4 Ospovat, *The Development of Darwin's Theory*, pp. 83, 61, 62–3, 68. Cf. Maurice Mandelbaum, 'The Scientific Background of Evolutionary Theory in Biology', *Journal of the History of Ideas* (henceforward, *JHI*), 18, 1857: pp. 342–61.

5 Maurice Mandelbaum, *History, Man and Reason, A Study in Nineteenth Century Thought*, Baltimore, Johns Hopkins University Press, 1971, pp. 82–3.

What then of natural selection itself? How is its place within Darwin's overall theory to be understood? Darwin's *Origin of Species*, according to Elliott Sober, contains two "big ideas". The first is the tree of life. The various species of animal and plant that now populate the planet have common ancestors. There must, therefore, be lineages connecting descendants with ancestors. This tells us that evolution, so understood, must have taken place. It does not explain how or why specific species or characteristics of species emerged within these lineages. If a new species comes into existence or an old one becomes extinct, we need to ask questions about the process of evolutionary change, and it is Darwin's answers to these questions that involves his second big idea, natural selection. Darwin's innovation was not that of having been the first to formulate either of these two big ideas. It was to have combined them. Only on the basis of their combination could Darwin proceed to claim that natural selection is the principal explanation of why evolutionary change has produced the observable variety of life-forms that surrounds us. In Sober's formulation, if the tree of life represents the pattern of evolution, what it looks like from afar, then natural selection is the main process explaining why this pattern takes the form it does.[6]

Most accounts of natural selection personify it, and argue as though natural selection had work to do or tasks to perform. We commonly read in accounts of Darwin that natural selection does not just make modest modifications in the traits of existing species (such as finches in the Galapogos); it also explains the origins of species themselves, origins that are not observable in the same way that finches are. While Darwin did indeed think of natural selection as the key to explaining species' origins, it is we who do the explaining, using natural selection as the key. To personify natural selection is to award it an agency it does not in fact possess. Natural selection is in no sense a demiurge working its way through the natural realm, compelling species to adapt or die. We can say of Darwin's natural selection what Marx, in *The Holy Family*, said of history; natural selection fights no battles, wins no victories. It is not an actor, nor yet an agent. It is the main principle of investigation that helps us explain why changes in the natural world take the form they take. But it is we who do the explaining.

Personification of natural selection is a convenience and a temptation, into which even Darwin himself sometimes fell – as when he tells us that natural selection is "daily and hourly scrutinizing, throughout the world, every variation"; and that it is "silently and invisibly working, whenever and wherever opportunity offers, at the improvement of each organic being, in relation to its organic and inorganic conditions of life".[7] One of Darwin's best-known analogies is that between artificial and natural selection. Plant and animal breeders

6 Elliott Sober, *Philosophy of Biology*, Boulder, Westview Press, 1993, pp. 7–9. Cf. Elliott Sober, *The Nature of Selection. Evolutionary Theory in Philosophical Focus*, Cambridge, MIT Press, 1984, p. 15; Elliott Sober, *Reconstructing the Past. Parsimony, Evolution and Influence*, Cambridge, MIT Press, 1988, p. 5.

7 Charles Darwin, *The Origin of Species*, London, John Murray, 1859, p. 84; cf. Ospovat, *The Development of Darwin's Theory*, p. 85.

deliberately modify the characteristics of organisms by means of artificial selection. If the process of artificial selection can and commonly does produce small changes in given species over a comparatively short period of time, it is reasonable (in Darwin's opinion) to suppose that natural selection will produce much larger changes over much more protracted periods. But in the case of artificial selection someone is doing the selecting. Human aims and intentionalities are involved. In the case of natural selection, which by its very nature is a much more extended and much more unpredictable process, no such intentionality is involved or needs to be involved. This helps explain why Darwin proceeded not directly to dispute or challenge the venerable argument from design, but simply to dispense with it. Both the argument from design and the various non-Darwinian arguments against it can readily enough be made compatible with a notion of progress that is providential as well as teleological in its bearing – the argument from design because it presupposes the working-out of divine will, opposition to the argument from design because, for its part, it privileges our progressive emancipation from the stranglehold of such outmoded, tutelary superstition. It is important to a sensitive understanding of Darwin to acknowledge how suspicious he was of either of these approaches.

Darwin's principle of natural selection does not subsume evolution within a pre-existing pattern of opposition to the argument from design. It proffers an alternative to both lines of argument. Once variation among natural species arises, some variants exhibit more staying power than others. Natural selection accounts for the fitness of the traits or characteristics that are displayed by members of a species; organisms will retain characteristics that reveal their ancestry. The argument from design entails optimal design, but natural selection has no need of this. Leibniz and Paley, to name but two of the most intelligent proponents of the argument from design, had supposed adaptation to be perfect. Darwin argued for the relativity of adaptation; adaptation was almost always imperfect, but good enough.

All this helps us see that Darwin's principle of natural selection was lawlike only to a limited degree. The main constituent features of natural selection are variation, fitness and inheritance. (Variation is variation among the natural objects under consideration, objects on which natural selection – if I may after all personify it – can act; variation must entail variation in fitness if a species is to survive or die out; and the characteristics of such fitness must be biologically inheritable, if any organism is to survive.) But "our ignorance of the laws of variation is profound", according to every edition of *The Origin of Species* published during Darwin's lifetime; "that the process of variation should be indefinitely prolonged is an assumption the truth of which must be judged by how far the hypothesis accords with the phenomena of nature"; and as to inheritance, it too, like variation, was to Darwin an enigma. Its laws were "quite unknown".[8]

8 James R. Moore, *The Post-Darwinian Controversies. A Study in the Protestant Struggle to Come to Terms with Darwin in Great Britain and the United States*, Cambridge, Cambridge University Press, 1979, pp. 128–30. Cf. Sober, *Philosophy*, p. 36.

Darwin, having isolated and defined natural selection as the leitmotif of evolutionary change, did not for this or any other reason make it the be-all and end-all of such change. He "looked to other change-producing factors", though "only in those instances where he could not see [natural] selection as a possible means". In every such case, "these factors were subordinate to, or co-ordinate with the dominant action of natural selection, a principle he never significantly amended". In *The Descent of Man*, Darwin (in words that recall Malthus) tells us, for example, "how subordinate in importance is the direct action of conditions of life, in comparison with the accumulation through selection of indefinite variations"; his definitive summary statement may be the sentence with which he concludes the introduction to each edition of *The Origin of Species*: "I am convinced that natural selection has been the most important, but not the only means of modification."[9]

Darwin's use of law appears to stop well short of Engels's distraught but only too influential characterization of it, which is beginning to look over-asserted and misleading. Darwin's *Autobiography* tells us that "[e]verything in nature is the result of fixed laws", but only after telling us, in the immediately preceding sentence, that "[t]here seems to be no more design in the action of natural selection than in the course the wind blows".[10] The adjacency of these sentences should remind us that Darwin's emphasis on laws was in large measure employed to take issue with the inexorable determinism of other accounts, not to add to their inexorability. He set forth natural selection not as a theory for which absolute proof had been obtained (his argument is not an inductive-Baconian one, but a hypothetical-deductive one), but merely as the most probable explanation of the greatest number of known facts about his subject-matter, the origin of species. His theory tells us nothing about the formation of the solar system, the derivation of the chemical elements, or the origin of life as such (so much for "the law of development of organic life"); he resists cosmic generalizations of any kind, and was severely critical, publicly or privately, of systems-builders whose ambitions took their arguments beyond the available evidence. While there was no shortage of contenders, Lamarck and his disciple Herbert Spencer were particularly apposite cases in point.

Jean-Baptiste Lamarck (1744–1829) taught that life as such has an inherent tendency to develop in complexity and "perfection" through a pre-ordained sequence of stages; that there is, in other words, an innate power (*pouvoir de la vie*), conferred on nature by God, which, in the case of the animal line, eventuates and culminates in mankind. Darwin, who greatly resented being compared to Lamarck, found no merit in the latter's evident providentialism. Darwin's

9 Morse Peckham, ed., *The Origin of Species of Charles Darwin. A Variorum Text*, Philadelphia, University of Pennsylvania, 1959, p. 75.

10 Nora Barlow, ed., *The Autobiography of Charles Darwin, 1809–82, with Original Omissions Restored*, New York, Harcourt, Brace, 1958, p. 87; cf. Darwin to Gray, 11 December 1861, in Francis Darwin, ed., *The Life and Letters of Charles Darwin*, London, John Murray, 1987, vol. II, p. 382.

principle of natural selection was designed, as we have seen, to explain why lineages change over time and why they diverge as each responds to different environments. Evolution in Darwin's view has no pre-established sequence of stages, and needs none. Lineages evolve not according to the supposed logic of some inner principle or other, but in response to circumstances that might be accidental. "[N]o innate tendency to progressive development exists."[11] There is no inevitability about our presence as observing subjects, or indeed about our presence as a species. Natural history is a series, not a sequence – an accumulation of unique events that do not repeat themselves, not a stately process leading inevitably to the present. It may well be that the outcome of evolutionary transitions so understood can be established as having been highly probable, but a chain of probable outcomes does not inevitability make – no matter what latter-day Lamarckians like Spencer might suppose. The principle of natural selection suffices to discover "tiny islands of adaptability in a vast ocean of biological possibility",[12] and suffices to explain why these tiny islands arose; further than this we need not go. As far as Darwin (though not Engels) is concerned, the outcome of systematic thinking need not itself be systematic in the same way; to suppose otherwise is to argue providentially, not scientifically.

Darwin's opposition to, and distaste for providential thinking is deeply-rooted – far more deeply-rooted than the influence even of Malthus. The two notebooks on man, mind and materialism he composed on the HMS *Beagle* are of considerable interest in this regard. Darwin describes the seafarers' reception by the native inhabitants of Tierra del Fuego as "the most curious and interesting spectacle" he had ever beheld. The difference between Darwin and his shipmates, on the one hand, and these native inhabitants, on the other, seemed greater than that between wild and domesticated animals. Yet the behaviour of "civilised" people towards indigenous ones caught Darwin short all over again. "Who would believe in this age in a Christian and civilised country that such atrocities [as massacres and exploitation] were committed?" Argentina, Darwin surmised, "will be in the hands of white gaucho savages instead of copper-collared Indians. The former being a little superior in civilization, as they are inferior in every moral virtue." Perhaps, Darwin supposed, "primitive" people were not so primitive. After all, had not the three Anglicized Fuegians aboard the *Beagle* completed in a single generation the circuit from "savage" to European and back, resettling happily among their "miserable and backward" tribes? "One's mind hurries back over past centuries, & then asks, could our progenitors be such as these?" Darwin mused on the homeward voyage:

> Men, – whose very signs and expressions are less intelligible to us than those of domesticated animals, who do not possess the instinct of these

11 Darwin to Hyatt, 13 February 1873, in Francis Darwin and A.C. Steward, eds, *More Letters of Charles Darwin*, London, John Murray, 1903, vol. I, pp. 338–48.

12 Elliot Sober, "It had to Happen", review of Simon Conway Morris, *Life's Solution, New York Times Book Review*, 30 November 2003, p. 18; cf. Ospovat, *The Development of Darwin's Theory*, pp. 212–13.

> animals, nor yet appear to boast of human reason, or at least of arts consequent on that reason.[13]

The key word here may be the word "boast". The lowliness, the finitude of human reason, its development "over past centuries" from something less than the instinct of domestic animals, shook Darwin's confidence, not so much in humanity or human nature as in what James T. Moore calls "the eminently rational conclusions of orthodox naturalists and natural theologians".[14] These conclusions, to which Darwin himself had subscribed as a younger man, were, he could now see, dependent for their validity on a lofty estimate of mankind's intellectual powers, an estimation based in its turn on an elevated notion of mankind's origin that was the product of the study and the library, if not the cloister, and not the outcome of first-hand observation.

> [L]et man visit orang-utan in domestication, hear expressive whine, see its intelligence when spoken [to], as if it understood every word said – see its affection to those it knows – see its passion and rage, sulkiness and very extreme of despair; let him [then] look at savage, roasting his parent, naked, artless, not improving, yet improvable and then let him dare to boast of his proud pre-eminence.[15]

Boasting is this time linked with "pride", to striking effect. Those who boast of the "proud pre-eminence" of the more "civilized" themselves partake of overweening pride.

> Has not the white man, who has debased his nature by making slave of his fellow-Black, often wished to consider him as [an]other animal, – it is the way of mankind & I believe those who soar above such prejudices yet have justly exalted nature of man, like to think his origin godlike.[16]

Syntax aside, this is an extraordinary passage. Here Darwin, who for the record

13 Nora Barlow, ed., *Charles Darwin's Diaries of the Voyages of the HMS* Beagle, Cambridge, Cambridge University Press, 1933, p. 428 (September 1836); cf. Nora Barlow, "A Letter Containing Remarks on the Moral State of Tahiti, New Zealand, etc.", in Paul H. Barrett, ed., *The Collected Letters of Charles Darwin*, Chicago, University of Chicago Press, 1977, vol. I. pp. 20–1; Barlow, *Charles Darwin's Diaries*, p. 171 (September 1833); pp. 375–9 (January 1834); pp. 388–9 (February 1836); pp. 118–19 (December 1832).

14 Moore, *The Post-Darwinian Controversies*, p. 336; cf. Sandra Herbert, "The Place of Man in the Development of Darwin's Theory of Transmutation", Part I (to July 1837), *Journal of the History of Biology* (henceforward *JHB*), 10, 1977: pp. 217–56.

15 Gavin de Beer, ed., "Darwin's Notebooks on the Transmutation of Species", *Bulletin of the British Museum (Natural History)*, Historical Series, 2, 1953–7, Part II, (1954) Second Notebook (February–July 1838), p. 91.

16 De Beer, II, (1954) p. 100; cf. De Beer, I, (1953) pp. 69, 71; Moore, *Post-Darwinist Controversies*, p. 317.

was the scion of a family deeply opposed to slavery,[17] is at his most subtle and profound. The belief in mankind's exalted status is akin in its presumptuousness to the practice of slavery, which awards exalted status to one kind of human being over another. Even high-minded opponents of slavery are not immune to the same kind of presumption: those opposed to slavery place themselves (as the saying goes) "on the side of the angels". They see themselves as being more human than those who drive slaves, not to say the slaves themselves who await their high-minded deliverance from bondage. Darwin's invocation of the super-human and godlike, as opposed to the all-too-human, recalls the idiom of much Western political theory from Aristotle even unto Nietzsche. The uncivilized man, the man who does not live in a polis, said Aristotle, is either a beast or a god. Resonant echoes of Aristotle's distinctions may be encountered in Machiavelli and Rousseau. Even the (arguably) irreligious Hobbes had spoken of "that most excellent work of nature, Man"; Rousseau had punctured such "excellence" by observing that members of "lesser" species than mankind tend not to enslave one another. Darwin's strictures on the besetting sin of pride do not stop short of indicting high-minded, philanthropic opponents of slavery. They too are not immune to what Hobbes had called vaingloriousness.

Darwin confided in later notebooks that "[m]an in his arrogance thinks himself a great work worthy of the interposition of the deity" whereas it would be "more humble & I believe truer to consider him created from animals".[18] Darwin here was adopting the idiom of Christian warnings about the sin of pride and the virtues of humility as pride's corrective. In so doing he was as adamant as he was hard-headed. That "man is one great object for which the world was brought into [its] present state … few will dispute … That it was the sole object, I will dispute".[19] "Why," Darwin had asked himself in an earlier notebook, "is thought[,] being but a secretion of the brain, more wonderful than gravity a property of matter?" He answers his own question: "It is our arrogance … our admiration of ourselves."[20]

The belief in mankind's exalted status, and by extension of the belief that natural selection, as Darwin later formulated it, stops short at the human species, implies that we have (somehow) been singled out for special treatment. The appeal of "special creation", that is of the idea that humanity alone is exempt from natural selection, lies not in any "scientific" credentials but in the pretensions that underlie such appeals, pretensions that have nothing of science about them. Special creation flatters human pride, forgetting that humility had long been considered pride's corrective. In developing this line of argument, Darwin could have counted on ample theological precedent, and up to a point he actually did so; but only up to a point. When Darwin first read Auguste Comte, in 1838,

17 Cf. Howard E. Gruber and Paul H. Barrett, *Darwin on Man: A Psychological Study of Scientific Creativity*, London, Wildwood House, 1974, pp. 65–8.

18 De Beer, III, (1955) p. 134; cf. De Beer, II, p. 106.

19 De Beer, IV, (1957) pp. 163–4.

20 De Beer, III, p. 105; cf. De Beer, I, p. 69; II, p. 111.

he was quick to conclude that human pride and arrogance were if anything obsolete. That "the fixed laws of nature should be universally thought to be the will of a superior being", whose own nature is akin to ours, not only shows that science is yet in its "theological" state; it even makes one suspect that "our will may arise from … fixed laws of organization". The concept of a regnant, but contriving, wilful God, that is to say, may be the product (or reflex) of mankind's biological structure, and not of its intellectual wherewithal. The philosopher errs, says Darwin,

> who says the innate knowledge of a creator … has been implanted in us … by a separate act of god, & not as a necessary integrant part of his … laws, which we profane in thinking not capable to produce [sic] every effect of every kind which surrounds us.[21]

In laying stress on "chance and unfavourable circumstances", and on the "fortuitous", the "accidental", the contingent and the aleatory, all as having a part to play in its design, Darwin may well have believed, as Moore thought he believed, that his idea of creation – while he still subscribed to it – was far grander than the conventional one.[22] The point remains that it is both the arrogance and the lowliness of human reason that are the principal handicaps of most theological speculation. It is presumptuous to believe or assume that the creator works by intellectual powers and volition like our own.

All Darwin's strictures against overweening pride proceeded, we should remember, from a thinker who had ample cause for pride, pride of the kind that stops short of presumption, hubris and vainglory. Darwin's own example can still show what unfettered human reason is capable of accomplishing, and this is enough to make his own searching honesty, honesty that was in large measure about himself, all the more striking. What brings all his beliefs together is a steadfast, unrelenting opposition to every form of providentialist thinking he could identify, in a world where there was no shortage of contenders. If his readers feel able to assign meaning to the world around them, this is because the world around them is the only world they could possibly be living in. This does not mean that the search for meaning is worthless or insignificant. Darwin himself pursued it, in the face of considerable risk and considerable personal anguish. What its pursuit puts into jeopardy is not meaning but complacency, our tendency to settle for easy answers. As Franco Moretti has indicated, "Meaning is the result not of a fulfilled teleology, but rather … for Darwin, of the total rejection of such a solution."[23] Even with respect to progress, history, in

21 Darwin to Lyell, 2 Aug, 1861, in Darwin and Steward, *More Letters of Charles Darwin*, vol. I, p. 192; cf. Gruber and Barrett, *Darwin on Man*, p. 292; De Beer, II, p. 111; Moore, *The Post-Darwinian Controversies*, pp. 319–20.

22 Moore, *The Post-Darwinian Controversies*, p. 320.

23 Franco Moretti, *The Way of the World. The Bildungsroman in European Culture*, London, Verso, 1987, p. 7.

the words of Darwin's *Autobiography*, rebukes the inclination "to look at progress as normal in human society … Progress seems to depend on many concurrent favourable conditions, too complex to be followed out." With the advent of civilized society, neither natural selection nor the inherent effects of environment and habit can ensure the inevitability of social development; progress "is no invariable rule". The "assumption, so often made with respect to corporeal structures, that there is some innate tendency towards continued development in mind and body", was wholly unacceptable to Darwin. "Development of all kinds", he cautions a few pages later, "depends on many concurrent favourable circumstances. Natural selection acts only tentatively."[24]

Darwin, Marx, Engels

Marx praised Darwin for having dealt a death-blow to teleological explanation in the natural sciences. He spoke admiringly of Darwin's materialism and rational argumentation, though he bridled at Darwin's use of Malthus's theory of population pressure to illustrate the principle of natural selection. In the first flush of reading *The Origin of Species*, Marx remarked in letters to Lassalle and Engels that it "serves me as a basis in natural science for the class struggle" (*naturwissenschaftliche Unterlagen des Klassenkampfs*), and, in a letter to Engels, that it served as a basis for "our view".[25] These cryptic claims remained undeveloped, at least by Marx. Even on re-reading *The Origin* in 1862, Marx says of Darwin (to Engels):

> It is remarkable [earlier, "amusing"] how Darwin recognizes among beasts and plants his English society with its division of labour, competition, opening up of new markets, inventions, and the Malthusian "struggle for existence." His [nature] is Hobbes's *bellum omnium contra omnes*, and one is reminded of Hegel's *Phenomenology*, where civil society is described as a "spiritual animal kingdom" (*geistiges Tierreich*), while in Darwin the animal kingdom features as civil society.[26]

This oft-quoted but evidently unguarded remark is exactly what it seems to be at first glance, an inconsequential aside leading nowhere in particular. Nowhere in the *Phenomenology* (and nowhere in the *Philosophy of Right*) does Hegel refer to civil society as a "spiritual animal kingdom"; and nowhere in *Capital*, volume

24 Charles Darwin, *The Descent of Man*, London, John Murray, 1874, pp. 140–2, 158; Moore, *The Post-Darwinian Controversies*, pp. 158–9.

25 Marx to Engels, 19 December 1860, Karl Marx and Friedrich Engels, *Werke* (henceforward *MEW*), Berlin, Dietz Verlag, 1965, xxx, pp. 131; Marx to Lassalle, 16 January 1861, *MEW* xxx, pp. 578; Karl Marx and Friedrich Engels, *Selected Correspondence* (henceforward *MESC*), Moscow, Foreign Languages Publishing House, 1965, p. 115.

26 Marx to Engels, 18 June 1862, *MEW* xxxix, p. 249; *MESC*, p. 120; Karl Marx, *Capital*, vol. I, eds Samuel Moore and Edward Aveling, New York, International Publishers, 1967, pp. 331, 341 n. 2.

I, does Marx connect Darwin with Malthus (though each is mentioned separately).

There are two passing references to Darwin in *Capital*, volume I, the first, which describes *The Origin of Species* as "epoch-making", quotes from it to illustrate, rather than back up, an argument of Marx's; the second, similarly, advances an argument about the difference between tools and machines that is Marx's and Marx's alone, then proceeds to ask whether the productive organs of mankind would not merit "equal attention" "to Darwin's account of the formation of the organs of plants and animals". Marx adds to this rhetorical question another: "would not such a history [of mankind's productive organs] be easier to compile, since, as Vico says, human history differs from natural history in this, that we have made the former, but not the latter?" Both *Capital*'s references to Darwin contrast human history with that of organic nature, and conspicuously stop short of arguing from one realm to the other;[27] the second regards Vico as being more to the point – more, that is, to Marx's point – than Darwin is. There is no mention in *Capital* of any "natural basis" – Darwin's or anyone else's – of human society or of Marx's arguments about it.

Marx, indeed, was subsequently to be highly critical of others' attempts to apply "Darwinian" arguments, however loosely understood, across the board to society. He does not exempt arguments that were not designed to show or "prove" that competition was "natural" or progress "inevitable". Friedrich Lange's *Die Arbeiterfragen* (1865) attempted to apply "Darwinism" to the class struggle, but did not escape Marx's scornful dismissal.[28]

In June 1873 Marx sent Darwin an inscribed copy of a German edition of *Capital*, and in October of the same year Darwin wrote Marx a polite but distant letter thanking him for it. This letter was in no sense an "endorsement" of *Capital*; there is no reason to suppose that Marx was fishing for one. Marx, *pace* Edward Aveling, Engels and other perpetrators of "the Marx-Darwin myth", was simply saluting a fellow-scholar whose work he admired.[29] Far too much was to be made of this inconclusive "encounter" between Marx and Darwin by later perpetrators of "the Marx-Darwin myth", particularly the odious Aveling, who himself approached Darwin concerning a dedication of a book that he, not Marx, was writing, then fraudulently concocted the story that Marx wished to dedicate the second volume of *Capital* (which at that point was unfinished) to Darwin.[30] All such exaggerations – they became legion as the "Marx-Darwin myth" ran its

27 Mandelbaum, *History, Man and Reason*, p. 395.

28 Friedrich Albert Lange, *Die Arbeiterfragen in ihrer Bedeutung für Gegenwart und Zukunft*, Duisberg, Vollmer and Vollmer, 1865, passim. Marx to Kugelmann, 27 June 1870, *MEW* xxxii, pp. 685–6, *MESC*, p. 225; cf. Marx to Engels, 14 November 1868, *MEW* xxxii, pp. 202–3.

29 Terry Ball, "Marx and Darwin: A Re-assessment", *Political Theory*, 7: pp. 469–84, 1979; Ralph J. Colp, "The Contacts between Karl Marx and Charles Darwin", *JHI*, 35, April–June 1874: pp. 333–4.

30 Ball, "Marx and Darwin", passim; Shlomo Avineri, "From Hoax to Dogma. A Footnote on Marx and Darwin", *Encounter*, March 1967, pp. 30–2; Terrell Carver, *Marx and Engels. The Intellectual Relationship*, Brighton, Wheatsheaf/Harvester, 1983, p. 136.

course – conceal what is the most obvious fact about their (real, but limited) exchange.

Marx and Darwin lived (and died, a year apart) in Southern England. More exactly, Marx lived as a refugee, as one of a group of German political exiles, *quarante-huitards* and others, in London, whereas Darwin was in and of England. His intellectual landscape and formation was English to the core (though his reading and reputation were international in scope). Darwin was far and away the better-known and thus more controversial figure. Marx, who was marginal by comparison, knew of and read Darwin; Darwin had no knowledge of Marx prior to their exchange and not much more after it. Darwin, jostled about among the prelates and the primates, was accustomed to controversy, but to controversy with theologians and fellow-scientists. He claimed no special knowledge of political economy, which he took to be the subject of Marx's *Capital*; most of the pages of the copy Marx sent him – including those that mentioned him – remained uncut.[31]

This raises a more substantive point. It is a matter of record that Marx and Darwin were to be misrepresented by their followers. Darwin was as suspicious of Darwinists as Marx of Marxists, if not more so. He was a diffident, rather reclusive figure who disliked public confrontation. His acolytes – we need think only of Herbert Spencer (1820–1903) and Thomas Henry Huxley (1825–95) – showed no such reticence, and there were podiums aplenty from which they could thunder forth. And thunder forth they did, often to Darwin's displeasure. Marx's misrepresentation was by contrast mainly posthumous – though even he, on one celebrated occasion, denied that he was a Marxist ("Moi, je ne suis pas marxiste"). Even so, their respective protestations have something significant in common. Neither wished to have his name awarded adjectival status; each had ample cause for concern about what "Marxism" and "Darwinism", as movements, might bring to bear.

I claimed some time ago that the word "Marxian" needs as a matter of urgency to be distinguished from the word "Marxist". "A Marxian belief or tenet is one that can safely be attributed to Marx himself," I wrote. There is a limited number of these.

> A Marxist belief may also be a Marxian one, but not necessarily. A Marxist belief is one held by anyone, academician or political stalwart, who thinks or can persuade others that the belief in question is in accordance with Marx's intellectual or political legacy. It would be tempting to overdraw and simplify this relationship by saying that all Marxian beliefs are Marxist ones but that not all Marxist ones are Marxian. This temptation should be resisted with all the power at one's command. It is indeed the case that not all Marxist beliefs are Marxian; there are far too many of them for this to be

31 Ball, "Marx and Darwin", passim; Colp, "The Contacts between Karl Marx and Charles Darwin", passim.

> possible. But it is definitely not the case that all Marxian beliefs are Marxist, for the good and simple reason that when Marxism developed, knowledge of what Marx wrote was inadequate. We might wish to bemoan this fact for any number of reasons, but the point remains that there is no Marxism that can be regarded as a straightforward exposition (let alone extension) of Marx's views. At the heart of Marx's reception there is instead a paradox. We have today a galaxy of different Marxisms, within which the place of Marx's own thought is ambiguous.[32]

It is noteworthy in this connection that Morse Peckham, the editor of the 1959 variorum edition of *The Origin of Species*, makes very much the same kind of distinction between the "Darwinian" and the "Darwinist". He calls only those propositions and applied assumptions which may properly be ascribed to Darwin "Darwinian"; the others – over which Darwin, as we have seen, had limited control even during his lifetime – Peckham calls "Darwinist". (Moore's *Post-Darwinian Controversies* has recourse to the term "Darwinisticism", which, while not meaningless, might be taking matters a bit far.)

The difference between Darwinism and Marxism is not that the Marxian-Marxist distinction is "political", while the Darwinian-Darwinist is not. Nor yet is it that Marxism developed prior to the publication of some of Marx's most important writings (such as the *Economic and Philosophic Manuscripts*), even though Marxism demonstrably did "develop" in the absence of these. (Darwin's notebooks from the HMS *Beagle*, with their reflections on exploitation, the animal and the human, which would bear comparison with Marx's reflections on exploitation, the animal and the human in the *Manuscripts*, were first published at almost exactly the same time.) The real difference goes deeper. It stems from the fact that Darwinism came to carry the pendant "Social" with remarkable dispatch, despite Darwin's private and public reservations. "What a foolish idea seems to prevail in Germany on the connection between Socialism and Evolution through Natural Selection," Darwin exclaimed in 1879.[33] His words fell on deaf ears, outside Germany as within it. Despite Darwin's misgivings, Darwinism carried over into social and political speculation in short order, and did so, far more rapidly and readily than Marxism, say, carried over or could have carried over into natural science. Socialist Darwinism was always to be somewhat of a one-way street for Marxists, though this did little, it seems, to deter them from jumping on the bandwagon. In compounds like "Social(ist) Darwinism", it is often instructive to note which element gets the noun, which the adjective.[34]

32 Terrell Carver, ed., "Critical Reception: Marx Then and Now", *The Cambridge Companion to Marx*, Cambridge, Cambridge University Press, 1991, pp. 25–6.

33 Francis Darwin, ed., *The Life and Letters of Charles Darwin*, New York, n.d., vol. II, p. 413.

34 Cf. My 'Socialism', in the *Elsevier Encyclopaedia of the Social and Behavioural Sciences*, Amsterdam, 2001, vol. 21, pp. 14485–8.

Worse still, some of those who importunately carried over Darwinism into the social and political realm did so as Marxists, and did so in the more or less sincere conviction that textual warrant for such latitude had been laid down in advance by Marxism's founding fathers. But since these fathers would demonstrably exclude Marx himself, our distinction between the Marxian and the Marxist comes to the fore all over again. Engels proved to be a far more useful source, once he had seen to it and put it about that his words about Darwin in particular, and about natural science in general, were an adumbration of what Marx believed, and not what they really were – an addition to what Marx wrote and wrote about. Engels, as we have seen, may be the most important figure in the history of Marxism. After all, he invented it.

All these developments need to be assessed with some care. At one level, the adjectival status that is awarded a theorist's name when terms like Marxist or Darwinist gain currency is a sign to index of that theorist's strength as a theorist. It happens but rarely. No-one speaks of "Engelsism" or "Spencerism" or "Huxleyism." Even the adjective "Leninist" is often prefixed by the adjective "Marxist-". Yet adjectival status can also provide a mantle that others can assume at will, and mantles, once adopted, can display adherence to a cause as they conceal misrepresentation of that cause's inspiration. Examples, sad to say, abound in the histories of the reception of Marx and Darwin alike,[35] and these histories, to make confusion worse confounded, were encouraged to intersect by Marxist (though not by Darwinist) stalwarts.

Marx's reaction in print to Darwin is a matter of record. It was inconclusive at best. It remains unhelpful to an understanding of Darwin, though taken in itself it is in no way positively detrimental to this task. Marx's observations about Darwin, that is to say, might do little damage if left on their own; but Engels and others duly saw to it that they were not to be left on their own. Engels, in saying more about Darwin than Marx had, and in taking care to do so in Marx's name, advanced claims about Darwin out of a desire "to put communist conclusions on what he believed was a proper scientific footing", just as Terrell Carver says. But Engels's idea of what a "proper scientific footing" would look like owes little (if anything at all) to Marx, and is, in any case, in crucial respects at variance with Darwin's own procedures. Engels, that is to say, is guilty of double misrepresentation: his "proper scientific footing" leaves both Darwin and Marx high and dry. It is by no means too reductive to claim that Engels turned to Darwin for the sake of comprehensiveness rather than accuracy. He appropriated Darwin, without appearing to have read him, or to have pondered his meaning, very carefully, for the sake of shoring up a *position déjà prise*. This *position déjà prise* in turn had to do with Engels's odd notion of

35 Carver, "Critical Reception", passim; J.A. Rogers, "Darwin and Social Darwinism", *JHI*, 33, 1972: pp. 265–80. Cf. Moore, *The Post-Darwinian Controversies*, p. 161; Ernest Barker, *Political Thought in England from Herbert Spencer to the Present*, London, Williams and Norgate, 1915, p. 133; S. Herbert, "The Place of Man in Darwin's Theory of Transmutation, Part II", *JHB*, 19, 1979: pp. 195–6.

the essential unity of (all) scientific method, a blanket uniformity that Darwin's own, hypothetico-deductive procedures call into question. Yet Darwin was the leading natural scientist of his generation. His omission from what was supposed to be an all-encompassing view of science would have been glaring. In this sense Engels could scarcely have avoided harnessing Darwin's name and reputation. The trouble is, however, that while Engels might have been hospitable (in his fashion) to Darwin, Darwin for his part is mightily inconvenient to Engels's compendious conception of scientific method – an omnium gatherum to which Darwin might still offer a salutary corrective.

Engels is, of course, not alone in having misrepresented Darwin, who was, after all, a complex, not to say daunting figure. Getting the measure of Darwin is a challenging task on anybody's reckoning. Yet Engels is not likely to be exonerated for this or any other reason. He is not merely to be numbered among those who garbled the message, since his misrepresentation of Darwin was particularly destructive in its effects, the more so for having been advanced in Marx's name. Engels was instrumental in confecting a link between Marx and Darwin that did an injustice to both of them. He did so, not out of mendacity or perfidy (though the same could not be said of Aveling) but in large measure out of a desire to promote a set of beliefs about what "science" comported, beliefs that were not Darwin's, nor yet Marx's, but all his own (at least at first). It bears reiteration that there is no warrant in any of Marx's writings, let alone Darwin's, for Engels's central conviction – the conviction that was to become a leitmotif of twentieth-century "dialectical materialism" – that laws of nature, laws of social development and laws of thought all follow the same, "dialectical" procedure.

As Terrell Carver puts the matter, "while Engels was sceptical of a Darwinian approach to human history in general … he attributed to Marx and Darwin a common methodology coincident with his own positivist view of science." Engels's 1883 eulogy "reveals very clearly how he aimed to link Marx with Darwinian biology and the physics of matter-in-motion." For Marx, Engels assures us, had discovered "a special law of motion" governing the capitalist mode of production – the law of surplus value. (Engels specifies no comparable "law of motion" in Darwin, which should not surprise us: there are none to be found.) Engels's model of science was inductive (the "facts" provide and provide for the "view"), causal, and law-directed in ways that are altogether insufficient, if not actually alien, to Darwin himself. Engels even believed that in the "Marxist conception of history", "interconnections" were to be discovered "in the facts", and that, altogether similarly, "the accumulating facts of natural science compel us to recognition of the dialectical conception of nature."[36] One wonders what Darwin would have made of such a claim.

36 Friedrich Engels, *Anti-Dühring*, London, Lawrence and Wishart, 1969, p. 19; Friedrich Engels, "Ludwig Feuerbach and the End of Classical German Philosophy", in Karl Marx and Friedrich Engels eds, *Selected Works* (henceforward *MESW*), London, International Publishers, 1962, vol. II, pp. 400–1; Carver, *Friedrich Engels*, London, Macmillan, 1989, p. 346; *MESW*, p. 136.

In reality, both

> Marx and Darwin proposed general theories, one on the development of human society through change in productive activities, the other on the origin of new species through variability, inheritance and natural selection. Yet neither generalization has the same function as the mathematical "laws of motion" established in chemistry and physics, to which Engels turned as models of scientific practice. Engels's enthusiasm for a unified view of science led him to a very hasty attribution of law-like truth to what were in fact useful hypotheses for guiding [future] research in biology and social science respectively.[37]

Darwin on Engels's view of him is to be applauded for providing "further confirmation for his [Engels's] views on the way that science and philosophy were to be reconciled"; Darwin, that is, is to be regarded as having confirmed the grand reconciliation of philosophy and science in which Engels had already located political economy (or Marx's critique of it), cell biology, and recently discovered laws of physics.[38] In the Prefaces to *Anti-Dühring* that were to be written after Marx's death, Engels assures the reader that, in preparing the book, he had covered "a fairly comprehensive range of subjects", from "the concepts of time and space to Bimetallism; from the eternity of matter and motion to the perishable nature of moral ideas; from Darwin's natural selection to the education of youth in a future society". Engels claimed to have given Marx's views on these subjects "a more connected form".[39] That Marx's views on all these subjects (except political economy) were never written down or otherwise preserved does not deter Engels, whose inventories look eclectic, breathless and unfocussed – not to say staggering in their comprehensiveness.

Darwin by comparison seems modest. "Biological phenomena", as Moore quite accurately paraphrases Darwin's thinking, "were altogether ample for many lifetimes of investigation, without adding to them the phenomena of physical, chemical or bio-chemical nature".[40] Engels showed no such restraint. The question for Engels is always "How is science to be regarded?" or "What is to be our 'outlook' (a favourite word) on science?" and not "How is science to be done?"[41] Engels at times proclaims his modesty, but only in relation to Marx – as when, in the later editions of *Anti-Dühring*, Engels tells us that "the mode of outlook expounded in this book was founded and developed in far greater measure by Marx and only in an insignificant degree by myself". "For Engels,

37 Carver, *Marx and Engels*, p. 136; cf. Terrell Carver, *Marx's Social Theory*, Oxford, Oxford University Press, Opus Books, 1982, pp. 36, 55, 62, 66.

38 *MECW*, 40, p. 551; Carver, *Friedrich Engels*, p. 238.

39 Engels, *Anti-Dühring*, pp. 10, 13; Karl Marx and Friedrich Engels, *Selected Works in One Volume*, London, Lawrence and Wishart, 1968, p. 94.

40 Moore, *The Post-Darwinian Controversies*, p. 155.

41 *MESW*, I, pp. 371–2; Carver, *Marx and Engels*, p. 102.

Marx was a giant of modern science capable of the most abstract theoretical work",[42] though it is highly doubtful that Marx thought of himself in anything like the same way. By now, Carver's verdict has stood the test of time.

> The Marx-Darwin relationship has been obscured by misinterpretations of what Marx actually said about [Darwin], by what is now known to be a false view of their personal relationship, and by a willingness of commentators to accept at face value what Engels said about the views of Marx and Darwin and the relationship between them.[43]

That these commentators have been both Marxist and anti-Marxist raises a problem to be turned to later.

42 Carver, *Friedrich Engels*, p. 246.
43 Carver, *Marx and Engels*, p. 135.

4 Scientific socialism on the ground

Haldane, Bernal, and "scientific socialism"

It is difficult at this remove to imagine the proceedings of the Second International Congress on the History of Science and Technology, held from 30 June to 4 July 1931, at the Science Museum, South Kensington. But this Congress was no ordinary, run-of-the-mill affair. The Soviet Union, in an unprecedented move – an unexpected one too, even to the Congress's organizers – flew over to London a high-powered delegation at the last minute, headed by no less a personage than Nikolai Bukharin. As one of Lenin's closest associates during the Bolshevik Revolution, Bukharin had played a significant role in the elaboration of historical materialism and scientific socialism within the Soviet Union. Bukharin's star was not, however, in the ascendant: he had lost his chairmanship of the Comintern, and was removed from the Politburo in 1929. Nevertheless, by 1931 he was still a force to be reckoned with – an intellectual force, for one thing, as we shall see. Bukharin in 1931 remained head of the Soviet Academy of Sciences and Director of Industrial Research for the Supreme Economic Council. Other members of the Soviet delegation to the London Congress included F.A. Joffe, a prominent physicist, and N.A. Vavilov, a no less prominent biologist (who was later to be thrown to the wolves during the Lysenko affair).

In the event it was Boris Hessen, a rather more obscure figure who was both physicist and historian, who addressed the Congress on the same, specially scheduled Saturday morning session as Bukharin. Hessen's paper concerned "The Social and Economic Roots of Newton's *Principia*",[1] and argued that the content of Newtonian physics and mathematics was a reflection both of the technological requirements of the nascent bourgeoisie (at the level of the economic "base", so to say), and of the ideological world-view of the seventeenth-century English bourgeoisie (at the "superstructural" level). It followed from this double service that that Newton's science and mathematics could and should be regarded as "bourgeois" in their own right: they operated, that is to say, within the practical limits set for them by the soon-to-be-dominant class. At

1 Gary Werskey, "Making Socialists of Scientists: Which Side Are You On?" *Radical Science Journal*, 213, 1975: p. 23.

the same time, Newton's science was "ideological" both in its formulation, and in the various theological uses to which it was put by Newton's contemporaries. To turn the argument around, it was, Hessen believed, capitalist entrepreneurs who were responsible, in the last analysis, for the scientific revolution of the seventeenth century. The expansion of world trade necessitated solving technical problems to do with navigation, etc., and these, he rather breezily added, were the "earthly core" of the *Principia*.

Overall, Hessen's paper is a manifestation of the kind of "analysis" that has long bedevilled Marxism-Leninism and given it a bad name. Most people would by now – and not without justice – dismiss Hessen's argument as "an example of the crude economic determinism associated with vulgar materialism", just as Gary Werskey says.[2] Interestingly enough, however, Hessen, alone among the Soviet delegation, stops short of advancing the now-regnant argument that Marxism was a universally valid scientific theory. Instead he adopts a "sociology of science" approach which, in so far as it relativizes science to its socio-political context, presents a claim that could in other hands be turned against Marxism. His fellow-delegates conspicuously and unsurprisingly failed to follow suit. In any case, as I write, the above words "by now" involve the passage of 75 years; this same "vulgar Marxism" was the only Marxism that many or most of those assembled in London in 1931 had ever encountered. The arguments they heard had not yet become stale and hackneyed. This is not to say, however, that at the time of their delivery they were greeted as a breath of fresh air, or that they found ready acceptance by virtue of their sheer novelty. They were not and did not.

Bukharin's argument, the same morning, at first glance fared no better. His more recondite paper – Hessen at least had had an English referent, Newton, about whom everyone present could be presumed to know something – was entitled "Theory and Practice from the Standpoint of Dialectical Materialism". This paper is, in its way, a fascinating document, though it is unmentioned in Stephen Cohen's biography of Bukharin. It clearly reveals an important theme that runs through the present study: the self-interest shown by members of the Party vanguard in establishing Marxism's intellectual credentials as a universally-valid scientific theory, like Darwinism. Such politically-charged self-interest did not always or even often coincide with the careerist self-interest of working natural scientists; but what is significant about Britain in the 1930s is that the two *did* coincide, as we are about to see. A particular conjunction between broader historical shifts and socio-political tendencies, on the one hand, and the career paths (and career choices) of prominent British natural scientists, on the other, can here be seen in action; and it was Bukharin's 1931 paper that started it off.

Bukharin's presentation also in effect records the state of Marxist philosophy in the Soviet Union just as dialectical materialism – which Bukharin

2 Gary Werskey, *The Visible College. The Collective Biography of British Scientific Socialists in the 1930s*, New York, Holt, Rinehart, Winston, 1979, p. 142; cf. "A Russian Roadshow", pp. 138–49.

characterized as "the highest achievement of human thought" without actually defining it – was on the cusp of turning into the ossified, official dogma it was long to remain. (This point, it is safe to say, was lost upon most of the audience in the Science Museum.) The paper began by asserting that science has three major functions: that of increasing our knowledge of the external world; that of inventing and perfecting technological processes; and that of overcoming those forces opposed to human advancement. To perform any of these tasks satisfactorily, "scientific theorists must be closely linked to those who, in one way or another, apply science … including engineers, technicians, and other production workers" – the very categories Bukharin took care to apostrophize in his 1931 presentation. But, Bukharin argued, in words that were to resound throughout the 1930s and 1940s, such a task "can never be fully achieved in a capitalist social order, where mental workers are placed over and divided off from manual workers". It followed that the category of "pure" science is inadmissible. The sciences, said Bukharin, "are not 'pure,' since the selection of an object is determined by aims which are practical, in the long run – and this, in turn, can and must be considered from the standpoint of the causal regularity of social development".[3] Scientists' work, in the words of N. Zavadovsky's accompanying Congress paper, "must be considered from the point of view of social development", just as it was considered in the Soviet Union – which thus held forth the promise of "a social synthesis of science and practice". Scientific progress and social progress are (not to put too fine a point on it) linked in the USSR, as (or but) nowhere else.

It should not be supposed that Bukharin's paper was greeted in London with the kind of thunderous applause to which, by 1931, he had no doubt become accustomed back in the USSR. The majority of the Congress's attendees greeted it, rather, with a stunned silence and an awkward shuffling in their seats, indicating a mixture of bemusement, incomprehension and indifference. The very idiom of what they had just heard, from Hessen as well as Bukharin, was unfamiliar to them. Yet Bukharin in particular (and by no means despite himself), had hit a chord, a chord that resounded among a few attendees (scientific luminaries like J.D. Bernal, Hyman Levy, Lancelot Hogben and Joseph Needham[4] – not to mention many lesser lights who were not present in South Kensington).

3 Nikolai Bukharin, ed., *Science at the Crossroads*, London, Frank Cass, 1971, p. 24.

4 Hyman Levy (1889–1975) was Professor of Mathematics at the Imperial College of Science and Technology. He joined the CPGB in the late 1930s. Lancelot Hogben, a demographer of science, was Professor of Social Biology at the London School of Economics. Joseph Needham, having been trained as a biologist, had by his thirties attained considerable distinction as an embryologist and biochemist. His 3-volume *Chemical Embryology* was published by Cambridge University Press in 1931; *A History of Embryology* (Cambridge University Press) followed in 1934. Elected to the Royal Society at the age of 40. See also *The Great Titration: Science and Society in East and West* (Allen & Unwin, 1969), and *Within the Four Seas* (Allen & Unwin, 1970). Critical symposia on his later, multi-volume *Science and Civilization in China* include those in *Past and Present* 87, 1982 and *Isis* 75, 1984.

The Congress's proceedings were widely publicized – not least because of the sheer publicity value of the advent of the Soviet delegation. The Soviet delegates did not arrive quietly and deferentially, but came in ostentatiously by plane and proceeded to barnstorm the Congress, a Congress that is, in truth, remembered for nothing else. All this made sensational copy, as the Russians well knew as they launched – at Hogben's suggestion – what has been called their "Five Day Plan". This involved a phalanx of translators, compositors, editors and typesetters working as a team around the clock at the Soviet Embassy in London to produce in short order *Science at the Crossroads*, a published compilation of all the would-be Soviet contributions to the proceedings of the 1931 Congress (only two of which were formally delivered there). The story of its production and appearance is the stuff of legend. The Russian delegation and the Soviet Embassy played it for all it was worth.

And it was worth more than might initially meet the eye. While most of the historians of science – rank amateurs and hobbyists, as well as (comparatively few) professionals – who had assembled in London that Saturday morning were blissfully unaware of Marxist views of science, others were to prove more receptive. Hyman Levy reflected back on the Congress in 1939:

> the standpoint consistently adopted by (the Russian) delegates crystallized out in remarkable fashion what had been simmering in the minds of many for some time past. What became clear was not only the social conditioning of science and the vital need for planning … but the impossibility of carrying this through within the framework of a chaotic capitalism.[5]

This became a vital ingredient of what Werskey (not without precedent) calls "Bernalism", as we shall see. J.D. Bernal, Lancelot Hogben, Hyman Levy and Joseph Needham were all on their own admission turned around by what the Soviet delegation had said (and done) in 1931. Now, it seemed, they had a new way of looking at science, with a political agenda in mind as well as a scientific one.

Nor were they alone in looking at it in this way. At the same time, scientific workers – the very "engineers, technicians and other production workers" singled out by Bukharin in his Address – were themselves becoming rather more familiar with Marxist views than the majority of those who were present in South Kensington to hear him at first hand. It is to these scientific workers that the following litany in Bukharin's presentation (which was prospective, not retrospective) was addressed:

> Micro-balances, the water-level, seismographs, the telephone, the telescope, the microscope, the ultra-microscope, the chronoscope, the Michelson grating, the electrical thermometers, bolometers, the photo-electric element of Elster and Geitel, galvanoscopes and galvanometers, electrometers, the

5 Hyman Levy, *Modern Science*, London 1939, p. 406; cf. Werskey, *Visible College*, p. 149.

> apparatus of Ehrenhaft and Millikan, etc. – all these immeasurably widen our sensual capacities, open new worlds, render possible the victorious advance of technique.[6]

The scientific workers to whom Bukharin's inventory (which has but limited application to the past history of science) appealed were people who would be less likely to ask, after Engels *et al.*, "How is science to be *understood*, and what is our 'standpoint' (a favourite word of Engels's) to be when we are faced (or 'confronted') with science?", and more likely to think about how science is to be *done.* Their "standpoint", so to say, was in no way problematic. It came with the job description.

This is not to suggest that all British scientific workers were receptive to Bukharin's views. The overwhelming majority were not. But some were, and these, though few in number, had the advantage of being strategically concentrated in one key location, as we shall see. Why, though, did these listen, while others did not? Why were a minority of scientific workers and researchers to prove as receptive to "scientific socialism" *à la* Bukharin as they evidently were?

To begin with, science was already politicized, after a fashion. It is surely a sign of the times that the respected journal *Nature*, which in general was relentlessly anti-Soviet, nevertheless found space in its (rather widely-read) pages for the view that, wherever one looked in the 1930s, it was the imperatives of society and politics, and not the imperatives of science, that ruled the roost; however much scientists might have regretted this, it was society and politics that had the final say when it came to scientific development, as well as social and economic questions. More particularly, the dominant personalities and institutions of British science in the 1930s were in no way apolitical or "above" politics. Quite to the contrary, prominent scientists (who were recruited from a very narrow social base) were ideologically committed to the strengthening of British capitalism at home and abroad. Such near-universal support seemed to need no elaborate justification; indeed, it was in large measure unquestioned. Prominent scientists' well-publicized support of science-based monopolies and/or "free enterprise" were common (if sometimes incoherent: science-based monopolies can scarcely be adduced as instances of "free enterprise"). Prominent scientists' advice to the government on how to enhance the productive and military power of the nation was commonly proffered, less often solicited, and followed less commonly still – much to scientists' chagrin. And prominent scientists maintained tight, hierarchical control over their own minions and acolytes within the profession itself, in such a way that expression of views contrary to their own would be noted and marked down – and could be used to hobble or stymie careers.[7] All in all, the structure of the scientific profession could hardly have seemed less propitious at first glance to a radical upsurge either within its ranks,

6 *Science at the Crossroads*, p. 21.

7 Werskey, *The Visible College*, pp. 127–8; cf. pp. 212–13; on *Nature*, see pp. 244 ff.

or at its pinnacle. That such a dual upsurge nevertheless took place, caught on, and was as successful as it was should therefore give us pause. Bukharin's speech may have removed scales from the eyes of Bernal, Haldane, Needham, Levy, Hogben and others, on their own admissions, but these were a small (if distinct and vocal) minority. Their chances of launching a left-scientific agenda, such as the one that became known as "Bernalism", at first looked remote. Success was from the outset against all the odds; the wonder of it is not that it proved over the long run to be flawed and brittle, but that it ever got off the ground at all. For it did so in such a way as to confound the expectations of all too many "voices of experience", all too many "older and wiser" heads.

How then did this happen? Why, despite the counterweights listed above, were a minority of scientists prepared to be as defiant, as activist, as they turned out to be? There are good reasons for their receptivity, reasons that may have been applicable to "the West" at large, but which also had specific reference to Britain in particular. Here, at the pinnacles, there were instances of breathtaking scientific advance. To take but one year (admittedly the most exceptional one) as an example, 1932 was an *annus mirabilis* in the history of British science if ever there was one. C.P. Snow characterized it as "the most spectacular year in the history of science" at large. By its end, Cockcroft and Walton had split the atom, James Chadwick had discovered the neutron, and P.M.S. Blackett had discovered the positron. The mismatch between these world-historical scientific breakthroughs, on the one hand, and broader political, social and economic currents, on the other, could not have been much more glaring – or so it seemed, understandably enough, to scientists, scientific workers and political militants (three sectors that bid fair, as the 1930s ran their course, to draw together as never before). Faced with this jarring discrepancy, and "contrary", in Werskey's words,

> to the earlier expectations of … the scientific establishment, British capitalism in the 'thirties (seemed to be) unable to (establish) an economic and political environment conducive to the development of a scientific renaissance. Not only were scientists under-employed, but their advice to the government (even on gas masks and Air Raid Precautions in the build-up to war) was plainly ignored. While the Depression was undermining scientific morale at home, the rise of fascism (abroad) was playing havoc with the vaunted internationalism of science.[8]

British scientists' frustrations during the 1930s did not, however, all point in the same direction. There were times when they pressed for increased relevance to broader political purposes *and*, at the same time and in the same breath (as it were), for greater respect and autonomy as a scientific "estate" in its own right. Much hung on what kind of "broader political purposes" were on offer, and

8 Werskey, *The Visible College*, pp. 238.

from whom. Marxism in its Soviet form, the only kind of Marxism that was extant at the time, seemed to many a strategically-placed British scientist to be alone in simultaneously proffering a solution to both sources of frustration. Conversely, successive Conservative governments, which themselves seemed to be the only kind on offer throughout "the Baldwin era", could be condemned with good reason whether or not they succumbed to pressures for re-armament against the burgeoning Nazi threat. If they did succumb, scientists' autonomy was to that extent eroded; if governments did not succumb, they remained suspect for other reasons, obliviousness to the Nazi threat prominent among them. In the highly-charged atmosphere of the 1930s, no single side in the various debates enjoyed or could have enjoyed a monopoly of "good faith," a disposition that was all too frequently eclipsed by broader, more urgent political considerations.

The British state's intervention within the management of scientific research, which had been part of the war effort during the First World War, was, by the 1930s, in the eyes of many scientific workers a utilitarian, state-sponsored challenge to a scientific community that had, within living memory, prided itself on its hard-won autonomy. Such autonomy was persistently beleaguered in the inter-war period, to an extent that has, in some ways, been subsequently obscured by the importance to the war effort of the scientific backroom "boffins" during the Second World War – a period when scientists became not altogether unsung heroes, and when the scientific estate truly came into its own. A National Union of Scientific Workers was founded in 1918 – it renamed itself the Association of Scientific Workers in 1927 – to improve the economic position of scientific workers, to defend whatever was left of their autonomy, and, at the same time, to fight for greater public investment in science, lest science be derogated to the role of handmaiden to the private (a.k.a. capitalist) sector. These aims fell short of fulfilment, not least because they were predicated on the prospect of an economic recovery from the ordeal of war and the effects of the General Strike of 1926. This recovery was, in the event, pre-empted by the Depression of 1929 onwards and by the mass unemployment that stained the 1930s. The more left-wing members of the Association had a ready explanation for this failure to hand: what else could be expected from a declining capitalist society – evidence of decline was everywhere – once it is deprived of the profits of war?

Under these circumstances, it is perhaps unsurprising that the Cambridge (i.e. Cambridge University) Anti-War Group (which was formed on the eve of the 1931 London Congress) ineffectively condemned the Conservative government's militarization of its scientific research budget during the 1930s. The world slump had inspired an incipient radicalism inside the universities for the very first time in British history. Students were at last beginning to manifest a social conscience, just as graduates were beginning to swell the ranks of the already numerous (and disgruntled) unemployed. Once the Nazi threat finally got taken seriously, part of the Conservative government's response took the form of the further militarization of the scientific community (not least at the

National Physical Laboratories at Teddington, the Royal Aircraft Establishment, the Woolwich Arsenal, etc.), a militarization that was to persist and expand during the War, just as many scientists and scientific workers had long feared. The government was acting with what could kindly be termed insensitivity; had it forgotten that the militarization of science had been one of the original grievances resulting in the formation of the National Association of Scientific Workers in 1918? Had not a past point at issue now been transformed into a long-standing grievance as a result of government action? Was not the grievance in question one that no inter-war government so much as addressed, let alone rectified?

What is more surprising, however, is that some of those voicing these grievances and condemning government policies added a corollary or rider to their condemnations that could almost have been lifted, word for word, from Bukharin's 1931 Address: that only under a socialist regime like the USSR's – and there were no others on offer at the time – could science properly be encouraged, expanded and geared to the liberation, not the destruction, of humanity. Bukharin's words were becoming not just a characterization of science, but a political agenda.

Under these circumstances, it is unsurprising that the Communist Party of Great Britain (CPGB) brought considerable pressure to bear on scientific workers, who became, over time, a key constituency. Party pressure was not, however, constant or invariable; it varied with the demands of the USSR, which was bent at the time on making the Third International an instrument of Soviet foreign policy. The CPGB in the early 1930s was cleaving to the "class against class" line that was endorsed at the time by the Comintern: the rank and file of the British Labour movement was to be turned away from Labour Party and Trade Union Congress (TUC) leadership, in preparation for the coming crisis in world capitalism, of which 1926 in Britain and 1929 everywhere else were said to be but avatars or presentiments. The complication with respect to scientists and scientific workers was that if the leaders of the Labour Party and the TUC were (in effect) to be written off as "social-fascists", then scientists, who were increasingly being inveigled, whatever their rank or standing, to serve the ruling class and the Conservative government much more directly, were even more beyond the pale.[9] Twist the logic a little, in the manner of an imaginary but imaginable *advocatus diaboli*, and the "class against class" line as this was directed towards scientists great and small can be made to seem defensible. After all, it was obvious to everyone in the movement that, almost to a man, scientific researchers at all levels were in the direct employ of the British state and the capitalist class.

As the 1930s proceeded, however, the CPGB was moved by the sectarian excesses of "class against class" to reconsider its opposition to the recruitment of intellectuals in general and scientists in particular. Contrary to the CPGB's earlier prognostications, rising unemployment and lower wages were signally

9 Werskey, *The Visible College*, pp. 150–1.

not following the script the Party had written; they showed no signs of having the desired effect. They were dampening, not provoking, class conflict and industrial unrest at the point of production. Nor were the policies of the Labour Party driving British workers into the arms of the Communists, who remained weak. Instead of accepting the CPGB embrace, the Labour movement in Britain during the 1930s remained what it had been ever since the General Strike: divided, demoralized and impotent. The General Strike, which set Britain off from other industrialized societies in the mid-1920s, was a disaster for the working class in general and the labour movement in particular – disastrous not because it could be portrayed by the press as having been violent (as the Paris Commune of 1871 had been portrayed), but because of the ease with which it was defeated, and its militants' hopes dashed. The General Strike was widely believed, into the bargain, to have been a sell-out and betrayal of the working class by the leadership of the TUC.

The onset of the ideological shift in the Party line is an oft-told tale indeed, and will not be repeated here. It will, however, be mined with present purposes in view. The long and the short of it is that partly under the impress of the Spanish Civil War, the "class against class" polarization gave way as the 1930s proceeded to a Popular Front line that was (among many other things) much more favourable to scientists than "class against class" had ever been. The seemingly extreme idea that it was the advancement of science, and not the actions of the working class, that would be the key element in bringing about the downfall of capitalism thus became significant (though not unquestioned) in any industrialized country where the Communist party was allowed to operate during the 1930s, to be sure. But it was particularly prominent in Britain, where the working class was still reeling from the disaster of 1926, which (to reiterate) had had no equivalent elsewhere. (It is noteworthy that the French working class was much more militant than the British during the 1930s on the political front, and more militant even in the USA, where large numbers of workers were becoming economic militants for the first time since the turn of the twentieth century.) Britain was also (more positively, but no less ironically) one country where science appeared to be coming into its own.

Whatever the Party notables may have believed, the fact remained that "(n)ot many young researchers had the political experience, emotional strength and professional assurance necessary" for the success they eventually enjoyed. Yet these very characteristics – political experience, emotional strength and professional assurance – were precisely what J.D. Bernal and J.B.S. Haldane possessed, exhibited, broadcast, exemplified and personified.[10] Bernal (1901–71) was a polymath x-ray crystallographer, a founding father of molecular biology and (not least) arguably the most outstanding Marxist scientist of his day. C.P. Snow, who modelled Constantine in *The Search* on "Sage", as Bernal was known, said of him that he was "perhaps the last of whom it will be said, with

10 Werskey, *The Visible College*, pp. 127–8, cf. 212–3, 244 ff., 248.

meaning, that he knew science".[11] But even this is not all. Ezra Pound said of Upton Sinclair that he was a "polymaniac", and much the same might be said of the energumen that was Bernal. J.B.S. Haldane (1892–1964), whose specialty was Population Genetics, was Head of the Genetics Department at the John Innes Horticultural Institute, and Research Professor in Physiology at the Royal Institution as early as 1926. But it was as Dunne Reader in Biochemistry and Professor of Genetics at University College, London, after 1933, that Haldane – who had been awarded his Fellowship in the Royal Society for the Advancement of Science at the early age of 40 – became best known. These are important figures to the argument advanced here, not only because Bernal and Haldane were "public intellectuals" who came of age in 1930s Britain, and not only because each of them was both polymath and publicist – Haldane in particular could pack a crowd in, at the Albert Hall or Trafalgar Square – as well as specialist. Their importance to the argument advanced here is also, more specifically, that each of them, in his own way, used his prominence and renown as a natural scientist to subscribe openly and vocally to the idea that there could be a scientific Marxist study of society and history. "As advocates and popularisers of scientific socialism," Werskey rightly insists, "they had no equals on the left"[12] – no equals anywhere. Their advocacy and proselytizing proceeded energetically – Haldane and Bernal had to them an almost Victorian capacity for hard work – despite, or because of, their hard-earned credentials and standing as celebrated natural scientists. *Despite* their status, because they knew and understood the procedures and protocols of natural science intimately and from the inside; *because of* their status, for the good and simple reason that each of them, in his own way, used his standing within the fraternity of scientists to proselytize the tenets of scientific socialism, much as Engels and Bukharin had understood these. With these credentials, says Werskey, "they became uniquely qualified to define and articulate a socialism that was truly scientific".[13] Whether or not this was or could have been "truly scientific", the fact remains that Bernal and Haldane were no mere catalysts in its formation; they were inspirations. Their activities – their prominence – helps explain that while any change in the Party line, however propitious and timely, could not have inspired younger scientific workers all on its own, in this of all instances it did not have to resound in a vacuum.

To gain some purchase on the influence and prestige of Bernal, Haldane *et al.* during the 1930s we must see their prominent positions in a rather fuller context than heretofore. We must in other words take our bearings. The world of the

11 Werskey, *The Visible College*, p. 81. See also Fred Steward, "Political Formation", in Brenda Swan and Francis Aprahamian, eds, *J.D. Bernal: A Life in Science and Politics*, London, Verso, 1999; Andrew Brown, *J.D. Bernal: The Sage of Science*, Oxford, Oxford University Press, 2005, *passim.*

12 Werskey, *The Visible College*, p. 149. On Haldane, see R. Levins and R. Lewontin, *The Dialectical Biologist*, Cambridge, Harvard University Press, 1985, *passim.*

13 Werskey, *The Visible College*, p. 175, cf. pp. 248, 252–3.

1930s in Britain was made up not just of mass unemployment, dole queues, the Means Test, the hunger marches from Jarrow, and Stanley Baldwin – disgraceful though these phenomena undoubtedly were. Other features, like Mass Observation surveys, the Grierson documentary movement in film, the dramatic advances in science, and the rise of what Samuel Hynes has called the "Auden Generation"[14] need to be added to the mix. And so should the underlying fact – an important fact to what follows – that during the 1930s the intelligentsia made inroads into people's everyday lives more than ever before; at the same time, the Left was making parallel inroads into the intelligentsia more than ever before. (And, as we have seen, scientists were themselves making parallel inroads into the Left at the same time too.) The cultural impact of the Left, as the CPGB was well aware, was out of all proportion to its electoral influence (which, in truth, was at an all-time low). Today, 1930s intellectuals are most readily encountered through George Orwell's well-documented hostility to them, which itself speaks volumes about the period. His ire was witheringly directed against "shock-headed Marxists chewing polysyllables", and the "huge tribe of sleek little professors". Even though Orwell in effect had his finger on scientists as well as poets, it is the 1930s poets – Orwell charmingly termed them "the Nancy poets" – who are remembered today. Auden and Spender are still household names, as Bernal and Haldane are not. Scientists' contributions, unlike those of the poets, have largely been forgotten or eclipsed. Yet it could be argued that while "the Auden generation" was largely a spent force by 1945, this was the year when the "science and society" movement inspired by Haldane and Bernal was just coming into its own.

Be all this as it may, the penetration of the media by the left intellectuals gave Bernal, Haldane and others a place to stand, a platform from which to broadcast their views. The CPGB was, if anything, rather slow at first in taking advantage of this platform; Haldane and Bernal, unperturbed, did so with gusto and alacrity. This very fact enables us to tighten our focus. Bernal and Haldane, who were by this time at the summit of their profession, had during the 1920s put their scientific careers well ahead of their political commitments, which, as yet unformed, remained at the level of good intentions. The CPGB's sea-change, its adoption of a Popular Front strategy (which it espoused only in 1938, rather later than its sister Parties) encouraged them to continue along the same lines, pursuing and attaining professional advancement, getting to the cutting edge of their various areas of specialization – the better to become "public intellectuals", this time with the CPGB's active encouragement. But, as Werskey's *The Invisible College* points out, "the science that all three of them embraced was, even as they would have admitted, pretty far removed from the central antagonisms of capital and labour" – even if Molecular Biology, Genetics, and Developmental Biology were themselves cutting-edge areas of research among scientists at the

14 See Samuel Hynes, *The Auden Generation. Literature and Politics in England in the 1930s*, London, Bodley Head, 1976, *passim*.

time. All three would continue to preoccupy leading biologists after the Second World War, just as they had before its outbreak.[15] More pointedly, all three areas were in the 1930s regarded as "pure"; they would thus have secured the condemnation of Bukharin and other Soviet notables had not the Comintern switched tracks, and had Stalin not purged Bukharin (*et alia*) soon after the switch (which was "recommended" by the Comintern in 1935). The pursuit of "pure" science was by the late 1930s what the CPGB and the Comintern wanted – even though (or precisely because) its pursuit entailed that Bernal, Haldane, Needham and others "practiced their research within the most rarefied and powerful of scientific communities", Cambridge, where Walton, Chadwick and Blackett were all, in the glory days of 1932, based at the same laboratory, the Cavendish. (It is, incidentally, a *leitmotif* of *The Visible College* that "the ideals and ethos of Cambridge High Science, of the Cavendish and the Dunn laboratories, [pervaded] Bernal, Haldane and Needham's views"; they would always remain scientists first, even throughout their most political *engagé* period). Nowhere else in the United Kingdom were so many researchers concentrated in one place.[16] But the importance of Cambridge as a centre of scientific research does not end here. Cambridge boasted a nucleus of research laboratories, of research workers and of radicalized researchers. These last-named were few in number but strategically concentrated in one, key location, where they were, so to speak, on the spot, and in a position to gain inspiration at first hand from the *élan*, sprightliness and sheer ubiquity of Bernal, in particular (Haldane was the more peripatetic of the two, Bernal the more kinetic).

For these and other reasons (Leninist "vanguardism" prominent among them) the stage was set during the 1930s for the idealization of science as well as society in the Soviet Union, an idealization that was especially marked in the voluminous writings of J.D. Bernal. Indeed, "science", "progress" and "society" were frequently conflated by Bernal, Haldane and a host of other, lesser lights – not least in the pages of what became on its publication in 1939 the "science and society" movement's *vade-mecum*, Bernal's *The Social Function of Science.* Even Joseph Needham, who was in general more reticent and less publicity-conscious than Bernal and Haldane, "saw the advance of science and socialism as virtual synonyms for the same process".[17] The Soviet Union became the embodiment of both scientific and social progress in such a way that it became increasingly immune to attack from certain quarters – unless, that is, the attacker was willing to withstand counter-accusations either of having questioned science and progress themselves, or of having actively betrayed them. (Fairness in argument is not at a premium under certain conditions; and some of these conditions evidently pertained in the perfervid atmosphere of the 1930s.)

Small wonder, then, that (in Werskey's words) "no left-wing movement ever

15 Werskey, *The Visible College*, pp. 88–9.

16 Werskey, *The Visible College*, pp. 214–15.

17 On Needham, see David Caute, *The Fellow Travellers*, London, Quartet Books, 1977, p. 25; see also Francesca Bray, "Obituary", *Isis*, 87, no. 2, 1996: pp. 312–17.

became quite so obsessional about the scientific road to socialism as the one in Britain".[18] Moreover, as Werskey is also well aware, while science was coming into its own in other countries too, no other left-wing movement committed to the scientific road could boast a pair of scientific luminaries of the stature of J.D. Bernal and J.B.S. Haldane.[19] Werskey's words are worthy of being quoted at length. "To non-scientists in the Communist party, the Popular Front and the public at large (Bernal and Haldane) would hammer away at the liberating role that science had played … and could play again, once it had broken free from its capitalist shackles. These points would be brought home even more forcibly to their fellow scientists, who were told that there was no certain remedy for their profession's present frustrations, no reasonable hope of personal, scientific, or social progress, unless they aligned themselves with the progressive forces of the Popular Front.… There were now (in the late 1930s and 1940s) groups of socialists and scientific workers who were ready to heed them. This was partly a tribute to how much the political climate had changed. But it was also a reflection of (their) efforts that they had got themselves accepted as serious figures on the left and as highly esteemed colleagues inside their own professional community. They were real scientists and authentic socialists", and as such they spoke, increasingly, from positions of power as well as prestige and renown.[20]

Such prominent personages and revered "public intellectuals" could of course be regarded as being above the fray that afflicted those who were more junior and professionally insecure, but no less politically committed. Geoffrey Crowther, the Science Correspondent of the *Manchester Guardian* (who was also a de facto member of the CPGB, and who proselytized shamelessly on behalf of science in the Soviet Union)[21] opined that "left-wing scientific workers could mightily enhance their political effectiveness by achieving greater professional recognition". He blithely added that what "that meant, among other things, [was] attaining Fellowships in the Royal Society … the first duty of a communist scientist was to be 'good,' i.e. a conscientious and successful scientist."[22] Fellowships in the Royal Society do not, however, grow on trees, as Crowther, of all people, was well aware; they were available to only a favoured few. Even so, the same rule of thumb applied, and was meant to apply, all the way down the line. The Party was above all consistent: no radicalized scientific workers during the 1930s and beyond them had to choose between their science and their politics – always provided that their sympathies were safely with the CPGB and, by extension, with the Soviet Union (as they increasingly were, until the moment of truth arrived in the form of the Lysenko affair). The Comintern

18 Werskey, *The Visible College*, p. 178.

19 Werskey, *The Visible College*, pp. 170–5.

20 Werskey, *The Visible College*, p. 252.

21 Crowther, quoted in Werskey, *The Visible College*, p. 153; see also J.G. Crowther *Soviet Science*, London and New York, Dutton, 1936, *passim*, an extraordinary mixture of information and propaganda.

22 Werskey, *The Visible College*, p. 153.

after 1935 was particularly anxious that all relevant militants should remain in their labs and be regarded by their peers and superiors as being "good" scientists, above all else. This may have been a key development. Success in science – even in "pure" science – was now a *fides efficax*, the highest form that *political* morality could take.

The de facto alliance of Bernal, Haldane, the scientific left, the CPGB and the Popular Front was boosted by the Spanish Civil War, for obvious reasons; but we can now see that it was more immediately committed to a political strategy that had little to do with Spain in any direct sense, and a great deal to do with Britain. This was the strategy of bringing scientists into the socialist movement by contrasting (along the lines laid down in Bukharin's 1931 Address) the frustration of science under capitalism with the signal and exemplary scientific achievements of the USSR. The force of this argument derived in considerable measure, as we have seen, from the stature and authority of the distinguished scientific personages who put this strategy forward and championed it. The arguments these personages broadcast and proselytized suggested that science, modernity and communism were different aspects of the same, forward historical momentum.

Here the reminiscences of Benjamin Farrington, a CP member and classicist who returned to the UK from South Africa in the mid-1930s, are apposite and to the point. Farrington said,

> (M)y impression, when I got to London and began to meet people was that … (the Marxism of British Marxists) was of a peculiar brand. They seemed to be under the impression that Marxism had originated from scientific sources, I mean the physical sciences, and not to be so much aware of the social and philosophical background.… I found a complete optimism about Marxism and science. It seemed to them, and I heard the actual words from them, that Marxism was the theory which gave science its opportunity.… And it seemed as if science and Marxism had absolutely been married to one another – they were the same kind of thing.

Farrington's testimony, as Werskey indicates, is of particular interest because it comes from a communist who worked closely with and greatly respected Bernal, Haldane and Hyman Levy.

> Moreover, as a noted historian of Ancient science and sympathetic biographer of Francis Bacon, (Farrington) cannot be charged with the traditional biases of an Arts man who ignored or denigrated scientific knowledge and its practitioners. What Farrington did find objectionable was the "scientism" of Bernal (Bernal "was under the impression that Marxism is a product of the physical sciences") and his associates, their over-evaluation and reification of their science as the revolutionary force behind the collapse of capitalism and the rise of socialism.[23]

23 Werskey, *The Visible College*, pp. 250–1.

Farrington's observations have much else to commend them. Bernalism operated with a highly reified, and highly capacious concept of science, which at once became a method, an institution, a cumulative tradition of knowledge, a productive force, and a moulder of minds.[24] Indeed, it could be argued that not only was science a force of production, according to Bernal: it was *the* force of production, pushing all other contenders out of the way like a cuckoo in the nest. We can see with the benefit of hindsight what was less evident, more occluded at the time: that Bernalism substituted for human praxis *à la* Marx science as a kind of portmanteau demiurge.[25] Human action, whether political or economic, is eclipsed, unless it coincides or overlaps with the ever-increasing grasp of science. Farrington was quite right: Bernal, who prided himself on his knowledge of orthodox Marxism, nevertheless seems to have thought that dialectical materialism and scientific socialism were valuable in that they confirmed his own understanding of science as the most creative force in human history. But just as dialectical materialism emphasizes science at the expense of human agency, as we shall see, so too did Bernal's excursions into dialectical materialism occupy an orbit that was rather distant, not just from the orbit of human labour in general, but even from his own scientific work in particular. Bernal was unperturbed: in words that confirm Farrington's suspicions, he insisted over and over again that

> the present economic system and the advance of science cannot for much longer go on together. Either science will be stifled and the system itself go down in war and barbarism, or the system will have to be changed to *let science get on with its job*.[26]

Could it just be – this, of course, could be the subject of another book – that Joseph Needham's subsequent work, a colossal and unequalled multi-volume study of the history of Chinese science, was to be understandable, in part, as an extended, critical response to Bernal's (surely exaggerated) views about the reach and purchase of science? This would make Needham's stupendous scholarship the most enduring testimony to the hold that Bernalism continued to have (in spite of all) throughout the later twentieth century.

24 Werskey, *The Visible College*, p. 186.

25 Werskey, *The Visible College*, pp. 188–9. As Sahota Sakhar points out,

> for Haldane, the test of dialectical materialism was neither whether it contributed towards desirable political goals, nor whether it was a precondition or consequence of an ideology which led to appropriate political practice, but simply whether it afforded an adequate representation of science.

See Sahota Sakhar, "Science, Philosophy and Politics in the Work of J.B.S. Haldane, 1922–1937", *Biology and Philosophy*, 7, no. 4, October 1992: pp. 385–409. See also Arthur M. Shapiro, "Haldane, Marxism and the Conduct of Research", *Quarterly Review of Biology*, 68, no. 1, March 1993: esp. pp. 71, 76.

26 J.D. Bernal, *The Social Function of Science*, Cambridge, MIT Press, 1969, p. 158. Emphases mine.

More immediately, Farrington's words suggest something very important to what I am calling "socialism on the ground". It was *as* scientific socialism that Marxism penetrated the UK during the 1930s and beyond. That Marxism's supposedly "scientific" credentials eased its reception among (some) British scientists is not at issue. That Bernal, Haldane and others, armed with and fortified by this same "scientific socialism", inspired a "science and society" movement that made impressive gains is not at issue either. But much of the strength of Bernal's argument depended on the actual state of science in the USSR, which in truth had been the weak link in the equation all along. The Soviet Union was said to epitomize science and progress not so much because first-hand accounts bore out this view (stage-managed tours for fellow-travellers and true believers notwithstanding).[27] Nor was it because the international scientific community at large was in a position to pass judgment on this question, if indeed its members were ever of a mind to do so. Rather, Soviet science was the epitome of progress in majestic stride because by definition it somehow had to be the antithesis of all that was wrong with capitalist science in the West. All it would take to show up the brittleness of so thin, so negative, so definitional a version of Marxism was a well-publicized failure of Soviet science. And the Soviet Union duly provided one, at the highest level, in the form of the Lysenko affair, which culminated in 1949. Again, the reverberations of this affair struck deeply everywhere, but deeper in the UK, in certain respects, than anywhere else. It all came at a steep price, and the bill was finally tendered: as we shall see in more detail below, it left much of Haldane's hard-won reputation in tatters. Even so, once this disgraceful episode came to light, it is striking (and comes as somewhat of a relief) that Haldane, Needham and Bernal himself were noticeably unprepared to advance the view that genetics was wrong and Marxism in its Stalinist guise right.

The story of this sorry *débâcle* has often been told, and will not be repeated here, except for its disastrous impact on the "science and society" movement in Britain, inspired as this was by Bernal, Haldane and other luminaries. The most significant problem was that, as scientific authority was being trumped in the Soviet Union by political orthodoxy (as Stalin currently understood this) some of Britain's leading radical researchers – Haldane, Bernal, Hogben – were among the world's foremost advocates of classical genetics, the very classical genetics that was being wantonly overridden in the Soviet Union by political fiat. While Joseph Needham had had some reservations about C.H. Waddington's view that the development of classical genetics was the most significant step forward in biology over the past 25 years, Bernal, for his part, had by 1937 been completely won over by it. He subsequently "regularly engaged in experiments and discussions designed to elucidate the molecular structures underlying … basic hereditary units"[28] – the very structures whose efficacy, whose very

27 See Caute, *The Fellow Travellers*, passim.

28 Werskey, *The Visible College*, p. 207.

existence Lysenko, with official support, was at all costs bent upon denying. All prominent British geneticists, including those who (as we have seen) were predisposed to smile approvingly on Soviet science and the new and more golden future it heralded, suddenly found themselves committed to the very theories that had been called into question, and forcibly dismissed as disreputable, in the USSR itself.

What made matters even worse for Bernal, Haldane and others was that the British scientific left had, publicly and in print, denounced Lysenkoism as being "unscientific" prior to Stalin's putting T.D. Lysenko in charge of Soviet biology in 1948. To give the most prominent of examples, J.B.S. Haldane had argued that Lysenko's "attacks on the importance of chromosomes in heredity seem to me to be based on a misunderstanding", and, more damningly still, that it "would be very serious if he [Lysenko] were dictator of Soviet genetics"[29] which is what, in effect, Lysenko did become in 1948. This put Haldane in an impossible position, akin to what in chess is known as a *Zugzwang*: anything he now said, anything at all, would inevitably compromise either his scientific or his political credentials. Haldane now resembled Hobbes's "bird in lime twigs": "the more he struggles, the more belim'd". Nor was he alone: the various squirmings and contortions within "science and society" circles in Britain make painful reading. To the scientific right that was by the late 1940s girding its loins (and probably lining its coffers) with the onset of the Cold War, Lysenko was, however, manna from Heaven.

It remains possible to argue, here as elsewhere, that the right's was too easy a victory, and that a more sophisticated view of Marxism than that espoused at the time by the British scientific left might have precluded it. What would have been required for the pre-emption and demolition of Lysenko was a more sophisticated view of science too. While this latter is not a claim to be advanced lightly, it is not a very difficult claim to support. Even before the Lysenko affair blew wide open, prominent British geneticists had gone on record as saying, in print, that the controversy was a localized scientific dispute having to do with Soviet science and Soviet science only; it need not therefore perturb those who were engaged in the study of genetics in the United Kingdom, who could simply avert their eyes from so unpleasant and disreputable a phenomenon and proceed apace as though nothing untoward had happened. At this point much of the damage was already done. Readers were all of a sudden asked to take seriously the idea that Soviet science was one thing, Western science another – that is, that nothing is left of the unity and protocols of scientific enquiry itself. "The notion that there could be two utterly dissimilar sciences – one socialist, the other capitalist – had never seriously been debated among left-wing scientists (in Britain), let alone publicly discussed with less committed, more liberal researchers", as Werskey points out. Instead, "the scientific left in Britain had oriented its

29 In 1948, Haldane's weekly column in the *Daily Worker* had taken issue with Lysenko. See D.B. Paul, "A War on Two Fronts: J.B.S. Haldane and the Response to Lysenkoism in Britain", *Journal of the History of Biology*, 16, no. 1, 1983: pp. 1–37.

politics around the deeply-held conviction that there was just one international science, and that it could only be fully practiced and humanely applied in a socialist society". Now, with the Lysenko affair at full throttle,

> the British scientific left was precipitately and mechanically imposing the same "two camps" philosophy of science that it had effectively demolished in the 1930s. Their resorting to self-contradiction in this way could only play into the hands of the scientific right.[30]

Obviously, this category, the "scientific right", is one that should itself raise eyebrows. On most accounts, left–right distinctions, being politically charged, thus out of their element, quite simply have no place in science. The anti-communist scientific right is however no figment of the imagination. Nor indeed was it a *deus ex machina* proceeding from out of nowhere. It emerged during the late 1940s, flourished later on as a constituent part of the Cold War, would merit separate study in its own right, and cannot be discussed here. Suffice it to say for present purposes that its victory during and as a result of the Lysenko affair was cheaply won, indeed handed to it on a plate. The British "science and society" movement, having been built up so laboriously – and against all the odds – by Bernal, Haldane and others, proved brittle and vulnerable in the event of its nemesis, the Lysenko affair. Its defeat, which is not without its tragic aspect, could perhaps have been guarded against, even avoided, by a less politically compromised version of Marxism. But such versions were slow to emerge, and their paths were blocked – not least by the obstacles thrown up by the Lysenko affair itself.

30 Werskey, *The Visible College*, p. 300.

5 Scientific socialism and dialectical materialism

Dialectical materialism was the name given by the doctrinaires and political stalwarts of the Communist Party of the Soviet Union (CPSU) to official Soviet philosophy. These stalwarts did not come up with the term, which was originally the brainchild of Joseph Dietzgen,[1] and which was subsequently adopted by Georgi Plekhanov, the "father of Russian Marxism". But it was Party stalwarts who made it stick by awarding it "official" status. In this way dialectical materialism was a constituent part of what was, arguably, the major political innovation of the twentieth century, official "Soviet Marxism". The part played within Soviet Marxism by dialectical materialism has been variously described as that of a philosophy, that of an ideology or that of both. Buried within this issue is another: whether dialectical materialism was sufficiently well-formed to give adequate or appropriate intellectual support to the Soviet experiment. Unsurprisingly, this has been a much-debated question; whatever the right answer may be, the point remains that since CPSU officials (and party stalwarts elsewhere) were powerful enough to impose their definitions on a captive audience, dialectical materialism enjoyed a remarkable shelf-life during the mid-twentieth century, as indeed the concept and reality of scientific socialism did too, and for many of the same reasons. Indeed, it was dialectical materialism that gave scientific socialism its officially-sanctioned purchase and wherewithal.

Historical materialism and dialectical materialism are frequently confused. Neither term, for the record, was used by Marx, though "the materialist interpretation of history" (*die materialistische Auffassung der Geschichte*) was applied to Marx's method (and to that extent attributed to Marx) by Engels in a review of *A Contribution to the Critique of Political Economy* that appeared in *Das Volk*, a German-language journal published in London, in 1859. The expression "historical materialism" was first used by Engels – it was never used by Marx – not in *Anti-Dühring* (where it is unmentioned) but in his special introduction to the 1892 English-language version of *Socialism, Utopian and Scientific*.[2]

1 See Tony Burns, "Joseph Dietzgen and the History of Marxism", *Science and Society*, (2), 2002, *passim.*

2 See Zbigniew A. Jordan, *The Evolution of Dialectical Materialism*, London, St Martin's Press, 1967, p. 404, n. 67.

Dialectical materialism was by contrast a term known neither to Marx nor to Engels. The conflation of historical and dialectical materialism – perhaps as opposed to *die idealistische Geschichtsanschauung* (the idealist view of history), a phrase that is used in *The German Ideology* – was and is mistaken. Historical materialism's register is historical. It is a mode of historical and socio-political analysis. Dialectical materialism, on the other hand, has as its register philosophy and science. Unlike historical materialism, it throws nature and its laws and (following Engels) the laws of "thought" into the mix. It is these scientific and philosophical characteristics that make dialectical materialism relevant to – indeed, to all intents and purposes inseparable from – scientific socialism during the Soviet era. Indeed, scientific socialism as Engels, Kautsky and others had understood it, did not have long to wait after Engels's death in 1895 for its absorption within dialectical materialism, a term used by Plekhanov as a way of characterizing Engels's arguments in *Anti-Dühring* (and distinguishing them from those of what Plekhanov termed "metaphysical" materialism). Only later was dialectical materialism extended to cover what Marx had said. Plekhanov first used Dietzgen's term "dialectical materialism" in 1891 (in "Zur Hegels Sechzigsten Todestag", an article published in the SPD organ *Die Neue Zeit*) and used it again in the "Foreword" to the Russian edition of Engels's *Ludwig Feuerbach* in 1892. By the time Plekhanov fleshed out the meaning of the term (*In Defence of Materialism. The Development of the Monist View of History*, 1895) dialectical materialism had already been used by Lenin in "What the 'Friends of the People' Are" (1894) to describe Marx's philosophy. He was to use it again to give ballast to the arguments of *Materialism and Empirio-Criticism* in 1908.

The central conviction that characterizes and helps define dialectical materialism found its earliest expression, as we have seen, in Engels's *Anti-Dühring*: the conviction that the same laws apply in the same way to external nature, human affairs, and thought. Partly because of this conviction, dialectical materialism was during the Cold War frequently portrayed as a singular, continuous and uniform doctrine conforming to one determinate set of fundamental principles and methodological rules. It was portrayed in this way because it suited both sides in the scholarship of the Cold War to portray it in this way and accordingly to regard the growth of dialectical materialism as having been a smooth, continuous and linear process. Each side regarded dialectical materialism as a body of doctrine first formulated by Marx and Engels, and then, having been preserved by Plekhanov from what he and others called "opportunistic" distortion on the part of German Social Democrats, was finally "codified in its pristine purity by Lenin and Stalin" (These arch words are Z.A. Jordan's).[3]

Such a characterization is, however, wide of the mark and overdrawn in the extreme. Far from being an easily identifiable target (or bulwark), dialectical materialism was throughout its elaboration a shifting target against a shifting background. Its development was jagged and discontinuous rather than smooth,

3 See Jordan, *The Evolution of Dialectical Materialism*, p. xi.

regular and patterned. It changed its very meaning from defender to defender and, accordingly, from siege to siege too. Even though in this respect it resembled (unsurprisingly enough) the scientific socialism from which it descended and to which it extended a renewed lease of life, this resemblance should not be pushed too far. While, as the twentieth century unfolded, it became less and less possible, and less and less desirable, to separate dialectical materialism from scientific socialism, it always remained possible – some would say increasingly desirable – to separate historical materialism from both. While dialectical was held in the Soviet Union to encompass and absorb historical materialism, the latter also flourished independently in the West among "maverick" thinkers, Critical Theorists and Western Marxists prominent among them, to whom the idea of dialectical materialism was nothing short of an embarrassment.

As dialectical materialism and scientific socialism drew closer together, their defenders and avatars tended increasingly to exhibit at least one important feature in common. All regarded themselves as being (almost by definition) keepers of the flame. It was the character of the flame that was to be kept burning that changed over time; the recuperative task involved in keeping it alive, and stoking it up, was more constant. Dialectical materialism, that is to say, developed in a process akin to Hobsbawm and Ranger's "invention of tradition".[4] Engels as founding father took care to credit Marx with having "discovered" and then adhered to, the central precepts of scientific socialism. Engels's attribution, misleading as it was, can in part be explained as having been consonant with Engels's desire to portray himself as a "merely talented" "second fiddle" to Marx's "genius".[5] (The distinction between genius and talent as Engels draws it is perfectly defensible: A genius is one having consummate intellectual power. One who is talented has skill, aptitude, and adroitness.) Unexpectedly enough, however, this same displacement (without anything like the same degree of self-effacement) was to characterize Engels's successors too, as dialectical materialism colonized scientific socialism. At first, as we have seen, the leaders of the German SPD were inclined to take Engels at his word, refusing on principle to regard him as having been coeval as a theorist with Marx. This principled stance proved to be only a temporary glitch, however. Russian keepers of the flame were much more inclined to present Marx-and-Engels as a kind of composite figure, who could thus be regarded as doubly authoritative. Engels's views of the Marx–Engels relationship, in so far as these failed to live up to this Soviet presentation, no longer mattered; what mattered was the prospect of following in the footsteps of so illustrious a pair of founders, and of preserving their joint heritage against attacks the founders themselves could never have foreseen. All these efforts were thus in large measure recuperative and preservative. They were attempts to derive legitimacy (not least in their

4 E.J. Hobsbawm and Terence Ranger, eds, *The Invention of Tradition*, Cambridge, Cambridge University Press, 1984, pp. 1–14.

5 Engels to Becker, 15 Oct 1884; Engels to Mehring 14 July 1893; see Jordan, *The Evolution of Dialectical Materialism*, p. 8.

perpetrators' own eyes) from the exemplary character of these inaugurators and forebears.

One prominent, transitional figure who can be adduced in support of the brief disjuncture of scientific socialism and dialectical materialism is none other than the SPD luminary, Karl Kautsky. This may seem a surprising claim. The strongly "orthodox" Kautsky was, after all, a firm believer in what he understood scientific socialism to be: "the evolutionist, determinist and scientistic form of Marxism", as Kolakowski calls it.[6] Moreover, Kautsky, under the influence of Darwinism as interpreted by Engels and others, believed that human history is a continuation of natural history and can be explained with recourse to the same laws. Even if the basic single philosophical drawback of dialectical materialism is that it confused the pursuit or advance of (mainly scientific) knowledge and technique *in* the world with the attainment of truth *about* the world, this is an accusation that would fit Kautsky closely enough. Kautsky is more of a "hard case" than Western Marxism was to prove, since he espoused several of the precepts of dialectical materialism as well as of historical materialism; he simply did not know these as precepts of dialectical materialism. The term "dialectical materialism" cannot have been altogether unfamiliar to him. As editor of *Die Neue Zeit* Kautsky must have encountered it in the article "On the occasion of Hegel's sixtieth birthday" Plekhanov published in the journal in 1891, for one thing. But the term did not register with Kautsky as meaning anything other than the scientific socialism he already espoused. Kautsky is best regarded not as a full-fledged dialectical materialist, but as a liminal figure, a figure on the cusp of the transition to dialectical materialism. His example shows that it was possible for a short time after Engels's death to adhere to the precepts of scientific socialism without adhering to dialectical materialism, but only until the latter gained currency and became officially recognized and enforced. To give but one of many instances, Kautsky, polemicizing against Bernstein at the height of the "revisionist" controversy, referred, in 1900–01, to historical materialism as the "science" underlying the SPD's Erfurt Program, which science "proved" that "the victorious proletariat, by natural necessity, must strive to replace capitalist production with a new mode of production".[7]

Believing, as Kautsky could never have brought himself to believe, that Marx was both materialist and Hegelian, Engels, the first Marxologist in Terrell Carver's account of him,[8] invoked "dialectics" as a latent bond undergirding the

6 Leszek Kolakowski, *Main Currents of Marxism*, Oxford, Clarendon Press, 1978, vol. 2, p. 32; cf. p. 391.

7 Karl Kautsky, "Problematischer gegen wissenschaftlichen Sozialismus," *Die Neue Zeit*, 19, no. 2, 1900–01: pp. 355–64; cf. Karl Kautsky, *Ethics and the Materialist Interpretation of History*, tr. John B. Acton, Chicago, Kerr, 1907, p. 141; and Manfred Steger, *The Quest for Evolutionary Socialism. Eduard Bernstein and Social Democracy*, Cambridge, Cambridge University Press, 1997, p. 106. On Kautsky's adoption of Engels, see Dick Geary, "Karl Kautsky and 'Scientific Marxism' ", *Radical Science Journal*, 11, 1981: pp. 130–5.

8 See Terrell Carver, *Engels*, Oxford, Oxford University Press, 1981, p. 53; Paul Thomas, "Review" of Carver, *New Political Science*, no. 8, Spring 1982: p. 101.

manifest differences between Hegelianism and materialism. Engels frequently gave prominent expression to his belief that Marx, a materialist, remained at some fundamental level a Hegelian too. The reason at root why Kautsky should not be called a dialectical materialist, while Plekhanov should, is that Kautsky (who in this respect resembles a panoply of other thinkers outside the German SPD, for instance Benedetto Croce, Karl Löwith, Georges Gurvitch, Werner Sombart and Karl Vorländer) could not begin to credit Hegel with having influenced Marx in any significant sense in the first place. (Even Kautsky's one-time nemesis, Eduard Bernstein, was at one with him in wishing to sever Marx from Hegel once and for all.) The SPD leadership was, by and large, both puzzled and unimpressed by Engels's heartfelt convictions about the importance of Hegel. Even *Anti-Dühring* had posed a problem in this regard. When in 1876 it first began to appear by instalments in *Vorwärts*, some indignant readers of this journal are on record as having regarded it as being recondite and "entirely without interest". The 1877 Gotha Congress of the German SPD almost discontinued its publication, but Party notables instead decided to relegate *Anti-Dühring* to the status of a theoretical supplement to *Vorwärts*. Engels himself was taken by surprise by the fact that two further editions of what he had regarded as a thankless chore, *Anti-Dühring*, appeared before his death (they appeared in 1878 and 1894); he had had "no inkling that his polemical examination of Dühring's views would make history".[9] But, sad to say, make history it did.

The problem here was reinforced rather than resolved by Engels's bequest of the no less "Hegelian" materials that were eventually to be published in the Soviet Union as *Dialectics of Nature*. The SPD did not know what to do with these, at a time when even traces of Hegelianism were believed to be an electoral as well as an intellectual liability, and when the SPD leadership were, by and large, more receptive to the precepts of positivism (or, in some instances, of Kant) than to those of Hegelianism.[10] Engels's materials on natural science, inflected as these were with Hegelianism (as we shall see), were in the event simply left to languish in the SPD archives. It is not the least of the ironies surrounding the Soviet colonization of scientific socialism, and its transmutation into dialectical materialism, that with it the incorporation of Hegel, as Engels had understood him, was no longer a problem. Hegel was digestible at last. But it was Engels's Hegel – a Hegel of a very particular kind, as we shall see – who got incorporated; and whose Hegel we are talking about remains an important question. Marx's Hegel differed significantly from Engels's Hegel, much as Marx's Feuerbach and Darwin had differed from Engels's Feuerbach and Darwin.

The key to the whole process of *Verhegelung* that helped constitute dialectical materialism is the rather strained idea that once Hegel's "idealism" was

9 Jordan, *The Evolution of Dialectical Materialism*, p. 4.

10 See Hans Magnus Entzenberger, *Gespräche mit Marx und Engels*, Hamburg, Insel Verlag, 1973, pp. 671–2.

bracketed and set aside, "dialectics" as Engels understood these remained as a kind of substrate. "Dialectics" so understood were then said to provide a system of the most general laws of the universe. The formal principles of "dialectics" as Engels understood this term were the transformation of quantity into quality, the identity of opposites, and the negation of the negation. In outlining these, Engels entertained (and adhered to) the bizarre and exaggerated belief that these "three laws of dialectics" were of Hegelian as well as Marxian provenance. "Dialectics" in the lexicon of dialectical materialism came to centre upon Engels's conviction that "the natural, historical and intellectual world moves and transforms itself endlessly in a constant process of becoming and passing away".[11] Thus, Hegel could be credited by Plekhanov with "clearing the road for materialism",[12] and Engels could be lauded by Plekhanov and Lenin alike for having discovered that "Hegel's system was materialism turned upside down".[13] It was not enough, however, for Engels to have "associated the unobstructed development of all scientific knowledge with the application of the reconstructed dialectical method";[14] he had also to claim, no less misleadingly, that this, of course, had also been Marx's procedure all along.

Engels had advanced the bizarre claim in his 1865 letter to F.A. Lange (and elsewhere) that Hegel's philosophy is "only another expression of what modern science continued to discover at every step of its advancement". He was to adhere to this belief throughout his later, more detailed, investigations of "what modern science continued to discover" in what became known as *Dialectics of Nature*, as we shall see. It is a wayward, exaggerated claim, all the same. Engels twisted Hegel out of all recognition in making it, invoking or trying to invoke Hegel's authority as well as Marx's as buttresses for arguments that were in fact Engels's and Engels's alone. Hegelian dialectics had to do with the appearance of forms of consciousness. As such they have little to no empirical significance; it was to Engels, not to Hegel or Marx, that "dialectics prevails throughout nature, history, and thought".[15] It is surely time to let Hegel speak for himself. Section 81 of Hegel's *Encyclopaedia of the Philosophical Sciences* says,[16]

> By dialectics is meant the indwelling tendency outwards by which the one-sidedness and limitation of the predicates of understanding are seen in their

11 Friedrich Engels, *Anti-Dühring*, Moscow, Foreign Languages Publishing House, 1959, p. 37. On Engels's Hegelianism, see also Terrell Carver, *Friedrich Engels. His Life and Thought*, London, Macmillan, 1989, pp. 233–4.

12 Georgi Plekhanov, "For the Sixtieth Anniversary of Hegel's Death", *Selected Philosophical Works*, vol. I, Moscow, Foreign Languages Publishing House, 1974, p. 412. Plekhanov had come to regard Marxism as "Darwinism in its application to social science". See Gustav Wetter, *Dialectical Materialism*, tr. Peter Heath, London, Routledge and Kegan Paul, 1958, p. 107.

13 Lenin, "Philosophical Notebooks", *CW* 38, Moscow, Progress Publishers, 1960, pp. 234 ff.

14 Jordan, *The Evolution of Dialectical Materialism*, p. 83.

15 Friedrich Engels, *Dialectics of Nature*, New York, Progress Publishers, 1940, pp. 120–3.

16 William Wallace, tr., *The Logic of Hegel, translated from the Encyclopaedia of the Philosophical Sciences (1817), with Prolegomena*, Oxford, Clarendon Press, 1874, p. 126.

> true light, and shown to be the negation of them. For anything to be finite is just to suppress itself and put itself aside.

The context of dialectic, that is to say, entails the continuity of mind and matter in such a way that logic and ontology, far from being dualistic categories, are one and the same, and that any apparent dualism must be overcome.

It was Engels, and certainly not Hegel, who "associated the unobstructed development of all scientific knowledge with the application of the reconstructed dialectical method".[17] It was Engels, not Hegel, who first advanced the wholly fanciful claim that his three laws of dialectics were first formulated by Hegel, even if Plekhanov and Lenin had reasons of their own for not disagreeing. Plekhanov took no visible exception to Engels's account of Hegel, and accordingly adopted wholesale Engels's "dialectics", as did Lenin in his wake. Plekhanov, in Jordan's ominous words,

> was one of those scholars who believed … that there was complete identity of views between Marx and Engels on all philosophical matters. As far as the conception of materialism is concerned, this meant in fact the substitution of Engels's views for those of Marx.[18]

Worse still, this substitution was not just advanced; soon enough, it came to be enforced. Plekhanov did however regard Engels's underlying triad of thesis-antithesis-synthesis with suspicion, indicating (quite rightly) that, however "Hegelian" it may be, it is useless from the point of view of method because the term "negation" is one that admitted of too many different, irreconcilable meanings. Accordingly Plekhanov, whose philosophical formation was in advance of Engels's, accepted Engels's law of the negation of the negation, but only in a truncated form. He reduced it to the law of the interpenetration of opposites, which had been Engels's second law of dialectics and now became Plekhanov's first;[19] and because Lenin, for his part, followed Plekhanov's ordering, this at least was respected up until the publication of Stalin's *Dialectical and Historical Materialism* in 1938.

Such constancy was, however, the exception, not the rule. Lenin's successors, notably Stalin and Mao Tse-tung, were in their turn by no means without precedent when they duly continued to tinker around even with dialectical materialism's central precepts, thus, not so much modifying the doctrine as twisting it out of all recognition. All in all, it is a sorry sequence. Engels's third law of dialectics (the negation of the negation) was jettisoned by Stalin, and Engels's first law (the transformation of quantity into quality) was downgraded by Mao Tse-tung to the status of a special instance of Engels's second law (the

17 Jordan, *The Evolution of Dialectical Materialism*, p. 83.

18 Jordan, *The Evolution of Dialectical Materialism*, p. 185; cf. Kolakowski, *Main Currents*, vol. ii, pp. 339–40.

19 Jordan, *The Evolution of Dialectical Materialism*, 189–90.

interpenetration of opposites). These shifts could kindly be regarded as qualifications or refinements; they could equally easily be regarded as signs that dialectical materialism (or DiaMat, the acronymic form that was sometimes used) was beginning to collapse beneath its own weight – long before the political system it was said to uphold imploded at the institutional level in 1989. Either way, problems remain. To appropriate a phrase from Morris Watnick,[20] if the minds of true believers in the Soviet Union and elsewhere were indeed "beset by the logic of (their) own commitment", what exactly were these minds supposed to have been committed *to*? The answer to this question cannot have been clear on any given occasion even to the committed themselves. Even contemporary scholars with no axe to grind can come up with the answer in given cases only with the greatest difficulty. In Slavoj Žižek's aptly chosen words, dialectical materialism was not "a genuine philosophical system; it was an institution of power legitimation to be enacted ritualistically, and, as such, to be located in the context of the thick cobweb of power relations".[21] It was what Theodor Adorno once described as an "extorted reconciliation" between individual and society.[22]

Materialism and empirio-criticism

Kolakowski concedes that Lenin's long-unpublished 1914–15 "Hegel Notebooks"

> suggest an interpretation of Hegelianism that is less simplified than Engels's. The dialectic is not simply an assertion that "everything changes" but an attempt to interpret human knowledge as a perpetual interplay between subject and object, in which the absolute primacy of either loses its sharpness.[23]

Kolakowski's concession fails, however, to establish Raya Dunayevskaya's strained and rather fanciful thesis – given recent re-expression by Kevin Anderson – that Lenin's work in the *Notebooks* "places him closer to key Hegelian or 'Western' Marxists such as Georg Lukács and the members of the Frankfurt School than to orthodox Marxists, including official Soviet Marxist-Leninists" or that Lenin was "the first Hegelian Marxist of the twentieth century, who helped pave the way for later critical and dialectical theorists such as Gramsci, Lukács, Korsch, Marcuse, Lefebvre, (and) Bloch".[24] Lenin, after all, allowed and

20 See Morris Watnick, "Relativism and Class Consciousness", in Leo Labedz, ed., *Revisionism. Essays on the History of Marxist Ideas*, New York, Praeger, 1962, p. 152.

21 Slavoj Žižek, "Postface" to Georg Lukács, *A Defence of "History and Class Consciousness"*, tr. Esther Leslie, London, Verso, 2000, p. 155.

22 Žižek, "Postface", p. 156.

23 Kolakowski, *Main Currents of Marxism*, vol. 2, p. 464.

24 Kevin Anderson, *Lenin, Hegel and Western Marxism*, Urbana and Chicago, University of Illinois Press, 1995, pp. ix, 97.

actively encouraged the reprinting without changes of his 1908 *Materialism and Empirio-Criticism* in 1920, along with a new preface that says nothing about the "Hegel Notebooks", which remained unpublished and unpublicized. Thus even if the latter do mark a distinct philosophical advance over *Materialism and Empirio-Criticism*, this may not matter if Lenin publicly retreated from his (private, unpublished) advance, thereby setting an example of self-suppression to others who came later.[25]

We should here take into account what the republication of *Materialism and Empirio-Criticism* involved: here, Bertrand Wolfe's words are no exaggeration and deserve quotation at length.

> Lenin's book against Mach and the "Machists" created no stir when published. But after he came to power, and still more in the hands of his successors it … acquired considerable influence in the history of contemporary thought. Published in enormous editions, translated into many tongues, it has been studied and cited by zealous disciples all over the world. In Russia it (became) a basic text for the "training" of intellectuals and Party theoreticians. As Lenin used Engels, so Leninists used Lenin: as a sword to slay the lurking dragon of "fideism"; as a "quotational shock treatment and chain reaction" to link up and overwhelm all opposition, dissent or independent thought; as a thread to guide the faithful through the labyrinth of modern science and philosophy. It has been used as a reagent to test new doctrines in such diverse fields as relativity, atomic theory, psychoanalysis, genetics, cybernetics, and theoretical mathematics. Its exegesis of the philosophical insights of Engels and Marx stands today as a coarsening screen between official Russian Marxist thought and the more flexible, receptive, penetrating thinking of the founders of Marxism. On this exegesis by Lenin has been superimposed the exegesis of the exegesis by Stalin. Thus do commentaries upon commentaries upon texts which have become scriptures continue to grow into a body of official state philosophy.… (*Materialism and Empirio-Criticism*) though intended as a blow against anti-rationalism and religious obscurantism, has been fated to serve a quasi-religious fanaticism of its own: developing into a state philosophy or a state faith, the faith of a state relentless, irreconcilable and omnipotent in 'enforcing the answers'.

Paid positions for philosophers who accepted the principles of *Materialism and Empiriocriticism*, and, later, of dialectical materialism at large (or who said they accepted these) came into existence as the Soviet régime consolidated itself, much as we might expect. But, no less unsurprisingly, "between 1930 and 1955, philosophical discussions among (Soviet) Marxists were stifled, the publication

25 See Paul Thomas, "Review" of Kevin Anderson, *Lenin, Hegel and Western Marxism* in *Theory and Society*, 27, no. 1, February 1998, pp. 113–17. See also Kolakowski, *Main Currents*, ii, p. 242.

of books and articles became virtually non-existent and the teaching of philosophy was greatly reduced."[26]

Lenin, in Jordan's words, "not only accepted (Plekhanov's) amendments to Engels, but pushed them even further, to a point which makes it possible to speak of Engels's and Lenin's dialectical materialism(s) as two distinct doctrines".[27] Engels, even though he is on record as having believed that the proposition "nature proceeds in leaps" to be "as clear as noon-day", had also (somewhat incoherently) thought that dialectical transitions are always gradual; Plekhanov added the refinement that they could, to the contrary, involve dialectical "leaps" that were themselves inevitable, and Lenin followed suit, seeing, as Plekhanov had seen before him, that dialectical leaps could usefully include social revolutions. Lenin indeed went further still: he "extended and sharpened" the distinction Engels had made between two views of matter, spirit, and their relation, the materialist and the idealist, into a distinction of all philosophical systems, bar none, as having been fundamentally either materialist or idealist in character and in bearing, a division that was, like all Lenin's previous distinctions, zero-sum; "the slightest deviation from materialism harmed materialism and benefited idealism" directly[28] – such Manichaean polarization being, it goes without saying, the very distinction Marx as well as Engels had had in mind all along. Lenin for his part was simply making manifest, or claiming to make manifest, what had heretofore remained latent, and doing so for the sake of guarding the founders' legacy against scurrilous misrepresentations, proceeding this time not just from SPD purveyors of ideological distortion, but also from Russian Machists.

Lenin throughout these protestations was engaged in inserting into dialectical materialism a realist epistemology that both Engels and Plekhanov had done without. Lenin thus claimed they had inadvertently overlooked it. Engels and Plekhanov had certainly never adopted Lenin's purely epistemological definition of matter.[29] The copy theory of perception that Lenin trumpeted in *Materialism and Empirio-Criticism* involved what George Lichtheim identified as "a divergence from Engels's account, since materialism to Engels was not the same as epistemological realism". Lichtheim tellingly goes on to point out

> Engels's medley of metaphysical materialism and Hegelian dialectics was conserved by Lenin, but (Lenin's) own theory of cognition – which is all that really mattered to him – was not strictly speaking dependent on it. Matter as an absolute substance, or constitutive element of the universe, is

26 Bertrand D. Wolfe, *Three Who Made a Revolution*, New York, Dell, 1964, pp. 516–17; Eero Loone, "Dialectical Materialism", in William Outhwaite and T.B. Bottomore, eds, *Blackwell Dictionary of Social Thought*, Oxford, Blackwell, 1993, p. 156.

27 Jordan, *The Evolution of Dialectical Materialism*, p. 238.

28 Jordan, *The Evolution of Dialectical Materialism*, pp. 203, 192, 225.

29 Jordan, *The Evolution of Dialectical Materialism*, pp. 159, 210.

> not required for a doctrine which merely postulates that the mind is able to arrive at universally true conclusions about the world given to the senses.[30]

After all, one can accept epistemological realism without believing that the world is altogether material, and vice versa. Even though Lenin's epistemology is usually regarded as his specific contribution to the "philosophy" of dialectical materialism, on closer examination it becomes "an adventitious appendage of a deductive metaphysics rather than its epistemological foundation", just as Z.A. Jordan says.[31] (As an aside, the present-day philosopher Donald Davidson argues that accurate mental representations of reality are neither possible nor desirable and should be discarded from philosophy altogether; Lenin by contrast, had no doubts either about their possibility or about their desirability.)

Z.A. Jordan estimates that "while the socio-cosmic character of Engels's generalizations of dialectics cannot be questioned" – Engels aimed "to establish the revolution, as it were, at the heart of the cosmos" – "his interest in natural science exercised a certain moderating influence"[32] on it, a "moderating influence" that was notably lacking in Plekhanov and Lenin, who knew much less than Engels about natural science. (Lenin was quite simply not interested in the general assumptions governing natural science, which had been one of Engels's abiding concerns, unless these also by extension had relevance to immediate political problems.)[33] On the other hand, while Engels had believed that matter and motion were unthinkable apart from one another, Lenin had enough savvy to notice that he had not conclusively refuted the idea that motion might be imparted to matter by some force external to matter.[34] Lenin proceeded to use the law of the unity and struggle of opposites to scotch this unwanted possibility once and for all, in the belief that it is the inherent contradictoriness of all things and phenomena that accounts for the self-movement of matter; and that it is from contradiction so understood that matter constantly produces and reproduces its internal motive force.

This clumsy and hasty supposition is, not to put too fine a point on it, based on a category mistake. Motion is a physical process; contradiction is a logical relation. Accordingly the latter cannot sensibly be said to cause the former, and the former cannot in any way be said to be explained by the latter. Propositions, no matter what they propose, cannot make or fail to make things happen. Even if we discount this point Lenin would be no better off, for if contradiction is indeed objectively present in things and phenomena in such a way as to impart motion to them, then a basic premise of materialism, that nothing but matter exists, is subverted and denied. And even if, again, we remove contradiction as a

30 George Lichtheim, *From Marx to Hegel*, New York, Praeger, 1974, pp. 74, esp. 70–1.

31 Jordan, *The Evolution of Dialectical Materialism*, p.xiii.

32 Jordan, *The Evolution of Dialectical Materialism*, p. 234.

33 Jordan, *The Evolution of Dialectical Materialism*, pp. 224, 236, 238.

34 Susan Thornton Frey, "Friedrich Engels's 'Dialectics of Nature' and Nineteenth-Century Science", Ph.D. dissertation, University of Washington, Seattle, 1978, pp. 300–3.

demiurge and say that matter itself is (somehow) endowed with the power of spontaneous, purposeful motion, we have merely shifted the co-ordinates of our problem without in any way solving it; matter in motion has now become a cause that is also a cause of itself, a category that would be very hard to accept since, as Jordan says,[35] it would undermine the methodology of natural science and the central assumption of metaphysical materialism at one and the same time.

Dialectics of nature

But if Lenin's philosophical formation can be shown in these and other ways to have been less deep than Plekhanov's, and if his understanding of natural science does not even reach Engels's level, what are we to make of Stalin? It was Stalin, after all, who made dialectical materialism "a socially influential policy". For the first time dialectical materialism became with Stalin an agenda rather than an "outlook" or desideratum, an agenda that was to have real, practical effects. To add that Stalin was, into the bargain, the first theorist of dialectical materialism who could have had recourse to *Engels's Dialectics of Nature* would be to raise an interesting paradox, for there is no evidence that doing so did him or anybody else much good. Lenin and Plekhanov had inherited dialectical materialism and scientific socialism, fairly and squarely, straight from *Anti-Dühring* and Engels's posthumously-published *Ludwig Feuerbach* – which were much more useful sources than *Dialectics of Nature* ever proved to be. It has been noticed that one would look in vain in the pages of the latter for the faintest hint of advice about the pressing task of socialist reconstruction, but less often noticed that characterizations of anything approaching dialectical materialism are absent from its pages too. *Dialectics of Nature*, despite its title, a title awarded it by Soviet editors, is not the locus classicus of dialectical materialism that some have supposed it to be.

It could nevertheless be argued that *Dialectics of Nature* did have certain usefulness for Stalin. It was in large part a compendium (or hodge-podge) of what were by the time of its publication 50-year-old facts and data about the natural sciences. But it was no mere compendium or hodge-podge. *Dialectics of Nature* also registers Engels's alarm at the sheer speed and complexity of scientific advance by the 1870s, his disquietude at what seemed to be the increasingly autonomous, increasingly esoteric character of the various branches of natural science. These developments evidently raised the stakes of Engels's self-imposed endeavour, which was that of formulating an "outlook" that would dovetail and synthesize the natural and the social. This task had lost none of its urgency since 1876, when Engels interrupted and in effect abandoned his work on it and, at Marx's behest, turned his attention to his "sour apple that once bitten into, had to be completely devoured", *Anti-Dühring*.[36]

35 Jordan, *The Evolution of Dialectical Materialism*, pp. 245–7, 247–8.

36 Friedrich Engels, *Anti-Dühring*, New York, International Publishers, 1972, p. 9.

That *Dialectics of Nature* failed to "devour" Engels in the same way – it remained unfinished at his death – could, in a sense, be turned to account by Stalin in the usual way: the unfinished task could now be completed and brought to fruition, and adapted to changed historical circumstances at the same time, in keeping (as always) with the forever-reconstructed "original intent" of dialectical materialism's illustrious founders. M.B. Mitin, a now-forgotten personage who was at one time Stalin's court philosopher, suggested against all the evidence that Stalin's *Dialectical and Historical Materialism* provided the comprehensive and systematic account of materialist dialectics that the times called for, a comprehensive and systematic account that Marx had planned but was unable to provide, and which Engels, Plekhanov and Lenin themselves had similarly failed to bring to completion. Mitin's claim, whatever its accuracy, was in one sense true to form. To adapt an aperçu of Jordan's, if Lenin had seen Marx through the eyes of Engels, Stalin went one better by regarding Marx, Engels and Plekhanov through the eyes of Lenin.

Stalin's pronunciamento on the first page of *Dialectical and Historical Materialism* that dialectical materialism is now the world-outlook of the Marxist-Leninist Party was true to form in another, corresponding sense. It indicated that a cosmological and metaphysical enquiry could now be used (directly and in principle) to justify and legitimate the reconstruction of Russian society along "dialectical" lines. In Jordan's arch but by no means inaccurate paraphrase "a logical relation of inference (could now) be established between dialectical and historical materialism (on the one hand) and between historical materialism and the policies of the Party"[37] on the other. While these claims would, arguably, not have seemed practical to Plekhanov and Lenin, they would have come as no surprise to them either. Nevertheless, dialectical materialism as a programmatic plan of action is at a rather considerable distance from anything Engels could possibly have contemplated. Engels may have been convinced that his metaphysical and political beliefs formed a coherent *Weltanschauung*, but he seems not to have regarded this "outlook" as a, or the, foundation for practical activity of any stripe in the here and now.[38] To this extent Engels bears no direct responsibility for the excesses that were to characterize Stalinism. But Engels's purposes, to say nothing of Marx's, faded to black and receded into the background as the twentieth-century sequence got under way. For Plekhanov, cosmology had come under the influence of political and social conditions; "in Lenin's interpretation, cosmology gives way to a picture of the universe described in socio-cosmic terms, and in Stalin's main contribution to the subject dialectical materialism is 'political cosmology' pure and simple".[39] As George Lichtheim caustically put it, the progress of socialist reconstruction had finally become cognate with that of "the stars in their courses".[40] All these proponents

37 Jordan, *The Evolution of Dialectical Materialism*, p. 361.
38 Jordan, *The Evolution of Dialectical Materialism*, pp. 392–3.
39 Jordan, *The Evolution of Dialectical Materialism*, pp. 393–4.
40 George Lichtheim, *Marxism. An Historical and Critical Study*, New York, Praeger, 1965, p. 246.

of DiaMat of course had the authority of Engels to fall back on, in fact to parade, as they advanced such far-fetched claims; yet Engels, in being invoked in their support, was on any reckoning also being mined for all he was worth – not to say stretched at the seams.

By the time it fell to Stalin to bring the arguments of Engels's *Dialectics of Nature* into line with the tenets of dialectical materialism, these latter themselves had long been considered orthodox and authoritative. Stalin adds little to them. His *Dialectical and Historical Materialism* of 1938 (which first saw the light of day, appropriately enough, as the fourth chapter of the *History of the CPSU*) relies heavily on a few phrases drawn from *Dialectics of Nature*, all of which overlap with or repeat ideas better expressed, and expressed at greater length, in *Anti-Dühring*. Stalin, nevertheless, used these warmed-over concepts to advance claims that Engels could and would never have proffered: that dialectical materialism is the philosophy of Marxism–Leninism; that it is based on a thorough understanding of natural science and of what natural science comports; and that all "thought" may thus be said to fall within one of two overarching but mutually antagonistic world-views. These were materialism, both historical and dialectical, on the one hand, and bourgeois idealism and its various offshoots, on the other. Again following Lenin, *Dialectical and Historical Materialism* views historical as a linear extension of dialectical materialism.

Stalin's arguments, insubstantial and unoriginal though they may be, serve, despite themselves, to indicate that Engels's *Dialectics of Nature* provides little theoretical heft or ballast to the theory (or the reality) of dialectical materialism. The main tenets of dialectical materialism had, after all, been formulated and made authoritative without any recourse to *Dialectics of Nature* at all. Plekhanov and Lenin had of course taken pains to construct their arguments around Engels's extant writings, but these did not at the time include *Dialectics of Nature*, which was first published in 1927. The priority that its publication, under the aegis of the Marx-Engels Institute, was officially accorded had more to do with an evident desire for comprehensiveness than with anything else: the new-found availability of *Dialectics of Nature* could now be regarded as a kind of bibliographical or canonical coup de grâce that would round out dialectical materialism once and for all, and establish the legitimacy and comprehensiveness of its lineage beyond peradventure of a doubt. Engels, when he put together *Dialectics of Nature*, could not have intended to produce ratification of a Soviet orthodoxy he neither envisioned nor authorized.[41] The only "orthodoxy" Engels knew, at a time when the Soviet Union was not so much as a blip on the radar screen, was the troubled, if remarkably open-ended, "orthodoxy" of the German SPD, and his knowledge even of this was not at first hand. But Engels's intentions and horizons were by 1927 quite simply beside the point: dialectical materialism was already established as an orthodoxy and an agenda, and the point now was to mine a previously unpublished "source" for whatever presentiments of the authoritativeness of Soviet Marxism it might reveal.

41 Frey, "Friedrich Engels's 'Dialectics of Nature' and Nineteenth-Century Science", pp. 470, 594.

Dialectics of Nature is not a major textual source of dialectical materialism but an anomaly – not a lone anomaly but the first in a series of Marxist "classics" whose arguments, once these had become available for inspection and quotation, had perforce to be assimilated to and integrated within an already-established theoretical corpus, the authoritative nature of which was pre-given and not in doubt. As such, *Dialectics of Nature* was more readily assimilable to this pre-existing orthodoxy than some of its successors – notably Marx's *Economic and Philosophic Manuscripts* and *Grundrisse* – were to prove. (By the time these latter found their way into print – official eagerness to rush these "classics" into publication, comprehensiveness or no comprehensiveness, had its evident limits – they could only appear as heterodox, both to Soviet authorities and to some Western interpreters of the Soviet canon too).[42] One is driven to suspect that while heterodoxy was not at issue in the instance of *The German Ideology* (first published in 1932)[43] which, like *Dialectics of Nature*, was titled by Soviet editors and preordained as having orthodox, canonical status, there remain mysteries about the text even (or especially) as it stands today. Why, for example, did Engels's label "Feuerbach" for the first section of *The German Ideology* survive the work of Soviet editors when its content has precious little to do with Feuerbach at all?

The point remains with respect to Engels that his arguments in *Dialectics of Nature* were themselves assimilable to and digestible by the Soviet corpus only up to a point, only in as much as they repeated arguments Engels had already made in other writings dealing with natural science. But Engels, when he assembled the various fragments, snippets, notes and chapters that later editors made known as *Dialectics of Nature*, had had his own rows to hoe, few of which covered ground he had already trodden and traversed elsewhere. There is a paradox here. Not only is almost anything said by Marx irrelevant to what dialectical materialism turned into, but so too is anything said by Engels in the pages of *Dialectics of Nature* that is not a mere repetition of what Engels had already said elsewhere – and there was a great deal of original material in the pages of *Dialectics of Nature*. (Original materials constitute by far the greater part of its text). However, the damage had already been done. Engels, whatever his own intentions may have been, had already "extended the laws found in history to nature" and conferred upon the composite an ontological and dialectical uniformity, thereby preparing the ground "for the claim of the deducibility of historical from dialectical materialism", and leaving "to his philosophical heirs an inheritance fraught with intellectually disastrous consequences".[44]

All the same, *Dialectics of Nature* is itself fully to be understood in its own terms and not just in those of the Soviet dialectical materialism that rushed it

42 See E.J. Hobsbawm, "The Fortunes of Marx's and Engels's Writings", in E.J. Hobsbawm, ed., *The History of Marxism*, vol. 1 *Marxism in Marx's Day*, Bloomington, Indiana University Press, 1982, p. 334.

43 See Paul Thomas, "Critical Reception: Marx Then and Now", in Terrell Carver, ed., *The Cambridge Companion to Marx*, Cambridge, Cambridge University Press, 1991, pp. 32–3.

44 Jordan, *The Evolution of Dialectical Materialism*, pp. 333–4.

into print. It is best understood, that is to say, as one of several late nineteenth-century attempts to reconcile natural science with philosophical inquiry, attempts which were, for reasons that cannot detain us here, more common in Germany than anywhere else. *Dialectics of Nature* is also understandable more specifically as Engels's attempt to mediate between what he understood to be the excesses of speculative metaphysics and the dangers posed by "pure empiricism". In setting about the task of rising to these challenges, Engels sought to reject the kind of philosophy that relied on a priori principles, Platonic ideas or for that matter on dogmatic definitions of "matter" and hence of "materialism".[45] At the same time Engels, unlike his contemporaries Mach and Ostwald, rejected the idea of an *hypothesenfreie Wissenschaft*; he thought that he had found, or could in principle locate, a via media in between the extremes of speculative philosophy, on the one hand, and of sheer empiricism on the other, and that this common ground or substrate could (with difficulty) be uncovered in the practical assumptions that undergirded the research methods of working, nineteenth-century scientists. These assumptions, Engels proposed to show, would, once they were brought to light and adequately arranged, help make natural science "part of a common language, history and culture"[46] instead of setting scientists off from these in a seemingly autonomous, esoteric, or even incomprehensible world of their own making.

What also characterized Engels's attempted assimilation of philosophy and natural science, and set it apart from broadly similar attempts on the part of Ernst Mach, Wilhelm Ostwald, Hermann von Helmholtz, Ludwig Boltmann and others, was Engels's heartfelt conviction – which some would say sits ill with his stress on scientists' everyday, practical beliefs and assumptions – that Hegel could be made useful, indeed indispensable, to an understanding of natural science. Engels's *Dialectics of Nature*, true to form, often uses Hegelian language to integrate science and philosophy, with very mixed results.[47] Engels had busied himself even prior to *Dialectics of Nature* – even (for that matter) prior to Darwin's *Origin of Species* – with translating contemporary science into Hegelian-philosophical language, as we have seen. ("The key areas of study" that would, Engels believed, give "a proper scientific footing" to the study of society and history were "human physiology, comparative anatomy and molecular chemistry").[48] When, in *Anti-Dühring*, he castigated Eugen Dühring's "lame attempt" to make Hegelian categories usable "in the philosophy of reality", he was not objecting in principle to the idea of doing so, but to the inadequacy of Dühring's attempt at bringing it off.[49]

Engels's Hegel in *Dialectics of Nature*, as elsewhere in Engels's writings, is a Hegel understood in a particular way, as the last in a long list of philosophers

45 See Frederick Gregory, "Science versus Dialectical Materialism. A Clash of Ideologies in Nineteenth-Century German Radicalism", *Isis*, 68, no. 242, 1977: pp. 206–23.

46 Frey, "Friedrich Engels's 'Dialectics of Nature' and Nineteenth-Century Science", 9, p. 350.

47 Frey, "Friedrich Engels's 'Dialectics of Nature' and Nineteenth-Century Science", pp. 21–2.

48 See Carver, *Friedrich Engels*, p. 234.

49 Jordan, *The Evolution of Dialectical Materialism*, p. 437.

stretching from Heraclitus through Spinoza who had (in Engels's view correctly) identified physical reality with motion, interaction and change. This understanding of Hegel does not in any obvious sense clarify Engels's investigations of the various (post-Hegelian) "standpoints", "outlooks" or working methods he attributes to nineteenth-century scientists. Just how the practical underpinnings of nineteenth-century scientific research bear out a variety of pre-nineteenth-century philosophers' reflections on variability and mutability is a question that is never very clearly answered in *Dialectics of Nature*. One could go further: to a considerable extent Engels deliberately refrains in its pages from advancing clear explanations, not because he was necessarily out of his depth but also because most of his formulations there were not intended to be cut and dried in the first place. They were meant rather to be "general, tentative and hypothetical", just as Susan Thornton Frey says. There is no air of definitiveness about them, in other words, because Engels had had no desire that they be (regarded as) definitive. He was from all appearances much more interested in raising questions than in settling them out of court. Engels's "dialectics" this time around were to a remarkable extent open-ended, and were designed not to provide inflexible, eternal laws but rather to open up avenues for further research and enquiry. Engels's arguments in *Dialectics of Nature*, that is to say, are a different kind of argument from the kind that was propounded by twentieth-century avatars of Soviet dialectical materialism. However much filiation with and descent from Engels they may have claimed, Soviet stalwarts' stock-in-trade was a kind of dogmatic certainty in which Engels himself seems for once not to have shared.

The paradoxes here run deep. When it came to nineteenth-century science itself, Engels, as we have seen, found himself "distressed as well as impressed by the progress and the authority of the natural sciences" of his own day.[50] *Dialectics of Nature* is chock-a-block with examples of Engels's evident alarm, as well as his delight, at these developments. The danger posed by post-Hegelian scientific research consisted in its specialized character, its claims to autonomy, and its sheer complexity, all of which offended against Engels's overarching desire to unify and synthesize diverse fields of research under the general heading of "dialectics". The point remains that for Engels this was a desire – or, if you will, a pious wish; it was not presented as a claim that the hoped-for synthesis had already been attained or even approached.[51] This in itself separates Engels decisively from those who were later to turn his arguments to more dogmatic, and more programmatic account, and these prominently include Stalin.

Herbert Marcuse's *Soviet Marxism* nevertheless quite rightly identifies "the emphasis on the dialectic of nature", as originally formulated by Engels, as "a distinguishing feature of Soviet Marxism". The Soviet "hypostatization of dialectic into a universal scientific world-outlook entails the division of Marxism

50 Frey, "Friedrich Engels's 'Dialectics of Nature' and Nineteenth-Century Science", p. 3. See also Sidney Hook, *Reason, Social Myths and Democracy*, New York, John Day, 1940, p. 221.

51 Frey, "Friedrich Engels's 'Dialectics of Nature' and Nineteenth-Century Science", pp. 25, 55–6.

into dialectical and historical materialism, the latter being the 'extension' and 'application' of the former into 'the study of society and its history' ". In Soviet Marxism, that is to say, "historical materialism becomes one particular branch of the general scientific and philosophical system of Marxism, which, codified into an ideology and interpreted by the officials of the Party, justifies policy and practice". Soviet developments "thereby obtain the dignity of the objective natural laws by which they are allegedly governed and which, if correctly understood and taken into consciousness, will eventually right all wrongs and lead to final victory".[52] The dialectic is "petrified into a universal system in which the historical process appears as a 'natural' process in which objective laws over and above individuals govern not only the capitalist but also the socialist society"; "the subjective factor no longer appears as an integral element and stage of the objective dialectic, but rather as the mere vessel, recipient or executor" of objective laws, laws which admit of being interpreted and executed by party officials even though "they too are subject" to them.[53]

Marcuse, to his credit, is under no illusion about how distant such an outcome was from Marx's original initiatives. "The Soviet Marxist interpretation of the relationship between the subjective and the objective factor transforms the dialectical process into a mechanistic one."[54] The root assumption here is that what Engels in *Anti-Dühring* termed "the natural, historical and intellectual" worlds all move according to the same, overarching logic.[55] This is on any reckoning, a large assumption, the roots of which, Engels claimed, are Hegelian. "The Hegelian system meant for Engels the end of speculation and the beginning of scientific philosophy."[56] Whatever Hegel may have meant to Marx – this being a question on which Engels had his own opinion – Hegel to Engels had presented a metaphysics concerned with "the innermost characteristics of nature" as well as with "the human, moral, and sociological".[57] Engels, as we have seen, thought that his three laws of dialectics had first been formulated by Hegel, and that he himself in codifying them was simply making them more explicit. Whatever the rights and wrongs of this claim may be, Engels considered that his (or Hegel's) "laws" applied as much to the development of "thought" as they did to that of nature and human society. To make this claim is to transform "dialectics" – which with Hegel, as we have seen, might be said to describe intellectual accounts of the world, nothing more, nothing less – into a general theory of the world on the basis of natural science: which is to say, if we are not to mince words, that Engels at this point in his exposition has left Hegel as well as Marx high and dry.

This leads by extension into a central, concluding point: that dialectical

52 Herbert Marcuse, *Soviet Marxism*, New York, Random House, 1961, pp. 128–9, 130.
53 Marcuse, *Soviet Marxism*, pp. 129–30, p. 135.
54 Marcuse, *Soviet Marxism*, p. 135.
55 Engels, *Anti-Dühring*, Moscow, 1959, p. 37.
56 Jordan, *The Evolution of Dialectical Materialism*, p. 110.
57 Jordan, *The Evolution of Dialectical Materialism*, pp. 153–4.

materialism's betrayal was at once a betrayal of Marx and a betrayal of philosophy. The disservice its deployment did to Marx, that is to say, was, finally, a disservice to philosophy at large, and not just to "Marxism" (on other understandings of what this term comported). Engels and his followers turned Marxism at the official level into the kind of universal *Weltanschauung* or world-view that Marx never provided and never set out to provide. Marxism–Leninism, in particular, constructed around Marx's writings, to the extent that these were made available and accessible (and they were not hurried into print and disseminated globally, as Engels's – and Lenin's and Stalin's – were) something that has no place anywhere in Marx's writings. Dialectical materialism, as it "developed", claimed to provide a key to open every door, a grand theory concerned with the ultimate "laws" and constituents of the known universe. Marx himself, to reiterate, had maintained a discreet silence on such cosmic questions. Science and cosmology were domains distantly removed from the "critique of political economy" (the subtitle of *Capital*) that was Marx's lifework.

But it was in a sense precisely because Marx had maintained discretion on broader, not to say cosmic, questions that his self-appointed epigoni – to whom such silence evidently felt ominous and unnerving – felt the need to fill in (nonexistent) blanks and construct in Marx's name as well as Engels's what was supposed to be a coherent, comprehensive system of materialist metaphysics, that of Soviet Marxism. Yet Marx's reticence denoted not a failure of critical or scholarly nerve, but a well-judged reluctance to extend his arguments into areas where they could have no meaningful application, as I hope to have shown.

Even though Engels's interpretations of and extrapolations from Marx's writings are insignificant respects at variance with what Marx had bequeathed him (and us), as I also hope to have shown, Engels took care (as we have seen) to advance them in Marx's name. This (mis)attribution immeasurably helped scientific socialism in its Diamat guise to set the tone for more than a generation of "official" Soviet Marxists. While dialectical materialism did not pass unquestioned in the West, particularly among Western Marxists and critical theorists, it ruled the roost and attained canonical status in the Soviet Union, its satellites and China (where there were, not so very long ago, Chairs in the Dialectics of Nature in various Universities).

There was throughout the elaboration (I shrink from the term "development") of dialectical materialism an inbuilt flaw that could be regarded as fatal. If nature is conceived along the lines of a metaphysical materialism it does not for this reason lend itself to dialectical method, and if, conversely, "the dialectic" (a category which Hegel had confined within ways of thinking about the world, and which had had no real purchase in Marx) is read back into nature, there is no real place or need for materialism at all. The misapplication of something called "the dialectic" into natural processes then either endows the structure of reality with a purposive, teleological striving (which, as Marx had recognized and Engels had not, would fly in the face of Darwin if not of "Darwinism" (see Chapter 3, above)); or, it stretches the concept of dialectical change to the point

of tautology: anything that happens is interpreted as a "development" involving qualitative as well as quantitative change.[58] Lichtheim described the Soviet monster that was dialectical materialism as "an intellectual disaster", and it is not hard to see why. Dialectical materialism was a kind of politically-charged quodlibet for the philosophically tone-deaf.

58 See Lichtheim, *Marxism. An Historical and Critical Study*, pp. 254, esp. 247–8.

6 Althusser and the enchantment of science

> Nothing is to be gained by *being* a Marxist; it's worth everything to *become* one.
> (Rainer Werner Fassbinder)

The concept of scientific socialism, tarnished as this was by its association with dialectical materialism, had by the 1960s become thoroughly discredited. It might even have died a natural death but for the artificial life-support systems extended by both sides (for different reasons) during the Cold War – by adversaries because it seemed to offer an easy target, and by party stalwarts of an obdurate persuasion in the eyes and careers of whom the doctrine had, after all, stood the test of time. This latter group prominently included the staunchly orthodox leadership of the French Communist Party (PCF).

All the more surprising, then, that the 1960s witnessed a serious attempt at the rehabilitation of the concept of scientific socialism, one that proceeded from inside this same Party. Perry Anderson claims that

> it was the appearance of the work of Louis Althusser, from 1960 to 1965, which signalled a decisive change in the level of intellectual debate within the PCF. For the first time, a major theoretical system was articulated within the institutional framework of French Communism,

henceforward, "the torsion between theory and party" took on a new, original form.[1] Althusserian Marxism as it emerged enjoyed no official encouragement or sanction, to be sure. The PCF hierarchy saw no need for rehabilitation and was in any case preoccupied with other concerns – with the task of accommodating Marx's *Economic and Philosophic Manuscripts* of 1844, with that of curbing the overt reformism of Roger Garaudy and others, and with the eclecticism of sympathetic but troublesome intellectuals like Jean-Paul Sartre. Added to these concerns, latterly, was the problem of dealing with the Party's loss of face owing to its quiescence during the upheaval of May 1968, when, in

1 Perry Anderson, *Considerations on Western Marxism*, London, Verso/NLB, 1976, p. 38.

Althusser's own (subsequent) words, "the Party was literally outflanked by the students". Whether or not what then eventuated was indeed "a revolutionary defeat the like of which had not been seen since the (Paris) Commune (of 1871)", as Althusser came (later) to claim,[2] we can safely say that in May 1968 a "left-wing alternative" to "obsolete Communism"[3] first arose among the student estate. In this climate, the Party leadership regarded Althusserian Marxism not as a theoretical catalyst, but as one more unwanted intellectual irritant.

Althusserian Marxism in other words appeared to a rather defensive Party leadership as a product not of the Party in any direct sense, nor yet of the workers' movement at large, but of the academy. This assessment was not altogether inaccurate. Althusser himself, looking back in his memoirs, *The Future Lasts Forever*, admitted that "all those … who criticized me for being a pure philosopher, looking down with disdain from my theoretical ivory tower on the practical realities of politics, were not entirely wide of the mark".[4] Althusserian Marxism was in its origin the production of a small *cercle d'Ulm*, a group that formed around Althusser at the Ecole Normale Supérieure on the rue d'Ulm in Paris. It emerged and flourished at first, that is to say, in the interstices of a tessellated French system of higher education. Althusserian Marxism was, as Perry Anderson has argued, a characteristic example in this and other respects of what was coming to be known as Western Marxism, which, wherever it arose, found little support among Party functionaries or the ranks of organized labour, and rather more among intellectuals.

The fact remains that Althusser was quick to nail his colours to the mast, identifying himself as a member of the PCF. Althusser in this respect was unusual among Western Marxists, who generally regarded their *parteilos* status almost as a badge of honour. Some of these other Western Marxists joined in a chorus of denunciation of Althusser, proceeding mostly from outside France.[5] It seemed to many of Althusser's critics that any defence of any aspect of orthodoxy that emanated from within the ranks of the "Stalinist" PCF could not but be tainted by its origins, and could only amount to a warming-over of stale Party dogma – this being an assessment that the PCF leadership, however irritated they may have been, certainly did not share.[6] On Althusser's own rather

2 Louis Althusser, *The Future Lasts Forever*, tr. Richard Veasy, New York, Norton/New Press, 1993, pp. 231, 229.

3 I am pilfering the title of Daniel and Gabriel Cohn-Bendit, *Obsolete Communism. The Left-Wing Alternative*, tr. Arnold Pomerans, Harmondsworth, Penguin Books, 1969.

4 Althusser, *The Future*, p. 170.

5 The best known among these – space forbids my listing all the others – is the least typical of them, an autovindication of the historian's craft *vis-à-vis* Althusser's attacks on "empiricism": E.P. Thompson's *The Poverty of Theory and Other Essays*, New York, Monthly Review Press, 1978, *passim*. For a spirited fraternal riposte, see Perry Anderson, *Arguments Within English Marxism*, London, Verso/NLB, 1980, *passim.* See also Ted Benton, *The Rise and Fall of Structural Marxism. Althusser and his Influence*, London, Macmillan, 1984, pp. 201–14.

6 Martin Jay, *Marxism and Totality. The Adventures of a Concept from Lukács to Habermas*, Berkeley, University of California Press, 1984, p. 394. Jay's chapter on Althusser (pp. 385–422) may be recommended to the reader as one of the best critical treatments of Althusser in English.

self-aggrandizing account, he was engaged in a cat-and-mouse game with the Party leadership, with "all the ideologues of the Party … who made no secret of their disapproval and who supported me only because they could not have me expelled (given my notoriety)." While he quite deliberately set about cultivating this "notoriety" – he was still doing so in his memoirs, the apparent candour of which is not disarming – there was in the 1960s a delicate balance to be maintained: "the leadership was quite right to suspect me of wanting to inflect the Party line, from within, in a Maoist direction"; "the Party leaders" in other words, "clearly understood my strategy".[7] All the same, Althusser "took care never to exceed the limits of (the PCF's) tolerance"; again in his own words,

> I … fulfilled my desire to take my own initiatives and to oppose fiercely the Party leadership and its apparatus, but I did so from within the Party itself, under its protection, as it were. In fact, I never took up a position from which I risked being expelled.[8]

notably during the events of May 1968, when the silence from the rue d'Ulm did not disrupt the weightier silence that emanated, leadenly, from PCF headquarters.

There was a price to be paid for the Party leadership's grudging tolerance, and Althusser was more than prepared to pay it – despite or because of the fact that

> no *form of political intervention was possible within the Party other than a purely theoretical one*; it was even necessary to take the existing accepted theory and direct it against the Party's use of it. And since the accepted theory no longer had anything to do with Marx, being based on very dangerous absurdities derived from the Soviet, or rather Stalinist, interpretation of dialectical materialism, the only possible course of action was to go back to Marx, to a body of political thought which was fundamentally unchallenged because it was sacred, and show that Stalinist dialectical materialism, with all its theoretical, philosophical, ideological and political consequences, was a total aberration.[9]

Again,

> by basing my argument on Marx, who was after all the founding father of the Communist Party and their official source of inspiration, I acquired a peculiar position of strength. This made me difficult to attack within the Party when I challenged their official interpretation of Marx which they

7 Althusser, *The Future*, pp. 223, 197.
8 Althusser, *The Future*, pp. 199, 204.
9 Althusser, *The Future*, p. 196.

> used to justify their decisions, in other words what was effectively the Party line.[10]

Paradoxes abound. To the non-orthodox Althusser appeared distant and orthodox; to the orthodox, who were by contrast closer to hand, he appeared distinctly heterodox – not least because he brought to bear his *métier* and astuteness as a philosopher to the task of re-absolutizing science during a period of time that in other respects appeared to be moving in quite another direction. If we ask how and why Althusser set himself the task of defending what he took to be the science of Marxism, however, we can see that his forays were in fact neither as eccentric nor wayward, nor yet as orthodox, as others rather too hastily made them appear. Douglas Johnson's "Introduction" to Althusser's memoirs holds that

> there was an intellectual climate in France into which Althusser's work could fit. Although usually isolated as an individual, the moment was right for him to appear in the company of other French thinkers. The success of Althusser was not a unique phenomenon. Just as the anthropologist (Claude) Lévi-Strauss claimed to perceive a universal mental structure existing behind a diversity of empirical facts, or as (Jacques) Lacan believed that he could understand the human psyche in general, so Althusser believed that society was a unity and a totality even if it were the unity and totality of complexity itself. Lévi-Strauss argued that he could relate the customs of particular primitive peoples to a greater structure, Lacan sought to link the therapy of individual patients to a greater human subject, and Althusser believed that a dominant structure existed in every social formation.[11]

These rather flat, lame observations run up against the reservations Althusser's memoirs themselves (to name but one source) express about Lévi-Strauss (and, eventually, about Lacan too). Johnson wishes to indicate, rightly, that Althusserian Marxism did not operate in a vacuum. But the "intellectual climate" in which it did operate admits of another, broader interpretation. In an immediate sense, it necessarily included the Party (as we have seen) as well as the academy. Here, the stakes as Althusser saw them were political through and through ("I felt I had to get involved in philosophy for political and ideological reasons"; "I have always insisted that my aim was to intervene in politics as a philosopher and in philosophy as a politician").[12] Specifically,

> [by] remaining in the Party while adopting an openly oppositional stance … I thought I would be able to prove, at least in a formal sense, that

10 Althusser, *The Future*, p. 222.
11 Johnson, "Introduction" to Althusser, *The Future*, p. ix.
12 Althusser, *The Future*, pp. 182, 197.

> oppositional activity within the party on a serious political and theoretical basis was possible, and thus that the Party itself could be transformed in the long term.[13]

In a less immediate but no less important sense, Althusser's "intellectual climate" included broader debates about science as well as about Marxism, for it is the juncture of the two that Althusserian Marxism had in its sights, and it was their vectors that Althusser set about attempting to realign. It can readily be seen that rumblings about the meaning of science as well as about the meaning of Marxism were not restricted to purlieus like the rue d'Ulm, or, for that matter, those traversed by Lévi-Strauss and Lacan. Althusser, looked at in retrospect, had his place within a surprisingly broad process of questioning from within the philosophy and history of science at large, from Kuhn, Feyerabend and Lakatos through French philosophers of science like Jean Cavaillès, Georges Canguilhem (the "two thinkers to whom I owe practically everything", as Althusser was to characterize them)[14] and Gaston Bachelard (who, as Perry Anderson points out,[15] was also admired by Lefebvre, Sartre and Marcuse) and later, anti-foundationalist thinkers like Jacques Lacan, Michel Foucault and Jacques Derrida, and more recently still, by "science studies" advocates such as Bruno Latour. But if we are to begin to make fuller sense of what Althusser meant when he spoke of science, as well as what we mean when we speak of science, we must stand further back than any of these and take our bearings.

"Normal" versus "revolutionary" science?

Althusser's was not a lone voice, for all his undoubted originality. It found some premonitions as well as echoes in the unlikeliest of quarters. Thomas Kuhn's *The Structure of Scientific Revolutions*, which was first published in 1962,[16] is a case in point. For all its apocalyptic-sounding vocabulary involving "paradigm"-shifts from "normal" to "revolutionary" science, Kuhn's influential book was in many ways a characteristic product of the US academy and is mentioned here not because it made waves in France. The French were, by and large, underwhelmed by undulations from another shore with which they were already largely familiar. Kuhn proposed that the history of science cannot adequately be countenanced if science itself is regarded as a uniform process of discovery, one that reveals increasingly detailed pictures of a natural reality external to the scientific observer, "out there" and duly awaiting its registration. To the contrary

13 Althusser, *The Future*, p. 235.

14 Althusser, *The Future*, p. 183.

15 Anderson, *Considerations on Western Marxism*, p. 58.

16 Thomas Kuhn, *The Structure of Scientific Revolutions*, Chicago, University of Chicago Press, 1962. For a good survey of Kuhn's "reach", both within the social sciences and beyond them, see Gary Gutting, ed., *Paradigms and Revolutions. Applications and Appraisals of Thomas Kuhn's Philosophy of Science*, Notre Dame, University of Notre Dame Press, 1980, *passim.*

there were throughout the history of science – Kuhn described himself as an historian, not a philosopher, of science – many different ways of approaching and investigating an increasingly complex external reality, and that there is no good reason to suppose in advance that its complexities were continuously available or present to different scientists in anything like the same way. There is no good reason, in other words, to regard either external reality or the several processes of its investigation as having been cut from the same bolt of cloth. Separate processes of scientific discovery might be as irreducible one to another as are the objects they set out to investigate. To argue otherwise is to suppose a priori that all of these have something overarching in common, of which the various objects or processes of scientific investigation are but examples or manifestations – and this, as Kuhn rightly indicates, would be a very unscientific presupposition indeed. (Althusser, as we shall see, had reasons that were very much his own for coming to a broadly similar conclusion, though, as we shall also see, what he does with this conclusion – to say nothing (yet) about what he doesn't do with it – differs radically from what Kuhn did with it.)

The fact remains that since scientific discoveries take place or are effected at different times, it is tempting to arrange them chronologically in some sort of series or sequence. But here again a degree of caution imposes itself. Separate processes of scientific discovery may appear to present themselves in sequence or *seriatim*, but any such sequence is in fact only a more or less convenient ordering device or construct in the mind of the historian, one that has no necessary reference to anything in natural reality. Separate processes of inquiry do not – cannot – make sense only as links in an imaginary chain. Processes do not a progression make. To regard the history of science as a unilinear series of disclosures – as nature yielding "her" secrets to "the" increasingly practiced, painstaking gaze of "the" intrepid scientist – is to import an unargued and unarguable notion of progress, and for that matter what Nietzsche and others had identified as an "oculocentric" bias, into enterprises that stand in no need of either. It is also to presume too much about how scientific discoveries are made and how they are to be understood. What the history of science teaches us, according to Kuhn, is that newly-discovered "facts" do not in and of themselves explain the process of scientific theorizing that produce them. They are better explained with reference to the theoretical constellations that impel scientists to look at hitherto-unsuspected domains or to re-examine old domains that now admit of an improved and fuller understanding. Such constellations and domains suggest an understanding of the history of science that differs from, is irreducible to and improves upon the uncritical notion of a singular "logic" of scientific discovery, according to which science proceeds onward and upward in a linear progression. Science, Kuhn tells us in so many words, is not a demiurge but a human creation (Marxists – non-Althusserian Marxists – would say a "praxis"); scientific discoveries are discontinuous, open-ended ensembles of theories, methods and instruments of understanding.

That the foregoing summary characterization of part of Kuhn's argument would by now seem largely unexceptionable is a tribute to his achievement. He

asked questions about how scientific discoveries are made – or how science is done – rather than investigating either in detail, but *The Structure of Scientific Revolutions* was (perhaps for this very reason) an influential book within the confines of the Anglo-American academy, particularly among those who had shown little prior interest in the philosophy (or history) of science, social scientists in particular. Evidently, the uncoupling of science and progress made sense at a time when science seemed to portend as well as promise, and when an uncomfortable awareness of the downside of scientific accomplishment (atomic power, genetic engineering – not to mention Heidegger's *Machenschaft* or the principled misgivings of the Western Marxists) was beginning to come to the fore.

Science and orthodoxy

Even though these misgivings had no discernible effect on him, Althusser, for all the specificity of his own itinerary, can sound remarkably like Kuhn – or like a decidedly odd mixture of Kuhn and Foucault[17] – if quoted out of context, or if we overlook his largely self-incurred debt to Spinoza. Althusser wrote in *Reading Capital*,

> [T]he path these investigations are taking and will take leads us to a revolution in the traditional concept of the history of the sciences, which today (1968) is still profoundly steeped in the philosophy of the Enlightenment, i.e., in a teleologist and therefore idealist rationalism … [T]he history of reason is neither a linear history of continuous development, nor, in its continuity, a history of the progressive manifestation or emergence into consciousness of a Reason which is completely present in germ in its origin, and which its history merely reveals to the light of day.[18]

A science, in the words of *Lenin and Philosophy*, is "a theoretical … discipline", and "not an aggregate of empirical results".[19] But Althusser is quick to ground himself not in Kuhn but in those who were his more immediate forbearers. In France, quite unbeknown to Kuhn, Jean Cavaillès had attempted to account for the development of science through its internal epistemology of self-correction. Rather than arguing that the mind of the scientist was stimulated by an interaction with data from the world, Cavaillès saw science as proceeding entirely

17 Foucault's well-known negative appraisal of the Enlightenment – which runs parallel to Althusser's in some respects – has not escaped scrutiny. See Christopher Fox, Roy Porter and Robert L. Wokler, eds, *Inventing Human Science. Eighteenth Century Domains*, Berkeley, University of California Press, 1995, *passim.*

18 Louis Althusser and Etienne Balibar, *Reading Capital*, tr. Ben Brewster, London, Verso/NLB, 1970, p. 44.

19 Louis Althusser, *Lenin and Philosophy and Other Essays*, tr. Ben Brewster, London, NLB and New York, Monthly Review Press, 1971, p. 41.

within the dialectical logic of its own concept. Scientists were thus the bearers or instruments of this concept, which (as it were) criticized itself through their efforts. If this is combined with Gaston Bachelard and Georges Canguilhem's refusal to seek guarantees of scientific truth outside the activity of science itself, then the possibility is opened up of an anti-empiricist, anti-positivist, anti-subjectivist epistemology – a possibility Althusser seized on with alacrity.[20] Indeed, he may have seized on it rather too hastily, as we shall see.

As far as Althusser was concerned, if scientific knowledge does not advance cumulatively and progressively, as Kuhn (along with these others who were closer to home than Kuhn) were arguing at around the same time, what is denied in the first instance is the very process of continuity-in-discontinuity that had animated Hegel and, by extension, Hegelian Marxism too. It is largely for this reason that Althusser, in Martin Jay's well-judged words,

> denounced any attempt to reduce Marx to his earlier, humanist writings, which, he claimed, were polluted by prescientific ideology. Invoking the Bachelardian concept of an "epistemological break," a break he made even sharper by substituting *coupure* for (Jean) Bachelard's *rupture*, (Althusser) insisted that Marx had become a true Marxist only after radically shifting his *problématique*.[21]

"(T)he moment of rupture" in Bachelard was, in Dominique Lecourt's words, "the moment at which at one point at least, in a determinate domain, the tissue of pre-existing ideology is torn and scientificity is installed".[22] Only at this point did Marx open up what Althusser liked to call a "new continent" whose environs were hitherto off-limits to scientific enquiry, the continent of history. Hegelian Marxists since Marx had remained haplessly stranded on the other shore. Indeed, the "Hegelian Marxism" that is held by Althusser to have infected and compromised Marxism included not only the usual suspects – Lukács, Korsch and pre-Althusserian Western Marxism at large. It also – this being a point that was largely missed at the time but which is, nevertheless, altogether consonant with the arguments of the present study – prominently included orthodox dialectical materialism. As we have seen, it was precisely dialectical materialism that had warmed over and served up continuously a rather bland, anodyne version of Hegel all along. That dialectical materialism had not done this all on its own, but was in effect fortified in its endeavours by the supposed

20 Althusser, *The Future*, p. 184. On Canghuilhem, see the bibliography by Dominique Lecourt, in his *Marxism and Epistemology. Bachelard, Canguilhem, Foucault*, tr. Ben Brewster, London, Verso/NLB, 1975. pp. 214–16; on Bachelard, see the bibliography by Lecourt, pp. 111–13. See also Robert Paul Resch, *Althusser and the Renewal of Marxist Social Theory*, Berkeley, University of California, Press, 1992, pp. 178–81.

21 Jay, *Totality*, p. 394; Althusser and Balibar, *Reading Capital*, p. 205.

22 Lecourt, *Marxism and Epistemology*, p. 86; Louis Althusser, *Essays in Self-Criticism*, tr. Grahame Lock, London, NLB, 1976, p. 114, on "rupture" and "coupure".

"correctives" earnestly and innocently on offer from earlier Western Marxists (who only *claimed* to be bitterly antagonistic to it) was part of Althusser's point all along. We can now see why, in Martin Jay's words, Althusser's "restoring Marxism's scientific credentials … did not mean a simple return to dialectical materialist orthodoxy". It was not for nothing that Althusser insisted that it was "not only among his opponents … but also and above all among his supporters" that Marx was so seriously misunderstood.[23] Althusser's target, as now becomes clear, was a much broader one (in some respects) than it originally appeared to be to some of his early critics.

To see this is to begin to understand how and why Althusser was as concerned as he was to defend a Marxist science without at the same time subscribing to the simplistic base-superstructure polarity of Marxist yore, and without subscribing to any version of historicism or historical inevitability either. His central concern as a philosopher was with the problem of causality in historical and socio-political analysis. What Fredric Jameson, in a prescient paraphrase of Althusser's argument,[24] termed "expressive" causality is what Althusser attempted to line up in his sights. This kind of causality is traceable back to Leibniz, but on Althusser's account dominates Hegel, with whom it first came into its own. It supposes that the social whole be traceable back to a singular, "inner" essence, which may be variously defined (Montesquieu's *esprit général* is perhaps the best example).[25] Aspects of the whole then become phenomenal forms that express or "must" express this essence. The inner essence or principle is thus present at each and every point in the whole. The argument turns into an argument about representation. Some aspect, any aspect, will stand for or represent the inner essence of the whole. Each aspect will then be a *pars totalis*. But any such axis of representation presupposes a certain uniformity. The social or historical whole is said to have a certain kind of character or nature. If we ask how the whole or essence works on its parts or aspects or phenomena in given cases, the answers will vary. Nevertheless, the form taken by the question indicates what kind of answer will be advanced.[26] This means that something gets taken for granted. At the very least, what is presupposed is the possibility of tracing out a connection between the essence and the phenomenon that is always presumed to be there. The connection may be painfully obvious, utterly

23 Jay, *Totality*, p. 398.

24 Fredric Jameson, "The Re-Invention of Marx", *Times Literary Supplement*, 3832, 22 August, 1975, pp. 942–3. See also William S. Lewis, *Louis Althusser and the Traditions of French Marxism*, London and Boulder, Lexington Books, 2005, p. 174.

25 Montesquieu, one of the few precursors Hegel mentions (approvingly) by name, arguably influenced him greatly. See Paul Thomas, "Property's Properties: From Hegel to Locke", *Representations*, 84, Fall, 2003: pp. 30–43. I would venture to add that Montesquieu was also the subject of Althusser's best book. See Louis Althusser, *Politics and History. Montesquieu, Rousseau, Hegel and Marx*, tr. Ben Brewster, London, NLB/Verso, 1972, pp. 13–109, *passim*; and Anderson, *Considerations*, p. 66.

26 Althusser and Balibar, *Reading Capital*, p. 17, pp. 52–3; cf. pp. 188–9; Louis Althusser, *For Marx*, tr. Ben Brewster, New York, Vintage, p. 205.

recondite, tricky to nose out, or lurking in wait. None of this matters. It is the presumption itself that Althusser cannot abide. It amounts to a kind of admission in advance that a conclusion of a certain kind will be reached. This presumption has the effect of encouraging some questions while occluding others, preventing them from even being posed. And who is to say that it is not these others that most stand in need of being answered?

The axis of inner–outer or essence–phenomenon presupposes, then, a certain kind of cause–effect relationship which we should not accept on faith, precisely because it can be accepted in no other way. The same point may be made by a slightly more roundabout route. Expressive causality, to reiterate, posits or presupposes some sort of inner essence that is said to pertain or belong to any social or historical whole. But how can we know that this inner essence is not in fact just one particular aspect of the whole that is hypostatized and transformed into what is called, arbitrarily, the ultimately determining attribute of the whole? What guarantees are on offer that it really is "ultimately determining" in the required sense? Althusser thinks there are, and can be, none. Hegelian historicism is a case in point. It rewrites historical periods as multiple expressions or emanations of certain attitudes, thought-patterns, *idées maîtresses* or dominant ideas. But these are only elements or parts of the wholes they are said to govern. In elevating them to the rarefied levels from which they are said to determine the character of the whole, we are unavoidably indulging ourselves in displacement or distortion. One out of many possible candidates or categories is lined up and selected and is, in effect, misappropriated – in, by and through the very fact of its selection. It becomes a kind of master-code by which everything else is henceforth to be explained. Different aspects or attributes of the social whole are in this way assimilated one to the others in the name of an ultimate unity or identity that this assimilation was designed to affirm in the first place. Not only is this a completely circular mechanism of argument; it is also one that by virtue of its circularity is "ideological" as Althusser understands the term "ideology", as we shall see.[27] At this point we can begin to see the stakes involved in Althusser's counter-position of science to ideology. But we will come to these in due course.

It is apparent in the meantime that if Hegelianism is used as an example of the circularity Althusser has in his sights, what the entire Hegelian enterprise presupposes is that it all hangs together and makes sense in the end – a consoling, providential notion which Althusser does not shrink from calling "religious" or "spiritual". But this is the least of it. Althusser was proposing to cast his net far wider than Hegelianism as such. What follows from the foregoing characterization is that *any* base-superstructure model that tells us that the superstructure expresses or is an outgrowth of the base – or is its manifestation, reflex or reflection – will be vulnerable to the kind of criticism Althusser is concerned to level at Hegelianism. Dialectical materialism as this had long been understood – "the

27 Althusser and Balibar, *Reading Capital*, p. 90n, pp. 55, 57.

celebrated and spurious dialectic and its laws" – is conspicuously not exempt from it. Dialectical materialism's "framework" is, after all, just as "allegorical" as Hegelianism's or Hegelian Marxism's. It is merely "allegorical" in a different sense. Only the kind of allegory differs, when we "think within the unchanging framework of dialectical materialism (giving primacy to that dreadful term 'dialectical materialism' over all science)".[28]

It would be better by far to dispense with any essence–phenomenon causal model where the cause is always external to its effects, pushing or pulling these from outside, but standing apart from them throughout. What Althusser proffered in its stead is the interiority of the social or historical whole on or, more precisely *in* its elements, elements which will not be effects or manifestations or phenomena of the whole in the same sense. This substitution, if we are to believe Althusser, changes the rules of the game decisively. Cause is no longer exterior to "its" effects; effects are no longer separate from causes in the required sense. Instead the whole is (re)conceptualized as a structure that is immanent in its effects, and, indeed, *is* its effects. The structure has no existence apart from its elements, which constitute its medium of existence. The structure thus works *in* and *through* its elements, not on them.[29] Without, however, investigating in any detail the various by-ways of Althusser's "synchronic", structuralist alternative to expressive causality – he was to disown the "structuralist" label in the course of time – we can nevertheless see what underlies it readily enough. This is that *if* (following Jean Bachelard) an epistemological break was needed to remove the stranglehold of ideological reasoning and to permit the emergence or irruption of a Marxist science, and *if* science itself does not progress as, say, Kuhn's "normal" science proceeds, endlessly replicating itself in the same way that ideology (on Althusser's understanding of ideology) replicates itself, then Marx's *Capital* is certainly comprehensible as the site of a dramatic confrontation between two diametrically opposed constructions of historical causality, and as an example of the arrival of science not as a goal but as a "surprise" that will be "disconcerting" into the bargain, just as Althusser says.[30] But if this is the case, it is by no means clear on Althusser's own showing why the field of contestation should be restricted to the pages of *Capital* or the writings of Marx in the first place. Why should these battle-lines not also have been drawn up throughout the history of dialectical materialism, up to and including the appearance of Althusser's *Reading Capital* itself? Had not Althusser himself insisted that the economic is determinant in the last instance? Had he not added, laconically if not wearily, that the lonely hour of the last instance never comes? ("In the long run," said Keynes in similar vein, "we are all dead.")

28 Althusser, *Future*, pp. 222–3.

29 Althusser and Balibar, *Reading Capital*, pp. 96–9.

30 Althusser and Balibar, *Reading Capital*, pp. 45, 75. On "synchrony" vs. "diachrony", see pp. 96–7.

Science and ideology

Althusser was repeatedly given to insist with some forcefulness that ideology – which, perhaps under the impress of Gramsci, he understood in a very expansive sense – does not simply evaporate of its own accord whenever science is brought to bear. A science, in the words of *For Marx*, "is not obtained by inverting an ideology. A science is obtained on condition that the domain in which ideology believes that is dealing with the real is abandoned."[31] Overcoming ideology is not a matter of simply casting confusion to the winds. Ideology is not a miasma. What has to be taken into account here is the topography of Althusser's argument. Breaking the stranglehold of ideology is possible only where ideology has no legitimate place or field of play. It is possible, that is to say, only within the domains (or, let us remember, "continents") occupied by science, or, more precisely, by the various sciences. To break its stranglehold here is not to supersede ideology altogether, once and for all. Ideology will continue to stake out the territory that is all its own, where it will not be out of its element as it is whenever it crosses the border into the realms of science. All in all, ideology has a vaster field of play than science does; ideology also has complex mechanisms all of its own, by virtue of which it has always had considerable purchase. Althusser, indeed, is unusual among Marxist theoreticians of any persuasion in that he had recourse to the Maoist notion of non-antagonistic contradiction – contradiction, that is, of the kind that will continue to pervade future society after the revolution. Althusser made use of this notion to indicate the prevalence and permanence not only of contradiction but also of ideology itself, which "has no history"[32] because it is ever-present in its various forms.

Althusser's argument is adamant. Science according to Bachelard "has no object outside its own activity … it is in itself, in its practice, productive of its own norms and of the criteria of its own existence as science".[33] Science, that is to say, cannot be reached or judged by ideological means, and no ideological path is ever about to lead to science, for the latter cannot be so much as identified by any ideological mechanism. The only possible test for science is that provided by science itself,[34] which also and alone affords us the possibility of identifying and characterizing ideology as ideology; truth is the sign and measure both of itself and of falsehood,[35] since neither is verifiable by any criterion external to truth, as Spinoza, "Marx's only direct ancestor, from the philosophical standpoint", had put it.[36] Because "the science founded by Marx is the science of the history of social formations", it gives "a scientific content to the concept of ideology", in that it shows why ideologies "were accepted and

31 Althusser, *For Marx*, p. 192; Althusser and Balibar, *Reading Capital*, p. 43; Lecourt, *Marxism and Epistemology*, p. 207.

32 Anderson, *Considerations*, p. 84.

33 Lecourt, *Marxism and Epistemology*, p. 26.

34 Althusser and Balibar, *Reading Capital*, p. 25.

35 Althusser, *Essays in Self-Criticism*, p. 122.

36 Althusser and Balibar, *Reading Capital*, p. 102.

continue to be accepted as true". Marxism-as-science accounts for the conditions of its own emergence in an alien environment.[37] This is why "ideology not only lies in wait for science at each point where its rigor slackens, but also at the furthest point where an investigation currently reaches its limit".[38] Althusser goes so far as to say, again in *Reading Capital*, that "an epistemological vacuum" can be equated with "an ideological fullness".[39]

One of the underlying reasons why Althusser was bent upon assailing "progressive" or "evolutionary" philosophies of history – be these Hegelian or Darwinian – is his no less fervent distaste for any epistemology that claimed an increasing approximation to "the truth". This distaste must in turn be connected with Althusser's forceful rejection of any account of society that sought its "origins" in individual or collective intentionality (which perhaps accounts for his otherwise bizarre soft spot about Auguste Comte).[40] We can readily enough envisage these three targets – the historical, the epistemological and the intentional – as so many traps for the unwary and unprepared. But in so doing we should be aware that all three are *targets* of science in the first place if and only if we take as our point of departure a distinctive understanding of science which Althusser – rightly or wrongly – considered unprecedented and unorthodox with respect to dialectical materialist orthodoxy, as well as to the various Western Marxist alternatives that were on offer – alternatives whose alternative status was, in Althusser's view, more apparent than real and more consoling than convincing.

What these supposedly bitter enemies had in common, from the perspective Althusser adopted, was a view of "the verification procedures that guarantee a theory's scientificity",[41] a view that is far from unassailable. It always eventuates in the goal, connected with Vico's *verum factum* principle, that we can truly know only that which we have ourselves made, that people should thus be able to recognize themselves in a world that is their own product, which they themselves in some sense will have consciously created. The project of human intentionality will then, finally, have come to fruition; the actors in history will be the authors of its text. That this goal should be the basis or the guarantor of truth claims in the meantime is an injunction that stuck in Althusser's craw. It simply recombined the very historical and epistemological claims, along with similarly unfounded claims about the potency and promise of human intentionality that Althusser had disputed all along, as being providential, unwarranted and ideological. To see that such a nexus of claims is ideological through and through is to understand what is finally at stake in Althusser's hard-and-fast distinction between ideology and science, a distinction that is on Althusser's understanding of it much more fundamental and deep-rooted than either conventional dialectical materialism or Marxist humanism had ever seen fit to allow.

37 Althusser, *Essays in Self-Criticism*, p. 155.
38 Althusser and Balibar, *Reading Capital*, p. 90n.
39 Althusser and Balibar, *Reading Capital*, p. 107.
40 Jay, *Totality*, p. 398.
41 Jay, *Totality*, p. 399.

It is "the category of the subject (that) is the constitutional (or constitutive) category of all ideology".[42] This is to say that ideology is never reducible to mere "false consciousness", a category that invites and can scarcely avoid invoking historicism. The reason why Althusser (at least for a while) saluted Jacques Lacan's idea that the unconscious is the subject of a new science is that, like all true science, it exposed the subject, here the integrated ego, as "an illusion, indeed the central illusion of all ideology".[43] What Lacan had done in and to Freudian psychoanalysis bears comparison with what Marx, properly understood, had done with and to Hegelian historicism: divested it of its ideological underpinnings once and for all. Ideology with Lacan is the imaginary extending through maturity and preserving "a false sense of individual subjectivity"[44] and effectivity. Such preservation – or *Aufhebung* – is all the more noxious in its influence because the relationship between subjectivity so conceived and ideology is constitutive and reciprocal. As Althusser famously put the matter, ideology by its very nature "hails or interpellates concrete individuals as concrete subjects".[45] Ideology is best understood not as false consciousness but as *un*consciousness of a kind that has real, material effects, and real, material apparatuses (*appareils*) that prevail palpably in the world around us. Ideology is something that Marx himself had come to recognize as being a *practical* concept, not an error in perception or calculation. We live out its effects in the world around us on a daily basis, and are in no position to do anything else. Ideology has to do with lived experience. It is the expression of a lived relationship between human beings and the world around them, as well as of lived relationships among human beings themselves. Ideologies are not simply reflected, presented or conceptualized. They are practical in their own right and by their very nature, so long as we continue to accept the "facts" that positivists in all innocence take on trust as the "givens" of experience. Bachelard, in Dominique Lecourt's formulation, may be credited with "a whole theory of the fetishism of the real".[46] Althusser not only "equates ideology with a naïve faith in the immediacy of sense impression"[47] here following Bachelard and Cavaillès; he also recognizes that ideology so understood is practical and constitutive into the bargain. Ideology weaves a web of false assurances, a Gordian knot that only science can cut through. Science can cut through it because of its capacity to go beyond the given, immediate "facts", and relations that constitute our everyday lives.[48] In this way, science – along with "authentic art", a (rather Brechtian) notion that

42 Althusser, *Lenin and Philosophy*, pp. 170–1.

43 Jay, *Totality*, p. 402; see also Althusser and Balibar, *Reading Capital*, pp. 157n, 243–7.

44 Jay, *Totality*, p. 403. Althusser even compares the Freudian concept of "wish-fulfilment" (*plein du désir*) with "ideology-fulfilment" (*plein d'idéologie).* See Althusser and Balibar, *Reading Capital*, p. 143.

45 Althusser, *Lenin and Philosophy*, p. 173.

46 Lecourt, *Marxism and Epistemology*, pp. 156, 158.

47 Jay, *Totality*, 401.

48 Jay, *Totality*, p. 404.

Althusser once dangled tantalizingly before the reader[49] but failed to develop – is able to penetrate and see through ideology and ideologically-based claims.

Ideology, then, was to Althusser (in the words of Perry Anderson's paraphrase of his argument)

> a set of mythical or illusory representations of reality, expressing the imaginary relationships of (individuals) to their real conditions of existence, and inherent in their immediate experience: as such, it was an unconscious system of determinations, rather than a form of consciousness as ordinarily conceived. The permanence of ideology as a lived medium of delusion was, in turn, a necessary consequence of its social function, which was to *bind* (people) together in society by adapting them to the objective conditions allocated them by the dominant mode of production. Ideology was thus the indispensable cement of social cohesion in every period in history … the transhistorical statute of ideology as the unconscious medium of lived experience meant that even in a classless society, its system of error and delusion would survive … (as) unseen and impermeable to the individuals within it.[50]

> Althusser's passionate attack on the ideological illusions of immediate experience as opposed to the scientific knowledge proper to theory alone, and on all notions of (people) or classes as conscious subjects of history, instead of involuntary "supports" (*Träger*) of social relations, was an exact reproduction of Spinoza's denunciation of *experientia vaga* as the source of all error, and (of Spinoza's) remorseless insistence that the archetypical delusion was (people's) belief that they were in any way free in their volition, when in fact they were permanently governed by laws of which they were unconscious.[51]

Nor indeed did Spinoza's impress end here. "The categorical distinction between 'objects of knowledge' and 'real objects'" "was taken straight from Spinoza's … separation of *idea* and *ideatum* in *De Emendatio Intellectus*".[52]

Althusser gives this same separation of "objects of knowledge" and "real objects" a lot of work to do. The former are products of scientific theorizing, the results of the work involved in coming up with (or "discovering") them. The latter are their referents, the referents provided by a real, material world that present themselves to the scientist. The scientist's task is to make objects of knowledge congruent with real objects, since the coincidence of the two can in no way be assumed or taken for granted. It must, rather, be brought about; objects of knowledge and real objects must be brought into line, and it is here, at

49 Althusser, *Lenin and Philosophy*, pp. 221–7.

50 Anderson, *Considerations*, pp. 84–5. See also William S. Lewis, *Louis Althusser*, p. 169.

51 Anderson, *Considerations*, p. 65.

52 Anderson, *Considerations*, p. 64. See also Ted Benton, *Rise and Fall*, p. 38.

the levels of tasks to be performed or work ("theoretical production") to be done, that the distinction between ideology and science comes to the fore all over again. The raw material for scientific activity is provided by ideological conceptions of the world whose ideological character is, at first, concealed beneath the immediacy of sense impressions. Uncovering its ideological substrate is and can be the work of science, and of science alone, as Althusser conceives of it. Ideologies by their very nature cannot admit to or reveal their own ideological character; only science has the wherewithal to do this, since science and science alone has the capacity to go beyond the immediate relations of everyday life. Ideology by contrast fails to reflect on itself or even to identify itself as ideological. To use the Freudian language to which Althusser, under the influence of Lacan, resorts, ideologies "denegate" their own ideological character.

If ideology is, as Althusser says, "the imaginary relationship of individuals to their real conditions of existence",[53] then philosophy, for its part, "far from being the spokesman of ideology vis-à-vis the sciences" must rather "neutralize (ideology's) discourses"[54] by showing that they are out of their element within the scientific realm (or "continent"). Because "the science founded by Marx is the science of the history of social formations", it gives "a scientific content to the concept of ideology" in that it shows why ideologies "were accepted and continue to be accepted as true". Marxism as science accounts for "the conditions of its own 'irruption' in the field of (those) ideological conceptions with which it broke".[55] Here Lecourt quotes Bachelard to good effect:

> The history the sciences will then appear as the most irreversible of all histories. In discovering the true, the man of science bars the way to … irrationality. Irrationalism can no doubt spring up elsewhere. But from now on there are forbidden routes. The history of the sciences is the history of the defeats of irrationalism. But the fight is without end.[56]

Althusser himself singles out Canghuilhem, whose career, he says in his memoirs,

> gave me an astounding view for the consequences of the sciences of turning prevailing orthodoxies upside down … the so-called epistemologies to which I had appeared to pay so much attention were absurd outside the framework of the history of science … [F]ar from conforming to the logic of the Enlightenment, such a history might have implications for his discoveries on the basis of what he referred to, almost in the same terms as us, as

53 Althusser, *Lenin and Philosophy*, p. 162.

54 Lecourt, *Marxism and Epistemology*, p. 72.

55 Althusser, *Essays in Self-Criticism*, pp. 155–6; Althusser, *For Marx*, p. 69.

56 Georges Canguilhem, *L'activité rationaliste de la physique contemporaine*, Paris, Presses Universitaires de France, 1951, p. 27, quoted Lecourt, *Marxism and Epistemology*, pp. 12–13.

> "scientific ideologies," philosophical representations affecting the development of science, the generation and even the nature of scientific concepts, and often in a wholly paradoxical manner. It was from him I learnt the disconcerting historical cunning of the relationship between ideology and science.[57]

Politics and vision?

Science for Althusser manifestly does not mean "a correspondence between a perceptually observed object and its mental representation".[58] He insisted to the contrary in *Reading Capital* that "we must completely reorganize the idea we have of knowledge, we must abandon the mirror myths of immediate knowledge, and conceive of knowledge as a production".[59] This is an idea – an arresting idea – that Althusser outlines elsewhere by connecting "the mirror myths of immediate vision" with ideology. "The structure of all ideology", in the words of *Lenin and Philosophy*, "is *speculary*, i.e. a mirror structure, and (is) *doubly* speculary: this mirror duplication is constitutive of ideology and enables its functioning".[60] In keeping with his use of Lacan's critique of the unified "subject" as being at the root of all ideology, Althusser insists that it is "in the imaginary misrecognition of the 'ego'" that the human subject "'recognizes' itself".[61] Althusser, that is to say, invests in the notion of Marxism as having counterposed itself in principle to either an observational or even a specular notion of truth, as having defined itself against the "speculative" notion of the mind as a mirror in which the external world can find adequate or accurate reflection. Even the inversion involved in the celebrated "camera obscura" metaphor for ideology in *The German Ideology* was superseded on this reading once Marx passed from ideological to scientific reasoning, although where this might leave Lenin's copy theory of reflection in *Materialism and Empirio-Criticism* is (shall we say) less clear.[62] Althusser in his self-styled battle of wits with the ideologues of the PCF was, in general, disinclined to criticize Lenin on this or any other count. Althusser's addition of Lacan to the critique of ideological "speculation" could nevertheless have an altogether intriguing effect. This is that (in Martin Jay's paraphrase) "(w)hat we are looking *for* when we criticize the distortions (brought about in, and by) ideology may be present in

57 Althusser, *The Future*…, p. 184.

58 See Martin Jay, *Downcast Eyes. The Denigration of Vision in Twentieth Century French Thought*, Berkeley, University of California Press, 1994, p. 374; cf. Martin Jay, "Ideology and Ocularcentrism: Is There Anything Behind the Mirror's Tarn?", *Force Fields. Between Intellectual History and Cultural Critique*, New York, Routledge, 1993, pp. 134–146.

59 Althusser and Balibar, *Reading Capital*, p. 24.

60 Althusser, *Lenin and Philosophy*, p. 180.

61 Althusser, *Lenin and Philosophy*, pp. 218–19.

62 See Althusser, *Lenin and Philosophy*, p. 158; Althusser, *The Future*, p. 212. Althusser continued to regard *Materialism and Empirio-Criticism* as a "permanently revolutionary manifesto for knowledge, for scientific theory." (Althusser and Balibar, *Reading Capital*, p. 31).

what we are looking *at* in certain manifestations of ideology itself".[63] While this is certainly a thought to conjure with, the task of developing it was, in the event, left to thinkers other than Althusser[64] who were tellingly to invoke Nietzsche's distrust of ocularity into their arguments. Nietzsche was concerned among other things with challenging the reality of any pure or direct perception of nature, of any direct, unfiltered access to the world around us, on the grounds that any such confrontation involves interpretation, not registration, and that the scientist, whether the scientist knows this or not, is in effect the theoretical technician or artisan of cut-and-groove precision and exactitude and not the instrument of pure, untrammeled "knowing" at all. Here too, perhaps, is a thought that Althusser too left others to conjure with, a line of inquiry well worth following. It cannot be said that Althusser, who certainly raises the idea of doing so, ever followed it very far himself.

And in truth there are at the end of the day many such finally undeveloped ideas in Althusser. To say this is not to conclude, on a lame note, that Althusser has left us with a good deal of work to do – for Marxism, after all, had left us all with a great deal of work to do all along, and it still does. To say this is, rather, both to pay tribute to the undoubted fertility of Althusser's mind, and to qualify the praise involved in doing so. There are reasons why so many readers have felt short-changed by Althusser. He shatters complacent assumptions, to be sure, but the complacent assumptions he shatters, from our present point of view, have more to do with ideology than with science as its counterpart, and more to do with Marxism than with science as its (supposed) complement. Either way, it is science that is finally left high and dry throughout his successive accounts. What in the world is Althusser's science supposed to predict? If we ask – as we surely must ask – what understanding of science, its protocols and procedures, we are left with after reading Althusser; if we ask what, in his accounts, has enhanced our understanding of these protocols and procedures, we finally draw a blank. If we ask whether, then, he has really gone beyond Engels's questionings – which, it will be remembered, were always about the status of science, about how this thing called science is to be *regarded*, and never about how science is to be *done*; and if we ask whether there is anything in what he says about science that would help us dissipate and not confound the confusion about this topic that had bedevilled Marxism ever since Engels, we must conclude that Althusser (like so many others before him) finally has not helped us very much at all.

This point can be made more forcefully. Even if we grant for the purposes of argument that the displacement of ideology by science is, by and large, to be celebrated, it manifestly does not follow from this that the hard-and-fast distinction between the two is itself to be celebrated uncritically, as an unqualified advance. Yet this is what Althusser comes perilously close to asserting. Alex

63 Jay, "Ideology and Ocularcentrism", p. 146.

64 See in particular Sarah Kofman, *Camera obscura – de l'idéologie*, Paris, PUF, 1973, *passim.* For a summary characterization, see Jay, "Ideology and Ocularcentrism", p. 137.

Callinicos quite rightly observed that there is no singular, identifiable criterion of scientificity anywhere in Althusser's writings.[65] Althusser, to his credit, unlike Dominique Lecourt and others, does not often employ the hypostasized concept of "scientificity," and never uses it to imply, erroneously, that all sciences follow much the same path. Indeed, his notion of different scientific "continents" may, in its manner, admit of separate approaches to separate areas or domains of inquiry. But "continents" may have been an ill-chosen image for other reasons. The "discovery" of any new (but presumably inhabited) continent is in the eye of the discoverer, not the discovered, who may well see something other than "advancement" or "opening up" in action. Again, discovery is one thing, and proper charting, exploration and development of what (and who) is discovered something altogether different. It is at this point that Althusser's hard-and-fast distinction between science and ideology, and his uncritical celebration of the former over the latter, let him (and us) down. Althusser avoids, in fact wilfully disregards, the downside of scientific advance, as we have seen, even though (or precisely because) this threatening downside was coming to the fore among his contemporaries. These contemporaries included the "Hegelian Marxists" from whom Althusser wished to distinguish himself. These Hegelian Marxists were, in turn, still infected with ideological residues or contaminants that are by definition out of their element within the territory newly staked out by science. These hard-and-fast considerations may have been enough in the way of guilt-by-association for Althusser to justify the banishment of these interlopers from the realm, along with the outmoded and dangerous ideas they had brought along with them. But they are surely not enough for those of us who can see that the fast and loose strokes of Althusser's arguments, and condemnations, are simply too broadly applied.

It is the positive value he attaches to science and the negative value he attaches to ideology that underlies Althusser's celebrated (or notorious) "epistemological break" (*coupure épistemologique*), the break that he thinks defines Marxism as a science and separates it from its residual ideological traces once and for all – but had difficulty pinpointing, even as he made so much of the (needless) task of locating it within Marx's writings. More is made to hang on this particular hook than it can reasonably be expected to bear. The distinction is strident and overdrawn, on the one hand, *and* lacking in precision, on the other – a sure sign that something is awry. Nor indeed is this an isolated example, one that could simply have been put right on the basis of a less uncertain Marxology than Althusser had at his command. Althusser throughout regarded science as an opportunity, not a threat, and did not in any obvious sense pursue a line of reasoning which was a characteristic product of other, earlier Western Marxist theorists, on the grounds that their thought had been tainted and compromised by "Hegelian Marxism", as we shall see. But Althusser, in avoiding the issue of the downside of scientific and technological "advance" that Hegelian Marxists had

65 Alex Callinicos, *Althusser's Marxism*, London, Pluto Press, p. 59.

emphasized, conveyed the impression that he was doing so because he wished, for other reasons, to distinguish himself from Hegelian Marxism lock, stock and barrel. To forego any discussion of the downside of scientific advance – as Althusser did – seems a heavy price to pay for the theoretical – or, to use Althusser's own locution, "theoreticist" – singularity of his own approach. Hegelian Marxists were after all by no means alone in their various perceptions of the downside of scientific and technological advance. They simply had their own way(s) of accounting for and characterizing something that was sufficiently well-marked to have been noticed by many others (including student radicals and academic philosophers of science) at the time. But it was not noticed by Althusser, from all published appearances. In view of this startling omission, the least that can be said is that Althusser, in his concern to strike against the received ideas of Hegelian Marxism in an altogether novel way, succeeds, despite himself, in casting one of them – the negative implications of unfettered scientific advance – into stark relief.

Althusser was, as we have seen, determined rigorously to distinguish his recharged Marxism from anything that could be construed as an Hegelian-Marxist residue: so much so that he consigned to theoretical limbo a series of misgivings about science and technology that were not properly or exclusively the province of Hegelian Marxists in the first place. But in having given expression to these misgivings Western Marxists had done much to separate themselves from a Soviet dialectical materialism that was, by and large, far less critical of the straightforwardly "progressive" character of technological advance than Western Marxists were. And in failing to acknowledge this important difference of principle – a difference in kind, not just of degree – between the two schools of thought, Althusser, despite his rather forced protestations to the contrary, cast in his lot, finally, with the dialectical materialists (and the leadership of the PCF). The idea that science afforded opportunities for the regrounding of Marxist theory, or for its redefinition as the practice of philosophy, not the "philosophy of praxis", was after all an idea that the party leadership could take on board at no real cost to their own standing or to what they had long believed in. Indeed, this point could be put more strongly, in view of the Party leadership's long-standing vested interest in the concept of "scientificity" as doctrinal ballast for its own "vanguard" status. Why, in view of this connection, should the Party leadership not have discreetly welcomed Althusser's initiative in having regrounded "scientificity", particularly when Althusser had used this regrounding to refine and underscore the venerable couplet of historical materialism/dialectical materialism, another long-standing source of ideological ballast?

Others of course – and I do not mean to exclude scientists themselves – might well have good reason to be rather less accommodating about the character of the transaction. Althusser, for his part, was to accuse himself in *Essays in Self-Criticism*, of having given in to various "theoreticist" tendencies in his earlier writings. But his uncritical espousal of the straightforwardly positive character of science, on the grounds of its sheer theoretical usefulness for him, was not

one of them – even though it was, arguably, the most "theoreticist" tendency of all. His non-Party critics were, by and large, neither convinced nor disarmed by Althusser's candour, a candour that smacked of grandstanding and posturing, and which was to smack of these all over again in *The Future Lasts Forever*, his memoirs.

The enchantment of science

It is, however, when we ask what lay behind such posturing that something rather more ominous than any *ad hominem* finger-pointing begins to emerge. This is that Althusser, for all his originality, was in one respect at least not original at all. His blind spot about the linkage of science and progress appears all too woefully familiar, all too well-rehearsed. Nor indeed was this blind spot simply a Party-induced one. Its purview is much wider. By now we have, all of us, had ample time to grow accustomed to, and to be able to assess critically, a series of broadly "Weberian" claims about modernity, most markedly the idea that the remorselessly "modern" societies we inhabit (if we inhabit them at all) are, whatever their ideological complexion, "rationalized" and "disenchanted". Magical, superstitious validations have been cast to the winds; the Enlightenment project, no longer an empty dream, had finally come to fruition – or so it seemed, ironically enough, even as the Cold War was running its weary course. Max Weber, to whom "disenchantment" or *Entzauberung* is generally traced, was himself rather more critical of, and indeed rather more melancholy about this development than some of his self-styled followers were to prove: but that it *was* a development that really had taken place, like it or not, and that the development was well-nigh irreversible, was something that neither master nor acolyte took it upon himself to deny.

Once again, ironies abound. Althusser of all people was no Weberian acolyte. Indeed, he was in some respects a trenchant critic of the Enlightenment project at large, as we have seen. But not, I submit, in all respects. He too, astoundingly enough, gives in to its blandishments and temptations at a crucial point in his exposition – in his eagerness to resort to, in fact to trumpet and flourish "science" as the clincher to his argument. Althusser can serve, despite himself, as a timely reminder of the dangers involved in an uncritical or frankly opportunistic espousal of the "progress" involved in scientific and technological "rationalization", but can serve also (and again despite himself) as a salutary reminder that Marxism throughout its history has had more than one face to present on this issue. It was Marx who said in the *Manifesto of the Communist Party* that we are "compelled to face with sober senses" the developments that capitalist modernity has brought about, however jarring and disruptive they may have been. Here Marx, too, was speaking in the idiom of disenchantment. But it was also Marx who, less obviously perhaps, was quite aware that "the abstract materialism of natural science" can *itself* be the stuff of enchantment or incantation if we let it enchant us. It could be argued that the "sorcerer's apprentice"

motif in the same *Manifesto* is designed to underline this very point.[66] Let us, by all means, be done with superstition. But an underlying question will then remain. Why shouldn't science be just as "enchanting" as anything else? Has it never been anybody's blind spot? Was it not Engels's? Was it not the dialectical materialists'? Did it not ensorcel Althusser himself, at the end of the day? Why must science be wheeled out as a *deus ex machina* or produced as a trump for every argument? It is not the least of Engels's shortcomings, as we have seen, that his own hard-and-fast, broadly drawn distinction between socialism utopian and scientific sought to give utopia too bad a name – just like that! – and to give science too good a name, at one and the same time? Althusser was no less impatient in his counterposition of "science" to "ideology", and in his corresponding eagerness to force the founding fathers of Marxism back into the same, familiar, Procrustean bed.

66 See Chapter 1, above; see also Paul Thomas, "Seeing is Believing: Marx's *Manifesto*, Derrida's Apparition", in Leo Panitch and Colin Leys, eds, *The Socialist Register, 1998. The Communist Manifesto Now*, London, Merlin Press, 1998, pp. 205–17.

Conclusion

Marx in his *Economic and Philosophic Manuscripts* refers reflexively not to his "materialism" but to his "consistent naturalism and humanism",[1] a phrase that might give us pause, since "consistent naturalism and humanism" is a more comprehensive category than "materialism". It is not itself a materialist category, *tout court*. It certainly contains "matter", but it also includes much else besides: labour, life, body, mind, imagination. No extant notion of materialism – no notion of materialism that could have been known to Marx in 1844, in other words – was capacious enough to contain such features.

Marx's category is more comprehensive in the specific sense that it buckles together naturalism and humanism, and this too might give us pause. To revert to a comparison raised earlier, even Kolakowski among recent commentators appears to think – along with G.A. Cohen and, for that matter, Friedrich Engels – that Marx regarded nature as a kind of arena of (and for) human activities on nature, and that human activity characteristically pushes back external nature's boundaries as it advances specifically human aims and purposes. This view is a misapprehension, and a very common and deep-seated one, of Marx's position in the *Manuscripts*. It regards "the human" and "the natural" in zero-sum terms, much as Engels regarded them (see above, Chapter 2). But it is manifest that Marx in 1844 – and for that matter in 1875, when he wrote the *Critique of the Gotha Program* – did not. The "consistent naturalism or humanism" of the *Manuscripts* insists quite to the contrary that what makes human labour human also and by the same token makes human labour a natural category. "Free conscious activity", which is how Marx characterizes labour in its human form, both in the *Manuscripts* and in *Capital*, is every bit as natural a characteristic of us as a species as the activities of other animal species are of them.

The learned, instinctive activity by which members of other animal species might be said to "work" – as when bees build hives, beavers dams and spiders webs – may be further down some imaginary scale of comparison, but such placement does nothing to make such activities any more "natural" than the labour we humans undertake.

1 Karl Marx, *Economic and Philosophic Manuscripts of 1844*, tr. Martin Milligan, Moscow, Foreign Languages Publishing House, 1961, p. 156, cf. pp. 102–4.

What this means in turn is that the denial of the human character of human labour that goes under the name of alienation in the (capitalist) labour process is also a denial of its natural character. If we as a species may be said to have a purpose, then alienation in its capitalist form (which is to be distinguished at the level of definition from objectification, which characterizes all modes of production) entails that we are today busily, obsessively bent upon subverting and denying it.

Marx's point here, no matter what its claims to truth may be, has nothing obviously or necessarily "materialist" about it. Z.A. Jordan considers that "naturalism" would be a more appropriate designation, and his view has much to commend it. In the 1859 *Contribution to the Critique of Political Economy* – which, we should remember, occasioned Engels's phrase "the materialist conception of history" – Marx's central conviction is that "the production of material life", the organization of productive activities, should in principle occupy pride of place in the investigation of social structures and historical development. Following from this centrality comes Marx's well-known insistence that "the mode of production of material life conditions the social, political and intellectual life-process in general" – this being the "guiding thread" that leads directly into Marx's later, detailed investigations of labour, the commodity, value, wages, and exploitation.[2] Much hangs on how this "mode of production" is to be understood as a category or as an Ariadne's thread leading us through the labyrinth of capitalist productive relationships and institutions. Marx proceeds to make it clear that "the economic structure of society", society's "real basis", is itself not a material category. It is meant to include social relations of production, relations, that is to say, among human beings, as well as forces of production, which can, but need not take the form of inanimate objects. That Marx appears not to have protested against his friend's phrase "the materialist interpretation of history" as a label for his project may be much less important than the fact that what Marx himself did say can be sensibly characterized as "materialist" in only a severely restricted sense (or a greatly expanded one). After all, "consistent naturalism or humanism distinguishes itself both from idealism and materialism, constituting at the same time the unifying truth of both".[3]

Why else – to cast our net wider – would Marx's "Theses on Feuerbach" have been at such pains to distinguish Marx's programmatic declaration of intent from "all materialism up till now"? Why else would Marx have proceeded so forcefully to disparage the "old materialism" of the French Enlightenment for its evident incoherence? (If, as it tells us, we are but malleable products of our surroundings and circumstances, we lack agency: the possibility of taking action to alter these circumstances, which is after all what Marx wants us to do, is foreclosed and blocked off at the level of definition.)

2 See Paul Thomas, "Marx and Engels", in David Boucher and Paul Kelly, eds, *Political Thinkers. From Socrates to the Present*, Oxford, Oxford University Press, 2003, p. 422.

3 Marx, *Economic and Philosophic Manuscripts*, p. 156.

Marx's "conception of nature and history", in Jordan's words, is

> not based, as Engels suggested, on a single set of laws, discovered by Hegel, which apply both to the physical universe and to the human world; nor are his views on society and history either definitionally or inferentially dependent upon or reducible to an absolute materialism, whether mechanical or dialectical. Since the general assumptions of the Marxian conception of man and society make exclusive use of social and historical terms, they should not be regarded as materialism in the accepted sense of the term.[4]

Engels for his part may have valiantly striven for the anti-metaphysical materialism for which Plekhanov later applauded him, but this does nothing to dislodge the fact that an anti-metaphysical materialism is a forlorn hope and an incoherent goal that would exceed anyone's grasp. Materialism is a metaphysical doctrine and category, every bit as metaphysical as the idealism that is its legendary antagonist. But no such inconsistency arises if we speak – as Jordan thinks we should speak – of an anti-metaphysical naturalism.[5] "Nature," as George Santyana once put it, "is material, but not materialistic."

Such naturalism would make use of material categories but would make use of these in an expanded sense: theory itself, Marx insisted, "becomes a material force once it has gripped the masses", and it is by no means fanciful to regard the *Manifesto of the Communist Party* and other writings as attempts to render theory (of the right kind) into a force capable of "gripping the masses" in this very sense. It was the *Manifesto*'s ambition to set the terms of its own success, as Georg Lukács's *History and Class Consciousness* appears to have recognized. "The philosophers have only interpreted the world in various ways; the point is, however, to change it."

> Marx's insight was simply – simply! – that theory, to be effective, can no longer rest content with producing empty, abstract nostrums of the kind that would put the world to rights by virtue of their very elaboration, or of their intellectual elegance. If people fail to act on the basis of their beliefs – as Marx proceeded to act on the basis of his – they might as well be whistling in the dark in propounding or expounding … beliefs, or indulging themselves in what Marx … called "theoretical bubble-blowing".[6]

Overdrawn textbook contrasts between "materialism" and "idealism" are of little help here, and may be positively misleading. It was idealism, after all, that according to the first "Thesis on Feuerbach" had developed the "active side" of our being as human agents, in contradistinction to the "old materialism" that had

4 Z.A. Jordan, *Evolution of Dialectical Materialism*, London, St Martin's Press, 1971, p. 26.

5 Jordan, *Evolution of Dialectical Materialism*, p. 401, n. 9.

6 Paul Thomas, "Seeing is Believing: Marx's *Manifesto*, Derrida's Apparition", in Leo Panitch and Colin Leys, eds, *The Socialist Register, 1998*, Rendlesham, Suffolk, Merlin Press, 1998, p. 221.

painted itself into a corner – that of a supine inability to account for action even as a category, let alone agency as a human characteristic – the very agency the *Manifesto* was programmatically to introduce and, indeed, flaunt.

While this is not the place adequately to join this important issue, I do wish simply to argue by way of conclusion that Marx's own writings, if regarded with an unjaundiced eye, and not through the lenses so eagerly supplied by Engels and others, provide what is not the foundation of what has come down to us historically as scientific socialism and dialectical materialism, but an alternative to these. This alternative still provides the path not taken and can, in principle, avoid the missteps and excesses that are strewn along the historical path that was so laboriously taken. Further than this there is no need to go, at least for present purposes. There is no need to persuade or convince the reader that Marx's approach is in any way better than, or preferable to, the tortuous, labyrinthine road that was negotiated at such immense cost. The need is simply to establish that it is a *different* approach, an alternative. To indicate this need not involve uncovering and dusting off a pristine, simon-pure Marx, whose words, once made manifest and audible at long last, will prove sufficient unto the day and cast confusion to the winds once and for all. There is no such Marx, and no such Marxism either. My concern in this book has been to trace one path that led away from the Marx who really existed. The milestones and signposts erected by those who misrepresented his teachings are of much less importance in the end than the fact that Marx's misrepresentation has mattered, and matters still.

Epilogue

Nature and artifice in Marx

The problem posed

That Marx, according to G.A. Cohen, "did not deviate" from "nineteenth-century conceptions of science" is "not necessarily to be regretted"; "the fashionable attempt to enlist him in the ranks of anti-positivist philosophy of science is entirely misguided".[1] Leszek Kolakowski's pertinent contrast of Marx with Engels seems to point to a very different conclusion. Kolakowski says,

> It does not appear that the philosophical bases of Marx's Marxism are compatible with belief in general laws of nature having, as particular applications, the history of mankind and also the rules of thought, identified with psychological or physiological regularities of the brain.[2]

There is thus "a clear difference between the latent transcendentalism of Engels's dialectic of nature and the dominant anthropocentrism of Marx's view", an anthropocentrism that can also favourably be contrasted with Engels's "naturalistic evolutionism". What Kolakowski means by this is that whereas Engels, broadly speaking, believed that man could be explained in terms of natural history and the laws of evolution to which he was subject and which he was capable of knowing in themselves, Marx's view was that nature as we know it is an extension of man, an organ of practical activity.[3]

Cohen's Marx is by contrast indistinguishable from Engels. Cohen believes that for Marx "history is a substitute for nature", and that the

> familiar distinction between forces and relations of production is, for Marx, one of a set of contrasts between nature and society. Commentators have failed to remark how often he uses "material" as the antonym of "social" and of "formal", how "natural" belongs to "material" against "social".[4]

1 G.A. Cohen, *Marx's Theory of History: A Defense*, Princeton, Princeton University Press, 1978, p. 46.
2 Leszek Kolakowski, *Main Currents in Marxism*, vol. 1, *The Founders*, Oxford, Clarendon Press, 1978, p. 401.
3 Kolakowski, *Main Currents in Marxism*, pp. 402, 405, 401.
4 Cohen, *Marx's Theory of History*, pp. 24, 98. See also Jon Elster, *Marking Sense of Marx*, Cambridge, Cambridge University Press, 1985, p. 56.

Marx according to Cohen's dualistic view thought that people "would relate in connections of mastery and servitude until they were masters of the physical world", since the struggle with nature "obscures [man's] insight into himself". But capitalism, we are confidently assured (by Cohen not Marx) brings the strife between man and nature, and man and man, to an end. It completes the conquest of nature, which is now so reshaped by industrial history that men can claim it as their own. Nature had once pressed man down to a natural level, but he has now raised it to a human level.[5] Nature is then not an externalization of man but his antagonist, to be conquered, subjugated and controlled.

Cohen and Kolakowski cannot both be right. Yet their very different discussions of nature d'après Marx push them closer together in one, crucial respect than either of them might be comfortable believing. Kolakowski, identifying what he calls the "Faustian-Promethean motif" in Marx's writing, paraphrases Marx as saying that "the conquest of nature must go forward … in the next stage, man would achieve mastery over the social conditions of progress". This statement is closer to Cohen's dualistic than to Kolakowski's own "anthropocentric" interpretation of Marx. A typical feature of Marx's Prometheanism, Kolakowski continues, is his "lack of interest in the natural (as opposed to the economic) conditions of human existence". Marx simply "did not believe" in natural obstacles to human activity.[6] Even though these last two claims are as unfounded as anything in Cohen – they run up against so obvious a source as the *Critique of the Gotha Program*, for one – Kolakowski does not shrink from extending them. He insists, indeed laments that "socialized nature", for Marx, "is not a metaphor. Everything in man's being is social; all his natural qualities, functions and behaviour become virtually divorced from their animal origins".[7] Kolakowski collapses Marx's anthropocentrism into this Prometheanism. He seems to share Cohen's dualistic view that Marx regarded nature as an arena of (and for) human activity. Such activity necessarily pushes back nature's boundaries as it advances human aims. Nature may not be as recalcitrant or antagonistic as Cohen imagines, but it remains fundamentally external to humanity. This raises interpretational problems that go beyond Cohen and Kolakowski. A response to them that denied nature's externality and indicated that, according to Marx, mankind is itself part of nature and is to be regarded as one natural species among others could certainly find textual support in Marx's writings, as we shall see. But if human beings are natural in this sense, here is no obvious reason not to apply the methods of natural science across the board to human history and society, much as Engels tried to do. If, on the other hand, Marx is regarded as anthropocentric this would imply a belief that humanity occupies and acts from some sort of privileged position vis-à-vis the rest of "external" nature. Since this interpretation, too, can find textual support in Marx's writings, it is by no means clear on the face of things why a Baconian (or

5 Cohen, *Marx's Theory of History*, pp. 22, 40.
6 Kolakowski, *Main Currents in Marxism*, pp. 412–13.
7 Kolakowski, *Main Currents in Marxism*, p. 413.

"Faustian-Promethean" anthropological project, involving the domination and manipulation of external nature to human ends, should not be implicit in these writings. Marx's statement that man "subjects the play of [nature's] forces to his own sovereign power"[8] is by no means an isolated utterance, and it certainly sounds Baconian; Marx even singled out Bacon for praise in *The Holy Family*.

Are we to conclude that Marx was a positivist after all (which he himself denied)? That his views of nature and humanity are simply inconclusive or inconsistent? Or that in believing both that mankind is a natural species and that we shape or adapt nature to our own purposes, Marx was trying (as it were) to have it both ways – neither of which has acceptable implications? Answering these questions involves (in the first instance) specifying what Marx's anthropocentrism is and is not. In rightly indicating how distant it is from Engel's beliefs, Kolakowski fails to indicate that Engels was much closer than Marx to "Prometheanism". Engels, after all, maintained that "our mastery of nature consists in the fact that we have the advantage over other beings of being able to know and apply its laws", and that because "we are learning to understand these laws and nature more correctly … we are more and more getting to know, and hence to control, even the more remote natural consequences … of … our productive activities".[9] The relation of theory to practice here is straightforwardly instrumental. The laws of physical nature, because they are laws as Engels understood the term, admit only of being applied for the sake of control. It is a point of some importance that such control can be either of nature or of society. Natural science and social management exist for Engels on the same continuum. Human beings in his view are in the last analysis physical objects whose motion is governed by the same general laws that regulate the motion of all matter. Alfred Schmidt tersely observed (of Engels not Marx) "the fact that human history is made by beings endowed with consciousness is nothing more than a factor that tends rather to complicate the matter".[10] Purpose, practice and human thought itself are in Engel's view complex forms of motion, about which lawlike statements may be made. Human history and human thought are special fields of play for nature's general laws of motion and development. This is why, on the one hand, the "government of persons" (in the St-Simonian phrase Engels so readily appropriated) can give way without undue difficulty to the "administration of things". Either one is simply a matter of technique; slippage from one to the other is unproblematic because each is viewed instrumentally. Either we control nature or are controlled by it. Subjection to nature gives way to domination of nature, this being what human history comports; as in G.A. Cohen's account, and as in the story of the sorcerer's apprentice, "master demons" become "willing servants".

There is more to object to in this picture than its evident apocalyptic dualism. (Indeed, one of the problems in interpreting Engels, or for that matter G.A. Cohen, is how this dualism can be reconciled with what Kolakowski identified,

8 Karl Marx, *Capital*, Harmondsworth, Penguin Books, 1976, vol. 1, pp. 283–4.

9 Friedrich Engels, *Dialectics of Nature*, New York, International Publishers, 1940, pp. 292–3.

10 Alfred Schmidt, *The Concept of Nature in Marx*, London, Verso/NLB, 1971, p. 191.

correctly, as Engel's "naturalistic evolutionism".) If domination-and-control philosophies of nature all too easily lead into domination-and-control philosophies of human nature and society – and I see no reason to doubt this general proposition – then Engels's views have repressive, even authoritarian implications. Terence Ball has argued persuasively that "there is a logical link between positivist meta-science and the view that social relations are best managed by technical experts and administrators".[11] This helps explain why the task this book has undertaken matters to an understanding of Marx's political thought. Much (if not all) recent Marx scholarship persists in implying, or stating outright, that thanks to his (alleged) positivism and his (alleged) technological determinism Marx could not have avoided an instrumentalist, thus implicitly authoritarian, standpoint.[12] Since the historical links between post-Marxian Marxism and authoritarianism are not in doubt, and (as we have seen) take some disentangling, there is every reason to question the extent of their theoretical grounding in Marx's writings. Only by doing so, with as unjaundiced an eye as we can bring to bear, can we set about deciding whether the repressive aspects of post-Marxian Marxist regimes are inherent or inscribed in Marx's writings, or were added later.

Nature and human nature

Not all of Marx's recent interpreters subscribe to the view that, whatever he said he was, he was not a positivist. That Marx believes in the domination and manipulation of nature, however, remains virtually unquestioned. It will be disputed here, for this essay proposes to interrogate and contest both claims

11 Terence Ball, "Marxist Science and Positivist Politics", in Terence Ball and J. Farr, ed., *After Marx*, Cambridge, Cambridge University Press, 1984, p. 236.

12 There is however more confusion than unanimity among recent commentators. William Shaw's *Marx's Theory of History* (Stanford, Stanford University Press, 1978) restates the technological determinist position in (pp. 52–82). Roy Bhaskar, "On the Possibility of Social Scientific Knowledge and the Limits of Naturalism", in *Issues in Marxism* (ed. John Mepham and David Hillel-Ruben, Atlantic Highlands, Humanities Press, 1979) argues for Marx's "anti-positivist naturalism" even though "there is (or can be) an essential unity of method between the natural and the social sciences" (p. 108). Different kinds of corrective are provided by David Hillel-Ruben, *Marxism and Materialism* (Brighton, Harvester and Atlantic Highlands, Humanities Press, 1977), and Russel Keat and John Urry, *Social Theory as Science* (London, RKP, 1975). Keat and Urry think that Marx was a realist *and* a naturalist *and* a positivist because he failed to generalize before examining the material world. Derek Sayer's *Marx's Method: Ideology, Science and Critique in 'Capital'* (Atlantic Highlands, Humanities Press 1979), regards Marx as a naturalist who, since he uses "essentialist" categories, is thus not a positivist. See also Chapter 1, above, and *After Marx*, ed. Ball and Farr, Cambridge, Cambridge University Press, 1984, particularly Part 3, 1984 (pp. 213–79), for further arguments that Marx was not a positivist. On the other hand, John McMurtry's *The Structure of Marx's World-View* (Princeton, Princeton University Press, 1979) regards technology as "the Marxian Providence", which has replaced Divine Will as the arbiter of history (!) (p. 71). Albrecht Wellmer's *Critical Theory of Society* (New York, Herder and Herder, 1971) and Helmut Fleischer, *Marxism and History* (New York, Harper, 1973) simply collapse Marx into Engels, which Alfred Schmidt's *The Concept of Nature in Marx* (London, Verso/NLB, 1971) finally fails to do. Schmidt's book inspired the present essay, which proposes to help Schmidt cut through the welter of confusion outlined, and I hope not caricatured, above.

about Marx by looking closely at what he says about nature and human nature. In what follows I shall argue that whenever Marx deals with nature and artifice he advances a distinctively non-Baconian speculative anthropology. This anthropology, while it is in a certain sense productivist, it is not at all instrumentalist in the sense outlined above. Although it is basically historical in scope, Marx's speculative anthropology is concerned inter alia with the ontological foundations of scientific inquiry. It suggests a substantive alternative to positivism and Baconianism alike. Since Marx failed to provide a fully developed philosophy of nature to accompany his speculative anthropology, we may question whether his alternative is provided rather than suggested. But while Marx's speculations on nature and artifice are in some ways incomplete we can and must, on the basis of what Marx wrote, distinguish Marx's Marxism from instrumentalism either of the Baconian or of the Engelsian variety.

Because Kolakowski fails adequately to characterize what he correctly identifies as Marx's "anthropocentrism", which in reality is anthropocentrism of a very particular kind, he misprizes it to the extent of confusing it with a "Prometheanism" which is, as we have seen, more properly the province of Engels. Turning to Marx, whose own anthropocentrism now needs characterizing, involves standing back and taking our bearings. Marx frequently refused to separate nature from humanity categorically, insisting that humanity is seen as one natural species among others. He specified that what connects human beings with nature, historically and anthropologically, is human labour. Nature is thus often surveyed through the human labour expended on it. But it follows from none of this that such labour is necessarily instrumental or manipulative or dominating in character. The capacity of the human species to render the material world congruent with conscious human purposes, for the sake of fulfilling human needs, surely would be manipulative and nature-dominating if the needs and purposes to be fulfilled were themselves unnatural in character. That Marx himself acknowledged this point is clear, as we shall see, from some of his characterizations of capitalism. But there is no reason to leap to the conclusion that all human needs and purposes are unnatural in anything like the same sense. Marx himself seems never to have entertained such an idea even as a hypothesis, let alone a conclusion. To the contrary, he consistently regarded human needs and purposes as being prima facie natural in character. This is why in the 1844 *Manuscripts* Marx insisted that human activity on nature be seen not manipulatively but metabolically. Marx says in *Capital*:

> Labour is first of all a process between man and nature, a process by which man through his own actions, mediates, regulates and controls the metabolism between himself and nature. He confronts the material of nature as a force of nature. He sets in motion the natural forces which belong to his own body, his arms, legs, head and hands, in order to appropriate the materials of nature in a form suited to his own needs.[13]

13 Marx, *Capital*, pp. 283–4.

The human species is not alone in possessing the capacity to render (aspects of) the natural world congruent with its needs. Other animal species confront the materials of nature as forces of nature in very much the same way. What distinguishes human work from that of other species is its free, conscious character.

> The animal is immediately identical with its life-activity. It does not distinguish itself from it. It is its life-activity. Man makes his life-activity itself the object of his will and consciousness. He has a conscious life-activity. It is not a determination with which he directly merges. Conscious life-activity directly distinguishes man from animal life-activity. It is just because of this that he is a species-being.[14]

"Species-being" means natural being of a certain kind. Labour, as John Locke had recognized, is our natural means of self-expression. The striking feature of Marx's characterization of labour for our present purposes is that what makes it human also and by the same token makes it natural. Nowhere in his discussions does Marx claim that "'natural' belongs to 'material' against 'social'" – G.A. Cohen could not be more wrong – or that nature be seen as a mere backdrop, obstacle or means to the attainment of human aims that are themselves non-natural. Marx instead was in effect posing a remarkably radical question, one that many of his commentators and followers have failed to confront. Why should human needs and our means of satisfying them be considered different in principle from those of any other species? Why should our hands, organs, dimensions, senses, passions be said to be any less natural than theirs?

If we apply ourselves to nature as natural beings, Marx's point is more anthropological or (if you will) anthropogenic than anthropocentric. It is not that people necessarily or always apply themselves to nature in a natural way. It is simply that in principle we can do so. If our labour is a natural force, it is possible to distinguish human activity from the logic of animal behaviour and survival by virtue of its conscious, intentional character without implying an external, manipulative stance that would oppose us to nature. This is precisely what Marx attempted to do.

> The universality of man is, in practice, manifested precisely in the universality which makes all nature his inorganic body – both inasmuch as nature is (1) his direct means of life and (2) the material, the object and the instrument of his life-activity. Nature is man's inorganic body – nature, that is, insofar as it is not itself the human body. Man lives on nature … nature is his body, with which he must remain in continuous intercourse if he is not to die. That man's spiritual and physical life is linked to nature means simply that nature is linked to itself.[15]

Nature mediates itself with itself through human labour, just as labour mediates itself with itself through nature. Nature establishes and helps define our

14 Karl Marx, *Economic and Philosophical Manuscripts of 1844*, Moscow, Foreign Languages Publishing House, 1961, p. 75.

15 Marx, *Manuscripts*, p. 74.

species-being. When we labour, turning the rest of nature to account, we affirm ourselves as a species; we develop our physical and mental energies; we experience ourselves and begin to feel conscious of ourselves. We are acting, or can act, spontaneously and voluntarily, without external compulsion. These characteristics of human labour are, in a sense Marx sought to establish, natural to us as a species. The human features of our labour do not deny but affirm our natural status. It is striking, however, that none of them can be said, or is said by Marx, to characterize animal behaviour, even of the learned, instinctive kind. Marx's concern to distinguish (human) action from (animal) behaviour does not tempt him, as it has tempted some of his readers, to limit the use of the world "natural" to the latter. While there are types of behaviour human beings can be said to share with members of other animal species ("eating, drinking, procreating"), these, once they become "sole and ultimate ends" of human existence, turn into animal functions Marx does not shrink from terming "unnatural" for us – though they would not be unnatural even as sole and ultimate ends for members of other animal species.[16] If they are not ends in themselves in this sense for us, these too are genuinely human functions that are natural to us as a species. Capitalism, far from completing the conquest of nature, as Cohen thinks, inverts our relationship with nature in this and other ways. It makes means of life, like "eating, drinking, procreating" appear as the goals of each and every act of production people undertake. If, as Marx says, the animal thus becomes human and the human animal, this is a historically specific reversal of natural priorities for which capitalism and its defenders are roundly to be indicted – indicted, that is, by Marx not Cohen.

Natural and unnatural acts

That objectification, the turning to human account of nature, has taken an estranged form under capitalism is not allowed to obscure Marx's basic point that objectification through labour is a natural expression of our species-being. "Nature which comes to be in human history – the genesis of human society – is man's real nature … nature as it comes to be in industry, even in an estranged form, is true, anthropological nature."[17] This enables us to press Marx still further. When we labour, some of what we produce is not consumed immediately but put aside for future use. We are able to work beyond the limits imposed by immediate necessity, in this and other ways. Among the more lasting objects we produce are tools, implements, instruments of labour and other means of production which become part of the work environment for ourselves and others at some future time. All these features of human labour make it social. But they need do nothing to rob it of its natural character. Even though, particularly in more modern times, "the object the worker directly takes possession of is not the object of labour but its instrument", this does not displace nature. Instead, "nature becomes one of the organs of his activity, which he annexes to his own

16 Marx, *Manuscripts*, p. 73.
17 Marx, *Manuscripts*, p. 110.

bodily organs, adding stature to himself in spite of the Bible".[18] Human labour is to be distinguished from animal activity not because it is collective, cumulative or technological in character, but because we alone among animal species can bring to bear conscious intentionality to our projects and can thus "freely confront" what we produce. As Marx puts it,

> We presuppose labour in a form in which it is an exclusively human characteristic. A spider conducts operations which resemble those of a weaver, and a bee would put many a human architect to shame by the construction of its honeycomb cells. But what distinguishes the worst architect from the best of bees is that the architect builds the cell in his mind before he constructs it in wax. At the end of every labour process, a result emerges which has already been conceived by the worker at the beginning, hence already existed ideally. Man not only effects a change of form in the materials of nature; he also realizes [*verwirklicht*] his own purpose in those materials. All this is a purpose he is conscious of.[19]

Even the division of labour does not negate labour's natural characteristics. What puts people in productive relationships is, in the first instance, "only the differences between their needs and their production", differences which are, prima facie, "natural differences among individuals". Insofar as these "form the motive for the integration of these individuals, for their social interrelation as exchangers, in which they are stipulated for each other as, and prove themselves to be, equal, there enters, in addition to the quality of equality, that of freedom".[20] While this may seem a surprising claim, coming from someone who was so bitterly critical of the capitalist division of labour, there is no real inconsistency here. Marx, without denying the natural basis of the social division of labour, was concerned to provide a criterion by which the specific form taken by the division of labour at various historical points might be judged. If people's natural differences, their different skills, talents and aptitudes, form the basis of the division of labour, then human equality is acknowledged in the sense that people's real, natural differences are respected. If these differences are neither respected nor, in fact, articulated by the specific form taken by the division of labour in society, as in the capitalist division of labour, then such equality and freedom are subverted. Even though other forms of social organization could presumably be condemned along the same lines, it is capitalism that Marx indicts for having obliterated real, natural human differences for the sake of producing more and more commodities.

It follows from this that if "free conscious activity is man's species-character",[21] as Marx thought, this means that not all human activity somehow is necessarily free or conscious in the required sense. It means that our species-

18 Marx, *Capital*, p. 285.
19 Marx, *Manuscripts*, pp. 283–4.
20 Karl Marx, *Grundrisse*, Harmondsworth, Penguin Books, 1973, p. 242, cf. pp. 242–5 in general.
21 Marx, *Manuscripts*, p. 75.

character can in various ways be acknowledged or subverted. To see this we should look more closely at what our species-character comports, bearing in mind throughout that whatever happens to it in specific cases, Marx regarded it as prima facie natural in character. Marx says in the 1844 *Manuscripts* that:

> It is only because [man] is a species-being that he is a conscious being, i.e. that his own life-activity is an object for him. Only because of that is his activity free activity. Estranged labour reverses this relationship, so that it is just because man is a conscious being that he makes his life-activity, his essential being, a mere means to his existence.[22]

What does Marx mean by this? When we work, we make our ideas, prefigurations and capacities real by giving them form, substance and materiality. We objectify ourselves (or something about ourselves) in working on the material world, effecting changes or modifications in its structure. In so doing, we are producing far more than mere objects. We realize (something about) ourselves as we objectify (something about) ourselves. We become more aware of our capacities as we make them or see them made concrete. The intentionality we can bring to bear on our work transforms behaviour into action and transforms us as actors at one and the same time. In this way a far-reaching kind of reciprocal process is set in motion. This process is not something superimposed upon a pre-existent or surpassed metabolic relationship with nature – this relationship is not a stage – but instead is its expression or working-out.

Marx's claim, which sounds grandiloquent, that "the entire so-called history of the world is nothing but the begetting of men through human labour",[23] should be understood in this sense. When we work, we are able to realize and recognize ourselves (or something about ourselves) in what we create. In the long run, we produce a store of techniques and experiences, a bank (if you will) on which we and our progeny can draw, re-draw and (perhaps) over-draw. We produce expansively. We produce new forms of social and political organization to accompany new ways of producing; we produce social forms of symbolic expression; we produce everything that we know of as constituting our humanity – science, art, morality, speculation, politics and economics.

Marx's point is of course not that doing these things somehow makes us godlike; it is simply that doing these things is natural to us as a species. But even if we grant him this point, problems remain. They stem from the commonsensical observation that today, living as we do in what is still sometimes (and optimistically) called "late capitalism", we inhabit a highly artificial environment. The setting for our various enterprises easily enough appears artificial to the point of sheer contrivance. Yet it would appear from the foregoing account of Marx that what we commonly consider artificial might in some more fundamental sense be natural as well, or instead. For instance, the work we do today,

22 Marx, *Manuscripts*, p. 75.

23 Marx, *Manuscripts*, pp. 113–14.

to stretch a point, could be considered as natural to us as the actions of our hunter-gatherer forebears were to them. This point could indeed be stretched further still. Since our ancestors presumably had more immediately pressing things to do than speculate about their relationship with something their descendents were to term "nature", our various late capitalist artifacts might be comprehended as being more natural (to us) than our prepotent ancestors' hides and pelts were (to them). We are able to be more conscious than they can have been of what a relationship with nature might mean. The risk here is of collapsing into relativism (or into sheer absurdity). We would then be unable to condemn capitalism for its blithe, roughshod disregard for natural or ecological limits, or for its unprecedented, ominously artificial character. We do not need to make of Marx an ecologist *avant la lettre* to see that he was engaged in criticizing capitalism for (broadly) similar reasons. This means that there is no good reason to stretch anything to a point of relativism. If we take our cue from the concepts of species-being and alienation, as Marx thinks we should, a clear distinction emerges. Highly artificial stages of civilization, which involve a highly complex division of labour and an elaborate organization of technological resources, may make it seem as though nature has retreated, in such a way that we depend less on nature than on other people and on the artifacts that surround us. But this is so only up to a point. The process by which we have reached such a stage has taken us away from nature or rendered us artificial only to the extent that it has offended against or subverted the natural character of our labour, as has alienation in the case of capitalism. In other ways, the process by which we have arrived at such a stage is an expression, not a denial, of the natural character of our labour. Behind this distinction (which is, finally, the distinction between alienation and objectification), is another, more deeply-rooted discrepancy: that between the enormous power (technical, economic, social, political) that the human species has elaborated in the course of its development, and humanity's continuing, palpable dependence, suffering and exploitation.

If labour is reduced to a means of producing exchange-value, its human or natural qualities (like those of the labourer) are lost or obscured. If nature outside us, as part of the same reduction, becomes relevant to human purposes only insofar as it too can be yoked to and manipulated by capitalism's productive apparatus, it is likely to become interpreted instrumentally or antagonistically. What Alfred Schmidt derisively but accurately identified as Engel's "famous sudden leap … from the realm of necessity to the realm of freedom"[24], is an expression of this antagonism, not its solution. Nature to Engels was necessitarian; freedom could only be freedom from it or over it. Because Marx saw nature so differently, he was much less apocalyptic than Engels. His metabolism of nature and humanity at no point involved the sheer incorporation of nature by humanity, whatever G.A. Cohen may think; and his (Marx's) discussions of necessity and freedom, as Schmidt goes on to point out, stipulate that there are always natural necessities or limits to our activity's scope and scale, boundaries behind which we are always to some degree confined. While Engels virtually

24 Schmidt, *Concepts of Nature*, p. 135.

collapsed the distinction between freedom and necessity and that between nature and artifice into one distinction, Marx sought to delineate a position from which so clumsy a synthesis would be impossible. Since his views of science help make this clear, it is to those that we must now turn.

Nature and natural science

Nature begins to exist for humanity as *matériel*, or even as a category we use in trying to make sense of the world, only with the advent of human activity within natural processes. It is people who give point, purpose and meaning to nature. Marx, as we have seen, in effect thanked Darwin for having separated (extrinsic or intrinsic) purpose from natural processes. But Marx did not do so in order to reintroduce extrinsic purpose in human guise. Human purposes, the only purposes nature can be said to have, are themselves natural, or are capable of being so. By extension, the human senses and cognitive faculties that apprehend the material world are intrinsically natural to those people who apprehend it. If this is so, if, in other words, the continuum of nature does not stop short at the arbitrary barrier of the human senses and cognitive faculties, the implications for our understanding of the ontological basis of natural science are radical indeed. Natural science cannot be what Engels, for one, thought it was (at a very basic level indeed): the observation of, and drawing of lawlike conclusions about, an external, material reality that exists independently of the observer it confronts. Marx was concerned to deny the basis of such confrontation and such externality alike. He claimed that the distinction between pre-social nature and socially-mediated nature "has meaning only insofar as man is considered to be distinct from nature". But if nature is not independent of human aims, projects and purposes in the required sense, scientific truth cannot be the correspondence of human perceptions and judgments to an independently-existing "reality". Nature as we know it is the nature we have adapted and fitted to our various aims and purposes. This means that our various, successive adaptations and observations are not to be regarded as forays into the uncharted territory of a categorically separate realm of reality that operates according to its own, necessitarian laws – laws we can but confront, interpret and apply within our own, social realm. Our actions within and observations of nature are themselves natural expressions of our humanity. Marx says,

> Industry is the actual historical relation of nature, and therefore of natural science, to man. If therefore industry is conceived as the exoteric revelation of man's essential powers, we may also gain an understanding of the human essence of nature or the natural essence of man.[25]

Lest it be thought that such utterances are confined to Marx's earlier writings, Marx, in the *Critique of the Gotha Program*, insisted all over again that nature is

25 Marx, *Manuscripts*, pp. 109–10.

"the primary source of all instruments and objects of labour" and that labour itself, under all forms of production, "is only a manifestation of a force of nature". On the one hand, "nature taken abstractly, for itself, separated from man, is nothing for man"; on the other hand, "nature, as it unfolds in human history, in the genesis of human society, is man's real nature".[26] More pointedly still, with respect to natural science, Marx's 1881 *Notes on Adolph Wagner* reiterated his claim that humanity's various relationships with nature are not primarily theoretical but instead are, in the first instance, practical and modificatory.

> Men do not, in any way, begin by "finding themselves in a theoretical relationship to the things of the external world". Like every animal, they begin by eating, drinking, etc. That is, not by "finding themselves" in a relationship but by behaving actively, gaining possessions of certain things in the external world by their actions, thus satisfying their needs. (They thus begin by production.)[27]

This passage should serve to remind us of Marx's "Theses on Feuerbach", where the "old materialism" of Feuerbach and others is excoriated for concerning itself with the interaction of external physical forces that are impervious to the influence of human purposes. Not only is our practice, as with Vico, our guarantee of knowing the reality we have made, but we are actors in and authors of our own drama in the additional sense that we may have no real knowledge of the world without practical activity on it.

If, in the words of the second "Thesis on Feuerbach", "the dispute over the reality or non-reality of thinking that is isolated from practice is a purely scholastic question", this is as true of scientific thinking as of any other kind. What Marx abhorred about idealism was not its constitutive side, which he can be said to have extended to cover labour, but its abstract, speculative side. What Marx called "the abstract materialism of natural science"[28] is deficient in the same sense. The truths of natural science, far from being logically prior to history and society, and far from providing any model for truths about society, are themselves dependent on the social purposes which provide the climate and context for the scientist's enterprise. "Genuine science" has to proceed from "sensuous need"; "one basis for life and another for science is a priori false".[29] The crucial distinction in Marx's thought is neither that between freedom and necessity, nor that between nature and artifice, nor yet that between materialism and idealism. (A stress on activity and a materialist epistemology are not the same thing; the "Theses on Feuerbach" map out the difference.) The crucial distinction is between "abstract" speculation, contemplation and theorizing on the one hand, and practical reality, history, society, activity and the inquiry that is appropriate to these realms on the other. This distinction, unlike the others, is

26 Karl Marx, 'Critique of the Gotha Program', in *Marx-Engels Selected Works*, Moscow, Foreign Languages Publishing House, 1962, vol. 2 (hereafter *MESW*), p. 18; Marx, *Manuscripts*, p. 74.

27 Karl Marx, *Texts on Method*, ed. Terrell Carver, Oxford, Blackwell, 1975, p. 190.

28 Marx, *Capital*, p. 272, n. 2.

29 Marx, *Manuscripts*, p. 111.

applicable to natural science; the constitutive function of human thought and action on the world arises not from anything within the realm of thought, as Hegel had believed, but from people's life in the world. What follows is not that nature is to be regarded as an inhuman, necessitarian realm to whose laws people are sooner or later subject, as Engels thought it was. Nor is the world a kind of stage on which we as supine spectators can or should watch natural processes unfold autonomously, as again Engels considered it to be. Engels understood "dialectics" to be "the science of the general laws of motion and development of nature, human society and thought". He believed that "the dialectic in our heads is in reality the reflection of the actual development going on in the world of nature and of human history in obedience to dialectical forms". People's cognitive links with nature consist in their subjection to general laws of nature of which human history and the laws of thought are but particular expressions. Thoughts are identified as physiological regularities of the brain; everything in the last analysis is an instance of matter in motion. Since "the unity of the world consists in its materiality", we can deduce the "dialectics" of society from the "dialectics of nature" by using "a 'system of nature' [like that of d'Holbach but] sufficient for our time".[30] It should be clear how remote such thinking is from Marx. Marx did not seek to deduce the dialectics of society or history from those of nature, nor least because he did not regard these "dialectics" as boundlessly accommodating, in the Engelsian manner. Marx – perhaps (who knows?) sensing, as Engels never did, that "matter" could itself be seen as a metaphysical category – consistently refused either to use the term "dialectics" or to argue from matter, on the grounds laid down in the "Theses on Feuerbach", and in *The German Ideology*.

> Feuerbach refers particularly to the view of natural science, he mentions secrets revealed only to the eyes of the physicist or chemist; but where would natural science be without industry or trade? … Even the objects of the simplest sensuous certainty are given to him only through social development, industry and commercial relations. The cherry tree, like all fruit trees, was transplanted into our zone [Western Europe], as is well known, by commerce; it was only by virtue of this action of a determinate society at a given time that it was given to the "sensuous certainty" of Feuerbach … even pure natural science is provided with an aim, as with its material, only through trade and activity, through the sensuous activity of men.[31]

Marx's emphasis, in Terrell Carver's well-judged words, "was always on human productive activities in a social and material setting, which men and

30 Friedrich Engels, *Anti-Dühring*, Moscow, Foreign Languages Publishing House, 1962, p. 504; cf. Engels, *Dialectics of Nature*, pp. 314, 179; Engels to Schmidt, 1 November 1891, in Karl Marx and Friedrich Engels, *Selected Correspondence*, Moscow, Progress Publishers, 1975, p. 590; Engels, *Anti-Dühring*, pp. 65, 36–7; Karl Marx and Friedrich Engels, *Selected Works in One Volume*, New York, International Publishers, 1986, p. 622.

31 Karl Marx and Friedrich Engels, *The German Ideology*, Moscow, Progress Publishers, 1962, p. 58.

women alter as they develop their productive powers. This (is) obviously different from Engel's insistence on the primacy of matter-in-motion, whose laws supposedly underlie and unify the science of nature, history and 'thought'".[32] There is no counterpart in Marx's writings to Engel's breezy assertion that "in nature, amid the welter of innumerable changes, the same dialectical laws of motion force their way through the history of the development of human thought and gradually rise to a consciousness in the mind of man".[33]

What we do find in Marx's writings is a very different emphasis on the development of human needs in and through human history. Since these needs are the motives of our production and our natural science alike, the extent to which they too might be considered natural is relevant to the themes of this book and awaits discussion below.

Human needs and human nature

If Marx saw freedom as the ability to render the material world congruent with human purposes, and to subject it to human needs, this view already had a long vintage by Marx's time. His own strictures about the shortcomings of the "old materialism" notwithstanding, the belief that the transformation of society in accordance with human goals is the ultimate test of human freedom has deep roots in the materialist tradition that long predates Marx, and to which he made constant reference. Marx in his doctoral dissertation, for example, praised Epicurus over Democritus because Epicurus's theory permits human intervention in the material world. The Epicurean view of man was of a creature who belonged to a world governed by a chain of physical causes, but who could initiate action on his own behalf and modify the world to his own purposes. Unlike Democritus, who was concerned with the atom as a pure, "abstract" category, and with atomism as a hypothesis explaining external nature *tout court*, Epicurus sought to understand nature in order to rid humanity of its belief in spiritual bondage and teach people a better way of life. Accordingly Epicurus, "the greatest Greek *Aufklärer*" (as Marx so aptly termed him), regarded science as something that would include and not – as with Democritus – exclude human consciousness and action in the world. Marx saw Epicurus and Democritus not as differing in degree but as standing diametrically opposed "in all that concerns truth, certainty, application of this science, and all that refers to the relationship between thought and reality in general".[34] (Engels, with his own billiard-ball atomism, and for that matter his assumption of the priority of natural scientific explanations, is *mutatis mutandis* closer to Democritus.) Marx belongs to the side of materialism that stressed human concerns – knowledge, power, needs – and

32 Terrell Carver, "Marx, Engels and Scholarship", *Political Studies*, xxxii, 1984: p. 253; cf. Terrell Carver, *Marx and Engels: The Intellectual Relationship*, Brighton, Harvester, 1983, p. 134.

33 Engels, *Anti-Dühring*, pp. 15–16.

34 Karl Marx and Friedrich Engels, *Collected Works*, Moscow, International Publishers, 1962, vol. 1, p. 38.

regarded science as being justifiable insofar as it is of use as a specifically human concern among other specifically human concerns. His arguments against Feuerbach should be seen in the light of this placement. Marx certainly saw Feuerbach's materialism as one-sided, contemplative, passive and ultimately self-defeating; and for these very reasons he saw it also as mechanical, concerned with the interaction of physical forces and impervious to the influence of human goals. Marx argued accordingly that those socialists who, following some of the precepts of the French enlightenment, regarded social transformation as possible only through the manipulation of the educational environment, in order to turn Lockean sensationalist psychology to good account, were arguing incoherently. Circumstances do not change themselves; people change them. It is the purpose, indeed the very definition of human activity to work on the external world and to change it consciously, as we have seen; and this has to do not with a "Promethean" flexing of human powers, but with the expression of human needs.

Marx, who was in no way reluctant to disinter and resuscitate what was already an old socialist slogan – "to each according to his needs" – and to do so in texts as far apart chronologically as *The German Ideology* and *The Critique of the Gotha Program*, believed in the dynamism of human needs as the index and measure of human history. The *Critique* in particular makes it clear how expansive was the notion of "needs" Marx had in mind.

> In a higher phase of communist society, after the enslaving subordination of the individual to the division of labour, and therewith also the antithesis between mental and physical labour, has vanished; after labour has become not only a means of life but life's prime want; after the productive forces have also increased with the all-round development of the individual and all the springs of co-operative wealth flow more abundantly – only then can the narrow horizon of bourgeois right be crossed in its entirety and society inscribe on its banners: "From each according to his ability, to each according to his needs!".[35]

Marx is suggesting not that the liberal-bourgeois values of liberty, equality, fraternity are imperfectly realized in capitalist society and await their completion, but that because they are values of a particular kind – abstractions which as such cannot comprehend or take account of individual differences or particular human needs – they should be dispensed with altogether; the "narrow horizon of bourgeois right" is to be "crossed in its entirety". To contribute to one's community on the basis of one's ability and to receive from that community on the basis of one's needs, is a formula for justice in the distribution of wealth that is altogether superior to the bourgeois principle of equality, which has nothing in common with Marx's understanding of the term, and is nothing but a bourgeois right to correct a bourgeois wrong.

Like his understanding of the human labour that realizes them, Marx's understanding of needs was expansive, not limiting. If technological progress and

35 Marx and Engels, *Selected Works*, p. 24.

cumulative adaptation of nature should entail an increase in the number or quality of human needs that are then to be satisfied, this is all to the good, since the dynamism and expansiveness of needs has always been a leitmotif of human history, and by extension will always continue to be one. It is therefore unsurprising that Marx constantly lampooned those (on the left as well as the right) who attacked capitalism on grounds derived from the pre-industrial idyll it had supposedly disrupted and subverted. The *Manifesto* is just the most obvious text mocking the Babouvists and other "reactionary socialists", who earnestly and self-righteously recommended what Marx called elsewhere "the abstract negation of the entire world of culture and civilization, the regression to the unnatural simplicity of the poor and crude man who has few needs and who has not only failed to go beyond private property, but has not yet even realized it".[36] Once again, Marx's designation of such simplicity as "unnatural" should give us pause, since like so much else in his writings it too suggests that culture and civilization are either natural, or not unnatural, or (at the very least) not necessarily unnatural. It suggests in other words that Marx was not Rousseau. Marx did indeed maintain that "industry is … the open book of man's essential powers" and that socialism, which would be established only once the forces and relations of production had been developed to their highest point, would see a society based not on poverty, crudeness and austerity, nor yet on wealth considered as the mere antithesis of such simplicity, but on "the rich human being and the rich human need".

Marx believed in the necessity of contrasting a communism geared to the satisfaction of human needs with a capitalism which could promote only inhuman needs. Under communism, not capitalism, "the wealth of human needs" signifies "a new manifestation of the forces of human nature and a new enrichment of human nature". Compared with these the wealth (of a different and lesser kind) generated in and by capitalism (for some, not all) stands condemned: "The extension of products and needs becomes a contriving and ever-calculating subservience to inhuman, sophisticated, unnatural and imaginary appetites. Private property does not know how to change crude need into human need."[37] In this way Marx castigates the "unnatural", "inhuman" needs fostered by capitalism while preserving intact his scorn for the age-old prejudice against civilization and luxury as such – a prejudice exemplified only most recently by Rousseau, Babeuf and others. Culture, as far as Marx was concerned, becomes unnatural only under the specific conditions he associated with capitalism. Even wealth, once its "bourgeois form is stripped away" is nothing but "the universality of needs, capacities, pleasures, productive forces", nothing other than "the absolute working out of [humanity's] creative potentialities".

Human needs and powers are closely associated. Needs are "not merely anthropological phenomena in the [narrower] sense, but truly ontological affirmations of being".[38] Human capacities exist *in potentia* as needs that require the

36 Marx, *Manuscripts*, p. 100; cf. Marx, *Grundrisse*, pp. 488–9.
37 Marx, *Manuscripts*, p. 116.
38 Marx, *Manuscripts*, p. 76.

material world, which provides or can provide the means of their satisfaction. We require external objects if we are to subsist. As Marx put it, in the 1844 *Manuscripts*, "[the] worker can produce nothing without nature, without the sensuous external world. It is the material on which his labour is manifested, in which it is active, from which and by means of which it produces."[39] More than mere survival is involved, however, since all aspects of the development as well as the maintenance of the self require such external objects. Marx, with this very generality in mind, included among human sensuous needs, or among those activities that require a material object, not just the five senses, "seeing, hearing, smelling, tasting, feeling", but also activities most of us would consider cognitive rather than sensuous – "thinking, observing, experiencing, wanting, acting, loving" the "so-called practical senses".[40] All are capacities dependent upon the provision of objects appropriate to their exercise; without such provision the capacities or propensities in question could atrophy. But the extensiveness of the list suggests that Marx, here as elsewhere, intended to distinguish humanity from other natural species who also depend on nature for the objects of their needs, and who also produce some of the means for their subsistence, and that he proposed to make this distinction on grounds of freedom and consciousness.

Our human needs express our capacity to transcend the limits of material existence and modify or make our mark upon (some aspect of) the external world by shaping it in accordance with freely chosen ends. Marx's stress on objectification as the characteristic feature of human creativity is in some sense "productivist" or "expressivist", but it is not for this or any other reason instrumentalist; it certainly distinguishes Marx from the mechanistic materialism that had characterized the eighteenth-century French enlightenment. The "new materialism" celebrated aphoristically in Marx's "Theses" on Feuerbach avoids the mechanical determinism of some aspects of the French enlightenment along with their man-machine theories of human nature.

Human needs have to do not with the power of physical objects and processes over people but with people's power over the physical world. Needs express their self-conscious subject, part of whose self-consciousness consists in knowledge of the degree of dependence on the material world, knowledge of the limits of freedom. Autonomy – in Marx as, *ceteris paribus*, in Hegel's celebrated master-slave set-piece in *The Phenomenology of Spirit* – is measured, and only has meaning when it is measured, against dependence, a degree of which, far from being antithetical to freedom (as it was for instance to Engels), is the medium for the existence of freedom.

In *The German Ideology* Marx, starting from the materialist premise that "men must be in a position to live in order to 'make history' ", and that life involves first of all the satisfaction of material needs, "eating … drinking, housing, clothing and various other things",[41] isolated these needs as crucial to

39 Marx, *Manuscripts*, p. 70.

40 Marx, *Manuscripts*, p. 73.

41 Marx and Engels, *The German Ideology*, p. 39.

the historical transition from primitive to civilized humanity. There is primitive subsistence as a need, the satisfaction of which leads to the production of new needs which in turn lead to new social relations. Patricia Springborg has sensitively pointed out that "Marx sees these [needs] as something more than historical stages in a descriptive anthropology – as with Rousseau, they constitute analytic categories whose logic is proven by their extension in history".[42] Historical progress, as the *Grundrisse* also maintains, is to be seen in light of the unfolding of needs alongside that of productive forces geared to their satisfaction. Even capitalism, which in one way inverts needs, turning them inside out, in another way has a long-term *mission civilisatrice*, as it were despite itself, and even this ultimate civilizing effect is borne by socially determined needs. There is perhaps a "cunning of reason", or even a kind of "hidden hand" involved in this overall process, as Springborg deftly indicates; but this should not blind us to what the process itself entails:

> the cultivation of all the qualities of the social human being, production of the same in a form as rich as possible in needs, because rich in qualities and relations – production of this being the most total and most universal possible social product, for, in order to take gratification in a many-sided way, he must be capable of many pleasures [*genusfähig*], hence cultured to a high degree…[43]

Springborg points out Marx's willingness here and elsewhere to generalize "a theory of the dynamics of culture as a tissue of structures and institutions which are built up around the creation and satisfaction of needs".[44] Earlier theorists – Rousseau, Lucretius, Seneca – based their indictments of progress on an assumption that people by an act of will or judgment could choose not to succumb to a life governed by the pursuit of a widening range of material benefit. Marx made no such assumption and thought that those who did failed to acknowledge the casual origins of needs in society:

> Whether a desire becomes fixed or not, i.e., whether it contains exclusive [power over us] … depends on whether material circumstances … permit the "normal satisfaction" of this desire and, on the other hand, the development of a totality of desires.[45]

Yet what Marx had in mind was not a one-way pattern of determination but the progressive creation of a world of material objects as a natural expression of humanity's species-being. The "labour process", presented "in its simple and abstract elements" is "an appropriation of what exists in nature for the requirements of man. It is the universal condition for the metabolic interaction between

42 Patricia Springborg, *The Problem of Needs and the Critique of Civilization*, London, Allen & Unwin, 1981, p. 101.
43 Marx, *Grundrisse*, pp. 409–10.
44 Springborg, *Problem of Needs*, p. 103.
45 Marx and Engels, *The German Ideology*, p. 277.

man and nature, the everlasting nature-imposed conditions of human existence … common to all forms of society".[46]

Concluding remarks

G.A. Cohen's belief that with the advent of capitalism history, according to Marx, becomes a substitute for nature may be taken as a *point d'appui* for the present discussion, in which I hope to have shown that such positions misunderstand Marx's views of history, nature and capitalism alike. Cohen's position is admittedly extreme, but it is one that by virtue of its extremity casts light on the shortcomings of many less extreme interpretations of Marx. Capitalism according to Marx, whatever Cohen might think, is not finally to be regarded as a straightforwardly *terrible simplificateur*, ridding us of our natural limitations and sharpening our understanding of ourselves in such a way that our newfound clarity of vision will (somehow) help propel us into a new, even less naturally-bounded future. Marx's understanding of capitalism was demonstrably more complex. Capitalism is not all of a piece. In some ways it may be a harbinger of communism as Marx understood the term, but in other ways it poses obstacles to the attainment of such communism. In some ways it prefigures our future, as Marx saw it, while in others it clouds, not clarifies, our vision of what such a future might comport. More specifically within the compass of the present discussion, capitalism according to Marx does not signal the rolling-back of external natural boundaries to human emancipation in the sense that once we have "mastered" nature "insight into ourselves" will then proceed apace and come to the fore. Nature, whose boundaries are not according to Marx drawn up apart from humanity, is quite simply not external to humanity in the sense Cohen and others require.

Capitalism in Marx's view, far from clarifying or focusing it, has the effect of obscuring our insight into our own, natural character because it denies our species-being; because it inverts the relationship between our natural needs and the means we as a species have developed over our history to their satisfaction; and because it substitutes for objectification, a natural expression of our species-character, alienation and contrivance of the kind that offends against and negates our species-character. Seen in this light, what is wrong with the positivist and instrumentalist views Marx opposed is that they have no way of accounting for the difference between objectification and alienation. Indeed they provide no place for alienation per se at all. The distinction of alienation from objectification is however central to Marx's characterization of capitalism in particular, and by extension, to his characterization of human action (as opposed to behaviour) in general.

It could be argued at this point that while positivism of the Engelsian stripe has no way of distinguishing action from behaviour, or indeed of accounting for human activity per se at all – in other words that positivism is "the alienation of

46 Marx, *Capital*, p. 290.

reason", as Kolakowski once put it in a book of that title – Baconian instrumentalism (in some of its versions) does attempt to account for human action. Two observations are pertinent here. The first is that Baconian anthropology characterizes human action as that domination and manipulation of nature which is a, or the, leitmotif of human history or of our very existence as a species. I hope to have shown that Marx disputed, disparaged and rejected such characterizations. The second observation is also of broad application. Instrumentalist, Baconian and positivist views in various ways emphasize or privilege natural science or experimental method as a means by which the human species dominates and manipulates nature. I hope also to have shown that Marx's very different, rival anthropology was intended, inter alia, as an explanation of the ontological foundations of natural science that would render notions of the epistemological primacy of scientific method nugatory and beside the point. In all these related endeavours Marx was engaged upon staking out a position from which communism as he understood the term would and could relapse neither into a Rousseauian-Babouvist denial of progress, nor into an instrumentalist misapprehension of the character of human progress. I hope finally to have shown that Marx offered a workable alternative to all of these unappealing rival views – workable not in the sense that it answers every question a serious critic might have, but in the sense that it manages to reinstate humanity as a natural species (or agency), and to do so not because of capitalism but in its despite.

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