

*Feyerabend, Science and Scientism**Ian James Kidd***9.1 Introduction**

Paul Feyerabend (1924–1994) acquired a variety of epithets during the latter stage of his career. The most persistent is perhaps *Nature's* description of him as ‘the worst enemy of science’, later adopted as the title of an important collection of essays in his honour. The label encapsulates his bad reputation, at least within philosophy of science, which can be divided roughly into two aspects.

The first are criticisms of the actual or perceived content of his work, most usually that he was, at least at certain points in his career, anti-science, pro-pseudoscience and a radical relativist or perhaps post-modernist. Some of these can be easily rebutted. Considered closely, the putative ‘defences’ of astrology, parapsychology, witchcraft and alternative medicine turn out to be nothing of the sort (Kidd 2013, 2016a, 2018). His general strategy was to point out the epistemic failings of those scientists who dismissed such beliefs and practices without any properly informed understanding of them. Astrology was ‘bunk’, he argued, but one needs better arguments against it than those typically offered by those whose social authority owes to their elevated epistemic standing. In the case of relativism and other alleged philosophical sins, recent work by Martin Kusch (2016) and Lisa Heller (2016) tell a more complex story: the ultra-relativism of *Science in a Free Society* modulated, slowly, into those thirteen ‘relativistic theses’ in *Farewell to Reason*, most then rejected by the time of *Conquest of Abundance*. Similarly, there are no good reasons to regard him as a post-modernist, at least on three substantive characterisations of that capacious term (Kidd 2016b). As to the other charge – that Feyerabend was ‘anti-science’ – refuting that is the aim of this chapter.

The second aspect of Feyerabend’s bad reputation is less easily disposed of, since it is rooted in criticisms of his professional conduct. Certainly, polemic, rhetoric and a jocular tone are not to everyone’s taste, but there

are other, more serious complaints. Consider the rudeness and wilful vagary that often crept into his writing, the most egregious instance of which would surely be the third section of *Science in a Free Society* – the fieriest of his books – which reply to critics of *Against Method* and was named, by Feyerabend, ‘Conversations with Illiterates’. Eric Oberheim opens his book, *Feyerabend’s Philosophy*, with honest documentation of the rhetorical and provocative excesses, dubious self-testimonies and scathing tone and content of much of Feyerabend’s work, at least during the overheated writings of the late 1970s.

Since such failings are not in doubt, my aim is not to defend everything that he said, nor the ways that he said them. My stance on his work is one of critical sympathy, respecting both the principle of charity and the fact that Feyerabend often put considerable pressure upon it. We need to edit, amend and augment Feyerabend’s ideas, alert to his rhetorical and scholarly failings and their consequent interpretive problems, for many of which he was culpable. What we end up with is something that merits the label ‘Feyerabendian’, taking the best of what he offers, and refining or removing the weaker material. An important core theme of what we end up with is an enduring *anti-scientism*.

## 9.2 Critique

From the late 1960s onwards, an increasingly central feature of Feyerabend’s work was experiments with different ways of motivating and performing critical scrutiny of prevailing conceptions of science. By that latter term, I mean broad accounts of the nature, scope and value of science, such as Thomas Kuhn’s account of paradigms, Karl Popper’s falsificationism, Imre Lakatos’s methodology of scientific research programmes and other more modest efforts by less-esteemed *Theoretiker der Wissenschaft*. An important role for philosophy of science is to create such accounts, but also to subject them to critical analysis.

An unusually clear statement of Feyerabend’s conception of the aims of philosophy of science as a critical discipline is a 1976 paper, ‘On the Critique of Scientific Reason.’ Its title is a play on Kant’s *Kritik der reinen Vernunft*, where ‘critique’ refers to a systematic investigation of something’s nature and limits, such as reason, for Kant. What Onora O’Neill says of Kant’s critique of reason is also true of Feyerabend’s critique of scientific reason as follows:

Whatever else a critique of reason attempts, it must surely criticise reason. Further, if it is not to point toward nihilism, a critique of reason cannot have only a negative or destructive outcome, but must vindicate at least some standards or principles as authorities on which thinking and doing may rely, and by which they may (in part) be judged. (O'Neill 1992, p. 280)

Swap 'reason' for 'science', in this passage, and one has a reasonable account of Feyerabend's vision of the spirit of critical philosophy of science. Naturally, his execution of that critique tended to excess, at least in the more polemical writings, such as *Science in a Free Society*. But, the project itself is a good one, which Feyerabend characterised using the following 'fundamental questions': There are two questions that arise in the course of any critique of scientific reason. They are as follows:

- (a) *What is science* – how does it proceed, what are its results, how do its procedures, standards and results differ from the procedures, standards and results of other enterprises?
- (b) *What's so great about science* – what makes sciences preferable to other forms of life, using different standards and getting different kinds of results as a consequence? (Feyerabend 1976, p. 110).

A critique of scientific reason therefore challenges our conceptions of the historical development, aims and values, methods and practices, theoretical and ontological commitments, and social organisation of the motley of activities gathered under the capacious label 'science'. Later in the paper, Feyerabend complains that this 'critical attitude is only rarely found among [contemporary] philosophers of science' (p. 112) – a claim to which I return later.

Starting from those two 'fundamental questions', I suggest that this critique devolves into two sub-critiques, each evident in Feyerabend's own writings. First, a *critique of science's self-understanding*, motivated by the curt, concise question, *what is science?*, which occupied Feyerabend from at least the mid-1960s. It would have been familiar to mid-twentieth century analytic philosophers of science, focussed as many of them were on either expanding inherited logical positivist conceptions of science, or proposing their own alternatives. Second, a *critique of scientific modernity*, directed at the problems and anxieties – moral, socio-political, even spiritual – emergent within 'forms of life' shaped by scientific knowledge, institutions and *Weltanschauung*. It was increasingly evident from the mid-1970s, reflecting an aspiration to cultural critique that owed as much to Feyerabend's Viennese roots and temperament as to the social and political radicalism of the period.

Certainly, there were few allied voices among philosophers of science of the time. An exception was Jerry Ravetz, whose 1971 book, *Science and its Social Problems*, focusses on the connections between ‘the problems of the character of scientific knowledge, of the sociology and ethics of science, and of the applications of science to technology and to human welfare’ (Ravetz 1971, p. 1). The merging of critiques of science’s self-understanding and wider features of social and political culture are obvious. Such themes were soon to become central to the emerging movements of feminist and post-colonial science studies and were, of course, already resonant in the wider tradition of continental philosophy (Gutting 2005).

In this chapter, my aim is to sketch the programmatic structure of the critique of scientific reason as developed by Feyerabend throughout his writings from roughly the early 1970s, to the very late writings, up to his death in 1994. The two sub-critiques should be understood as experiments in anti-scientism, as efforts to motivate and enact critical investigations of the nature, scope and value of science – to free us from various ‘myths’ about science that, if left unchecked, tend to spread distorted ideas about science that risk leading us into ‘dogmatism’, ‘tyranny’ and other epistemic sins.

Although, to my knowledge, Feyerabend never used the term ‘scientism’, it usefully gathers the themes and tone of many of his remarks on attitudes towards and ideas about science within both academia and wider culture. Scientism, broadly stated, concerns a distorted or exaggerated estimate of the nature, scope and value of science, and so can take many different forms, as mapped out by Mikael Stenmark (2001) and Rik Peels (2018). In the case of Feyerabend’s critique of scientific reason, the worries about scientism mainly emerge from a failure by philosophers of science to subject the sciences to critical scrutiny. Among the many reasons for that failure, an important one is certain contingent developments in the discipline of philosophy of science.

Excellent historical work by Heather Douglas (2009) and George Reisch (2005) has revealed the important influence on the concerns and agenda of philosophy of science in the United States of the culture and politics of the cold war, which in turn was part of what Feyerabend was reacting against – or so I have argued (Kidd 2016c). Confining attention to abstract issues of logic, methodology and epistemology may have been important to the survival of the discipline during the 1950s, to protect a fledgling discipline caught in a storm of political paranoia, when universities were reconceptualised as the intellectual frontlines against the Soviets. Since science was a source of technologies, knowledge and prestige essential to the ideological

and military aspects of the Cold War, it was pragmatic for philosophy of science to adopt the role of cheerleader, while protecting itself from political scrutiny using the value-free ideal.

By the early 1970s, however, the constrained agenda of philosophy of science was frustrating Feyerabend. What had been expedient twenty years earlier was now becoming myopic, distracting attention away from increasingly urgent questions about the epistemic, practical and cultural effects of science. In a neglected 1968 paper, 'Science, Freedom, and the Good Life', he worries that the science is failing to 'serve the increase of human happiness', due to the 'disjointed' character of the 'various departments' of our 'intellectual enterprise', which Feyerabend thought could be repaired, if we 'eliminate the dogmatism of contemporary scientific inquiry' (Feyerabend 1968b, pp. 134ff). Philosophers of science bore a double fault, here: first, for contributing to the 'disjointed', 'dogmatic' character of science by providing conceptions of science premised on a sharp demarcation between science and non-science; second, for celebrating dogmatism as an integral feature of effective scientific enquiry – the targets here being Popper and Kuhn, respectively. Changing political and cultural conditions requires a reappraisal of the agenda and character of philosophy of science, ideally in the direction of a robust critique of scientific reason.

Unfortunately, the sensible case for a more critical and socially engaged philosophy of science was occluded by Feyerabend's failures to present it as an attractive new programme for the discipline. In such papers as 'Philosophy of Science: A Subject with a Great Past' and '*Die Wissenschaftstheorie – eine bisher unbekannte Form des Irrsinns?*', the tone and claims are derogatory rather than diplomatic (and, in the latter, also insultingly ableist). Even the most earnest of Feyerabend's admirers should concede that he lacked the professional tact and vision that is necessary to properly effect the sort of disciplinary reconceptualisation to which he aspired. What follows, then, is an attempt to offer a soberer account of the critique of scientific reason, inspired by and critically respectful of Feyerabend's remarks.

I judge that the critique of science's self-understanding is the more sophisticated and successful than the critique of scientific modernity, since the latter suffers from its lack of engagement with various relevant philosophical traditions. Each critique offers various ways of conceiving and criticising forms of scientism, consistent with Feyerabend's characteristic intellectual practice of being actively pluralistic and experimental, not in dogged pursuit of a single idea. To a degree, this tendency explains the

deficiencies of the critique of scientific modernity – doggedness is, after all, not the same as dogmatism, and a patient, plodding style might not have suited Feyerabend, even if it could have yielded a more consistently successful project in philosophical anti-scientism.

Appraisal of that claim, though, requires a better understanding of the content of the two sub-critiques of scientific reason, to which I now turn.

### 9.3 Critique of Science's Self-Understanding

At its most general, a critique of science's self-understanding aims to interrogate prevailing conceptions of the historical development, methods, practices, values, aims and social and theoretical structures of the sciences. Some critiques challenge existing conceptions, others proffer their own, while many do both at the same time. The construction of conceptions of science was very much the main business of mainstream philosophy of science of the middle half of the last century, exemplified by Popper, Kuhn, Lakatos and their distinguished predecessor, logical positivism.

Such conceptions tend to be more or less schematic, offering broad pictures of the structure and processes of science, albeit typically focussed onto the physical sciences. They are also prescriptive as well as descriptive, offering normative visions of how science ought to be organised, rather than an account of what has come to be its organisation. An important part of Feyerabend's critique of Kuhn, recall, was an 'ambiguity of presentation', concerning the issue of whether the account of science set out in *Structure of Scientific Revolutions* was prescriptive or normative (Feyerabend 1970a, §2) – the brisk reply to which was that it was both (see Kuhn 1970, p. 237). But there are three other features of conceptions of science that are more centrally related to a critique of science's self-understanding.

To start with, they are integral to our efforts to understand the place of science within our 'form of life', at least some of the time. Certain practical or policy questions may proceed at the level of some specific theory, such as the theory of evolution, for sure, but sometimes the concern is that larger, more amorphous thing, 'science'. Second, conceptions of science are typically inherited and accepted without due critical diligence, usually through the processes of education and socialisation. It's rare that they are subjected to processes of informed deliberation and decision, such that those who employ them have a reflective relationship to them.

In itself, this might not be problematic, but – and this is the third feature – there is, at least to Feyerabend's mind, a constant danger that



these conceptions may become objects of uncritical acceptance. Complacency, dogmatism and other dodgy epistemic attitudes can cause real dangers when their object is something as socially and epistemically powerful as the sciences. Hence, the rather apocalyptic tone of the warning that Kuhn's model of science was 'bound to tend to increase the anti-humanitarian tendencies' of 'much of post-Newtonian science' (1970, p. 197–198) and that 'any method that encourages uniformity . . . enforces an enlightened conformism [and] leads to a deterioration of intellectual capabilities' (Feyerabend 1975a p. 45). By opposing such models of science, one was actually pursuing a humanitarian agenda, hence Feyerabend's explanation that the motivation to write *Against Method* was 'humanitarian, not intellectual' (Feyerabend 1975/1993, p. 3).

*Against Method* was actually the title of four separate works, a very long essay of 1970 and the three editions of the book authored by Feyerabend, which were intended as a dialogue to be conducted with Imre Lakatos. True to their author's description of them as 'collages', there is overlap and copying and pasting across these versions, such that each differs from the other in content, often in quite substantive ways. Moreover, such interpretive complexities are further muddled by the well-known problems of Feyerabend's idiosyncratic style and referencing (see Oberheim 2006, Chapter 1).

We can, though, arguably identify a stable core to these works, centred on their various challenges to *methodological monism*: a conception of science as a unitary enterprise, whose epistemic efficacy and unity owe to a common employment, across its constituent disciplines and projects, of the singular, formalised set of well defined, historically invariant, context insensitive methodological norms. I think the clearest statement of the general thesis may be the introduction to the Chinese edition:

The thesis [of AM is]: *the events, procedures and results that constitute the sciences have no common structure*; there are no elements that occur in every scientific investigation but are missing elsewhere . . . procedures that paid off in the past may create havoc when imposed on the future. Successful research does not obey general standards; it relies now on one trick, now on another; the moves that advance it and the standards that define what counts as an advance are not always known to the movers. (Feyerabend 1975/1993, p. 1, original emphasis)

Feyerabend's aim was to challenge methodologically monistic conceptions of science and replace them with more pluralistic ones – hence the colourfully named thesis, 'epistemological anarchism', a form of active normative epistemic pluralism (see Chang 2012, Chapter 5).

Feyerabend offers four main strategies of criticism against forms of methodological monism: the first two charging it with abstraction and obstruction; and the latter two targeted at its tendency to interfere with our capacities to organise and appreciate the sciences. Note, from this point, a switch from the singular, 'science', to the plural, 'sciences', consistent with Feyerabend's constant emphasis on its methodological, theoretical, ontological and axiological plurality. In some of the later work, there is still talk of science in the singular, but almost always to refer to 'a mythical, monster "science"' (Feyerabend 1975/1993, p. 245).

The first line of criticism is that the doctrines of methodological monism are detached from the history and practice of the sciences, as disclosed by the results of historical and sociological enquiry. Such unitary models of science may work nicely on paper but bear little resemblance to what actually goes on in the laboratory, at the workbench or out in the field. The famous Galileo case study used as the basis for *Against Method*, for instance, aimed to show that actual scientific activity is far more complex than the tidy reconstructions offered by the philosophers of science. The rules are often ignored without any epistemic loss, while violating them often pays dividends, meaning that there is far more scope for creative epistemic agency than is sometimes supposed – a sensible point obscured by that unfortunate provocative slogan, 'Anything goes' (see Oberheim 2006, p. 15 fn.30; Shaw 2017). If we are attentive to history and practice, we find that 'the actual sciences, as practised by scientists, have little to do with the monolithic monster "science"' (Feyerabend 1987, p. 155). As late as *Conquest of Abundance*, there are reminders that 'talk of a uniform 'scientific view of the world' can have its uses – to inspire scientists, for instance – just as long as those who indulge in such talk are alert to 'the complexities of research', without which they are apt to fall victim to 'simpleminded and most vapid tales' (Feyerabend 1999, p. 160).

A second strategy of criticism involves the claim that methodological monism would tend to disrupt the practice of science by promoting dogmas that will (a) often fail to enable and (b) often obstruct scientific enquiry. Feyerabend sought to show that following rules of method often impedes epistemic progress, which in other cases can only be achieved by the strategic suspension or violation of those rules. Method often gets us ahead, but not always, which is something that should be known to wise, experienced scientists, unless their minds are confused by the 'fairytales' and 'myths' circulated by the philosophers of science! The third critical strategy is closely related, as it concerns the social epistemological worry that monism tends to distort our ability to understand and organise the



relations between sciences and other epistemic activities and resources. If our thinking about science becomes myth-ridden, then it becomes distorted by various errors, confusions and simplifications. An important consequence is confusion about the relationship between the sciences and other forms of enquiry, which is a point that is credited to Feyerabend by John Dupré:

In general, I can imagine no reason why a ranking of projects of inquiry in terms of a plausible set of epistemic virtues (let alone epistemic and social virtues) would end up with most of the traditional sciences gathered at the top. No sharp distinction between science and lesser forms of knowledge production can survive this reconception of epistemic merit. It might fairly be said, if paradoxically, that with the disunity of science comes a kind of unity of knowledge. (Dupré, 1993, p. 243)

Belief in a single thing – the Scientific Method – that sets up a boundary between science and non-science that is too neat and tidy to capture the messy relationships that actually obtain, often fluidly, between the plurality of our epistemic projects.

While these three critical strategies become familiar enough to readers of Feyerabend, there is another, too. His standard vocabulary for criticising scientific ‘myths’ is that of their being ‘simpleminded’ and ‘crude’ – that, for instance, ‘received versions’ of science are ‘most of the time . . . not only incorrect, but . . . much more simpleminded’ than the actual complexity of practice (*Philosophical Papers* vol. 2, p. 217), and that any ‘theory of science that devises standards and structural elements for *all* scientific activities’ is, inevitably, ‘too crude an instrument’ (Feyerabend 1975/1993, p. 1). ‘Uniformity’, of any sort, ‘reduces our joys’ (Feyerabend 1987, p. 1). Similar complaints are levelled at homogenising conceptions of creativity, which deny the ‘efficiency . . . modesty and, above all, the humanity of [scientific] practitioners’ (1987b, p. 711). Underlying such remarks, I think, is a concern that distorting ‘myths’ about science are also problematic because they diminish our appreciation of the creativity, complexity and imaginativeness of scientists and scientific enquiry. Aesthetic appreciation of the imaginativeness and variety of actual scientific activity is the price paid by those who, ‘undisturbed by the complexities of research, are liable to fall for the most simpleminded and most vapid tale’ (Feyerabend 1999, p. 160).

A common aim of these interrelated strategies of criticism is to challenge a certain range of conceptions of science, namely, those which maintain that its epistemic efficacy and unity owe to the Scientific Method. Read this way, the various works called *Against Method* are critiquing a set of *conceptions of science*, not rejecting or derogating science itself – and not only since, for

Feyerabend, the arch-pluralist, there is no singular conception of science. *Against Method* is really against certain scientific conceptions of scientific methods, those of a sort that distort their historical development and obscuring their complexity and creativity. The upshot is that nothing is lost by abandoning monistic visions of science, even if what one has in their place are messier and more pluralistic, such that one cannot easily justify the epistemic and social authority of science by appeal to its special methodological credentials (Feyerabend 1975a, p. 217). But rejection of one set of credentials does not entail a rejection of the authority of the sciences *tout court*, even if Feyerabend too often obscured that point with dramatic rejection of the ‘excellence’ of science and its separation from the state (*Science in a Free Society*, Part II, §§8–10).

I propose that we interpret the critique of methodological monism as a critique of a specific self-understanding of the sciences as a methodologically unified enterprise. Admirers of science can reject such monistic conceptions without needing to drift into extreme talk of rejecting its epistemic excellence and stripping away its privileged social authority and cultural status. One simply has to tell more complex stories about the development, structure and operations of those sciences, to provide sophisticated answers to the question, *What is science?* Any failure to take up that task represented a dereliction of the duties of philosophy of science, according to Feyerabend’s normative disciplinary vision. Moreover, subsequent developments within philosophy of science have arguably confirmed to a striking degree to broad details of the messier conception of science sketched by Feyerabend.

We can clearly see this in a different emphasis of historical and sociological ‘turns’, the emphasis on the plurality and disunity of science of the Stanford School, and the more recent turns to values and socially relevant philosophy of science – all of which affirm Feyerabend’s vision of ‘science’ as an historically contingent, pluralistic, disunified multitude of activities and projects, charged with values and complexly interwoven with wider social and political contexts. Interestingly, few contemporary philosophers perceive Feyerabend’s prescience, even among the modern advocates of pluralism, the two honourable exceptions being John Dupré (1993, pp. 262ff) and Hasok Chang (2012, Chapter 5).

#### 9.4 Critique of Scientific Modernity

A critique of scientific modernity aims at critical investigation of the practical, moral, cultural and existential problems that can arise when scientific ambitions, institutions and *Weltbilder* come to be entrenched

within a certain culture or form of life. Such critiques need not presuppose that cultures deeply shaped by the sciences must necessarily be replete with such problems, they generally share a sense that such problems are, as a matter of fact, evident within the forms of scientific culture that have emerged in late modern societies.

Such concerns are captured by Feyerabend's pithy question, *What's so great about science?*, which devolves into various sub-questions – 'great' in what sense? and for whom? and at what cost? – and start to become prominent in his work from the early 1970s. *Science in a Free Society* directs its polemics against a homogenous *bête noire*, 'Western science', and *Farewell to Reason* opens with an ominous warnings of 'powerful traditions' that 'oppose' a sense of the value of 'cultural diversity', destroying the ecological and epistemic richness of the world, making life barren and meaningless' (Feyerabend 1987, p. 1). Into the very late writings, such concerns are supercharged into the titular theme of *Conquest of Abundance*, an energetic denunciation of what that book evocative subtitle calls 'a tale of abstraction versus the richness of Being'. Although that book was unfinished at the time of Feyerabend's death, its guiding theme was profound concern about powerful tendencies towards a stultifying epistemic and cultural homogeneity.

Such ventures into cultural critique are stirring and account for much of the broad interest in Feyerabend's work outside of philosophy. As John Preston reminds us, *Against Method* and *Science in a Free Society* have both garnered 'an audience far wider than books in the philosophy of science usually have', since they offered, 'a critique of the position of science within Western societies', that is 'not to be confused with a critique of science itself' (Preston 1997a, p. 5). Unfortunately, the critique was unsystematically developed, shifting in its targets and styles of criticism, often in unhelpfully vague ways.

We can organise the most consistent concerns and themes of the critique of scientific modernity under three labels. To start with, there is the charge that the sciences motivate, justify and enable projects of profound epistemic, environmental and cultural violence, which feed a 'massive trend towards natural, social, and technological uniformity' (Feyerabend 1987, p. 3). Consider, for instance, the denunciations of the erosion of global cultural and epistemic diversity at the hands of the self-serving ideologies of 'rationalism' concocted by philosophers; the attacks, the forcible displacement and subordination of aboriginal peoples, especially if disguised with a treachy rhetoric of 'progress' and 'development'; or the systematic destruction of natural environments caused by the relentless instrumentalisation of creatures and environments.

A second aspect of the critique of scientific modernity concerns the increasing prominence in social and political culture of forms of *philistine scientism*, evident in depreciation of the significance of the arts and of humanistic values, activities and sensibilities, especially in comparison with 'useful' subjects like science, engineering and technology. Within Feyerabend's writings, this concern took at least two main forms. In the late 1960s, the arts were primarily epistemic: the theatre, drama and history could provide important forms of criticism and insight, not least in relation to the sciences themselves. Feyerabend's own demonstrations of his involved careful studies of the playwrights Eugène Ionescu and Bertolt Brecht, not least the latter's *Life of Galileo* (see Feyerabend 1967a, 1967b, 1975b).

An appreciation of the critical, epistemic value of the arts continued into later writings: the third edition of *Against Method* repeats the claim that '[t]he arts . . . are not a domain separated from abstract thought, but complementary to it and needed to fully realise its potential' (Feyerabend 1975/1993, p. 267). But into those later writings, one also finds a new humanistic defence: the arts offer those creative and imaginative resources and outlets vital to at least certain forms of human flourishing – a claim already teased in the closing sentences of 'Science, Freedom, and the Good Life', which proposes 'the preservation of human happiness' as a 'unifying ideal', which Feyerabend hoped could repair the 'fragmentariness' of the arts and sciences (Feyerabend 1968, p. 134). The humanistic defence of the arts seems to be motivated by an existential concern – to offer people 'a survey of the possibilities of human existence' (Feyerabend 1991, 495). The whole range of human epistemic, artistic and cultural resources ought to be brought to bear to help human beings to fully and happily 'participate in the richness of being and [achieve] a more tolerant and compassionate view of how the sciences, arts, and religions could jointly contribute to improving the human condition' (Oberheim 2006, p. 598).

The final aspect of the critique of scientific modernity concerns *disenchantment*, in the sense made famous by Max Weber. At its most general, the concern is that a scientific picture of the world, once internalised and institutionalised within a society, generates or exacerbates a sense of profound alienation. Whether in itself or due to its contrast with earlier religious visions of the world, what the modern scientific *Weltbild* offers is a certain conception of our natural situation within the wider order of nature that is existentially impoverished, unable to nourish our inveterately teleological needs to find meaning and purpose within our activities. Strictly speaking, the real problem is not a scientific vision of the world itself, but

rather a certain form of scientistic naturalism – the doctrine that what ultimately, fundamentally exists is the world as described by the modern sciences, within which values, meanings and purposes are subjective projections of our consciousness, rather than genuine features of reality that might act as measures for the meaningfulness of our activities.

Robert Farrell, one of the few Feyerabend scholars to explore this theme, argues that the deep concern is with reductionistic visions of the world, that ‘occlude’ the abundance of the world by denying or downgrading certain aspects of lived experience integral to *human* life:

Feyerabend is highly critical of unified world-views *when they are reductionistic in character*: when they achieve unity at the expense of denigrating large sections of reality as not really real; where mind, or culture, or aesthetic experience, or whatever aspects of existence which resist reduction are perceived as illusory and metaphysically second-rate. (Farrell 2003, p. 234)

Such concerns become prominent in the very late writings, such as *Conquest of Abundance*, with its guiding worry that adoption of a scientistic picture of the world erodes the possibility of a ‘meaningful existence’, by situating us within a ‘cold, austere’ worldview, apt to leave us ‘scattered, aimless’ (Feyerabend 1987, pp. 13, 5, 246).

Concerns about homogenising violence, philistine scientism and the existential disenchantment of human life are evocative and dramatic, especially when brought together in the deeper historical vision of human condition sketched in *Conquest of Abundance* and *Naturphilosophie*. But they are also a mixed bag.

Before criticising them, three conciliatory comments are in order. First, the critique of scientific modernity is consistent with the critique of science’s self-understanding: inflated estimations of the epistemic capacities of the sciences might, for instance, fuel derogatory attitudes towards other forms of knowledge and understanding. Second, the critique of scientific modernity resonated with the intellectual and cultural context in which Feyerabend’s writing was consistent with what Oberheim calls his ‘remarkable ability to adapt to changing interests and attitudes’ (Oberheim 2006, p. 24). These included, *inter alia*, the emergence of the environmentalist movement, the post-colonial critiques fired by decolonisation, and the anti-technological counterculture heralded by E. F. Schumacher’s little essay, *Small is Beautiful*. Underlying this was, perhaps, what John Preston insightfully calls Feyerabend’s ‘reactionary romanticism’ – a nostalgic yearning for a simpler way of life, unmarked by the abstractions of



intellectuals, the rapacity of our hyperactive consumerist world and the existentially depleted scientific vision of the world (Preston 2000, p. 621).

A third feature of the critique of scientific modernity are its continuities with themes and moods in the early-twentieth century Austrian intellectual culture that were home to Feyerabend. Where earlier scholarship painted him as an idiosyncratic analytical philosopher, newer studies of his work explore his status as *ein Philosoph aus Wien*, to cite the title of an important collection edited by Friedrich Stadler and Kurt R. Fischer (2006). Perhaps the best example of Feyerabend's debts to early Austrian philosophy is the influence of Wittgenstein, whose own criticisms of scientism resonate through the critique of scientific modernity (Kidd 2017a). Think of the warnings scattered throughout *Culture and Value*, that the hegemony of science is 'a way of sending [us] to sleep', that modern people 'think that scientists exist to instruct them' and artists only to 'entertain', and that 'the age of science and technology' may prove to be 'the beginning of the end for humanity' (Wittgenstein 1980, pp. 5, 36, 56).

Considered in wider context – biographical, intellectual and cultural – one can easily understand why Feyerabend developed a critique of scientific modernity. Moreover, a sensible claim lies at its heart: the beneficent potential of science is contingent, not guaranteed, since it can only serve our practical and epistemic purposes when properly understood and carefully managed. But that is difficult, requiring a constant critical scrutiny, informed by a clear set of purposes that the sciences ought to serve, and which ought to emerge from robust critical reflection about the 'good life' – a point where Feyerabend really ought to have engaged with pragmatism, for some of the reasons sketched by Brown (2016). The chatty essay 'How to Defend Society against Science' serves as a good statement of Feyerabend's considered position that there is 'nothing inherent in science or in any other ideology that makes it essentially liberating', since any ideology can 'deteriorate', becoming 'rigid' and 'oppressive' (Feyerabend 1975c, p. 3).

Such conciliatory remarks on context and motivation can help us to better appreciate why so much of Feyerabend's later work was devoted to a critique of scientific modernity. The big question is the sophistication and success of that critique – or, perhaps, the three critical themes of homogeneity, philistinism and disenchantment. My judgement is that the critique of scientific modernity was far less impressive than its sister critique, for reasons that it was unsystematically developed, poorly

integrated with the other critique, and underinformed by existing resources and ideas.

In my judgement, three main issues contributed to the deficiencies of Feyerabend's critique of scientific modernity. The first is a failure, on his part, to engage with sub-disciplines and traditions whose concerns and insights pertain to topics integral to critique of scientific culture. Consider, for instance, the fact that the concerns about epistemic and cultural homogenisation would be far more effectively theorised using theoretical frameworks sensitive to the relationships between epistemic diversity and social power. Yet there is no engagement at all with feminist and social epistemology (at the level of projects of enquiry) or post-colonial theory (at the cultural and political level). Consider, too, the salutary desire to better organise scientific activities to support our practical, epistemic and social interests. It is well-taken, but relies on slogans about 'human happiness and liberty' – usually harping on themes from John Stuart Mill (see Lloyd 1996) – rather than proper engagement with pragmatism and political philosophies. By ignoring such potential allies, several substantive weaknesses were built into the critique of scientific modernity, most obviously in the areas of social epistemology and normative political philosophy.

Second, the failure to acquire concepts and methods necessary for the articulation of certain styles of critique, which is clearest in the 'disenchantment' theme. Feyerabend's remarks rely on a generic vocabulary of 'meaninglessness', 'aimlessness', and so on, coupled to ominous warnings of the dire existential consequences of the 'conquest of abundance'. But, no effort is made to elevate such rhetoric by providing it with substantive philosophical support, for which the most obvious source is existentialism and phenomenology. The later writings of Martin Heidegger offer acute diagnosis of the 'distress' of this, our 'destitute age', suffering through the 'oblivion of Being', owing to the entrenchment of 'technological' ways of revealing the world that have, almost entirely, 'driven out' all other possible 'ways' (Heidegger 1971, p. 91; 1977, p. 27f.). Such luminaries of existential phenomenology offer acute criticisms of the existential and cultural consequences of sophisticated forms of scientism, although they barely figure in Feyerabend's writings. But, this is seriously problematic since, without their conceptual resources, talk of the 'disenchantment' of the world remains intolerably bland.

The third source of the weaknesses of Feyerabend's critique of scientific modernity is closely related: the failure to situate this aspect of his work within the Continental European tradition. As Peter Strawson once

remarked, 'more or less systematic reflection on the human situation', of a sort found in the Continental European traditions and aimed at affording 'a new perspective on human life and experience', belongs to a 'species of philosophy' that is 'quite different' from the analytical one (Strawson 1992, p. 2). I doubt that Feyerabend can really be classified as an analytical philosopher, as by its criteria of precision and argumentative rigour, he often comes out badly. But there is a good case to be made for seeing him as being closer to the Continental European 'species' – think of his evident concerns with reflection on the conditions for meaningful human life, coupled to an ardent critique of contemporary forms of life, animated by acute suspicion about the historically contingent epistemic authorities of late modernity, most obviously the sciences.

Looked at this way, Feyerabend, at least when engaged in the critique of scientific modernity, seems much closer to critical theory and the Frankfurt School and to the later writings of Heidegger and Husserl, than to the dominant themes and figures of analytical philosophy. Trying to make sense of the 'aimlessness' and 'destruction' wrought by the 'conquest of abundance' is easier, if one appeals to *Dialectic of Enlightenment*, *The Question Concerning Technology* or *Crisis of the European Sciences*. Such works openly explore such themes as the complicity of scientific modernity in the 'world-domination of nature', existential 'distress' and a philistine 'barbarian hatred of spirit'.

I have only sketched out some obvious points of contact between Feyerabend's later writings and such complex movements and traditions as social epistemology, feminist and post-colonial philosophies, pragmatism, critical theory and existential phenomenology. The current scholarship has been slow to explore and assess those connections, albeit with a few recent honourable exceptions, doubtless a reflection of the demographics of Feyerabend scholars, most of whom work in the history of analytic philosophy of science. But, the outstanding question is *why* Feyerabend himself did not avail himself of the rich resources of those traditions, all of which were well developed during the later years when he was experimenting with the critique of scientific modernity. In a few cases, it seems there was acquaintance with little engagement; for instance, Feyerabend read Husserl's *Crisis of the European Sciences*, which he praised as a 'remarkable essay' (Feyerabend 1987, p. 274), but frustratingly confines himself to the blunt comment, 'Trouble started in antiquity' (Feyerabend 1999, p. 253). But there is no good evidence of any substantive engagement with feminist, post-colonial, pragmatist or existentialist philosophies or with phenomenology or critical theory – only a few references, here and there, to Nietzsche, Kierkegaard,

Derrida and a few others, such that one has to go digging to discern the extent and nature of their influence upon him (see, e.g. Kidd 2011).

My judgement is that Feyerabend's ventures into a critique of scientific modernity could not be developed adequately with the methods and conceptual resources available from Anglophone philosophy of science. Since cultural critique was not a theme of that 'species' of philosophy, that is not in itself a problem, since those resources were available from other traditions, of which we must believe Feyerabend was aware. His failure to engage with them is therefore problematic, an important consequence of which is that we must rethink his vaunted intellectual eclecticism. Oberheim rightly praises Feyerabend as a philosophical pluralist, an opportunistic thinker, actively concerned to seek and exploit new ideas and ways of thinking 'to improve our understanding through immanent criticism of existing points of view, to counter conceptual conservatism, and thereby to help promote the critical development of new points of view' (Oberheim 2006, p. 287). I agree, but with the caveat that, in practice, what we find is really a sort of *patchwork pluralism*. Feyerabend's main loves are, in practice, classical Greek scholarship, the history of physics and Renaissance art. Such eclecticism is impressive in its scope and imaginative in its use, although critics have queried the rigour of the scholarship of ancient Greek history, literature and art (see Clark 2002; Preston 2016). But such eclecticism falls short of what is really needed for a critique of scientific modernity – namely, substantive engagement with the feminist, post-colonial and other sources so patently absent from the later writings.

## 9.5 Conclusion

The aim of this chapter is that Feyerabend's later work is best understood as a series of experiments with an ambitious project of philosophical anti-scientism – a 'critique of scientific reason'. As a venture into normative philosophy of science, it offers an attractive vision of the ways that philosophy can play an important social role in ways taken up by later developments in the discipline. An obvious case is what Carla Fehr and Kathryn Plaisance call 'socially relevant philosophy of science', focussed on collaborative relationships with scientists, addressing questions of policy and regulation, investigating the relationships among scientific and non-scientific communities and assessing the efficacy of the norms, practices and structures of philosophy of science (Fehr and Plaisance 2010, p. 314). But appealing for certain kinds of philosophical work is not the same as

actually doing it – a fact that might prompt the question of how, at the end of the day, we should understand the contemporary significance of Feyerabend's work.

A downbeat answer is that the 'critique of scientific reason' was a prescient appeal for a broadened conception of the aims and methods of philosophy of science, albeit one subsequently put into practice by feminist philosophers of science, social epistemologists, and post-colonial science and technology studies scholars. By breaking the strictures of positivist visions of science, Feyerabend was instrumental in opening a space that was later more thoroughly occupied and developed by others, which has the effect of assigning him a greater place in the *history* of philosophy of science, but not its present and future course. To use his own backhanded compliment to his discipline, Feyerabend would emerge as a philosopher with a 'great past'.

This downbeat judgement on Feyerabend's work seems, however, too modest, on two counts. First, there is more going on in his writings than simply a critique of positivism, as evidenced by the topical scope of the critique of scientific reason – think of its inclusion of educational, cultural and existential concerns. Assessing Feyerabend's significance through the agenda of contemporary philosophy of science leaves us apt to miss much of the variety and richness of his kaleidoscopic interests and concerns. Second, there are many original, important philosophical ideas in the later writings, many currently still underexplored. Think of Martin Kusch's discussion of the distinctive forms of ontological and political relativism within the later writings (Kusch 2016); the application by Helene Sorgner of Feyerabend's ideas on the democratic control of science to criticise contemporary claims about scientific expertise (Sorgner 2016); the sturdy literature devoted to the later Feyerabend's accounts of scientific realism and perspectivism, represented by Matt Brown (2016), Ronald Giere (2016) and Luca Tambolo (2014). Moreover, careful study of the later writings can offer other things, such as the components for a robust doctrine of the historical contingency of the sciences (see Kidd 2016d, 2017b).

Going beyond hackneyed images of Feyerabend as 'the worst enemy of science', an appreciation of his critique of scientific reason shows him to be an engaged philosopher of science with ameliorative aspirations. Feyerabend emphasises the 'messiness' of science, its complexity, contingency and entanglement with other areas of human life. He also calls to our attention the many dangers arising when this messiness is either forgotten or ignored due to our dogmatism, complacency, critical lapses, or our



falling victim to the epistemic traps set by scientific ‘myths’. Without trying to guess Feyerabend’s views, my own sense is optimistic. Many contemporary movements in philosophy of science have been in the direction of this sort of project. If that is so, perhaps much of philosophy of science today is, to the surprise of many, strikingly Feyerabendian.<sup>1</sup>

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