Pluralism and the 'Problem of Reality' in the Later Philosophy of Paul Feyerabend

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Abstract

Feyerabend's later philosophy was a sustained defence of cultural and epistemic diversity. After *Against Method* (1975) Feyerabend argued that his rejection of methodological monism challenged the presumed unity and superiority of scientific knowledge and practices. His later philosophy was therefore dedicated to a reassessment of the merits of a wide range of 'non-scientific' traditions present throughout non-Western indigenous cultures. Feyerabend drew upon the resources of anthropology and environmental and development studies to argue that the cognitive and practical merits of a variety of indigenous medical, environmental, and classificatory systems had been denied or disregarded. The consequence of these reassessments was epistemic pluralism. Western scientific and cultural practices represent many but by no means all of these and attempts to assert their cross-cultural value have resulted in enormous environmental, social, and intellectual destruction. Feyerabend here drew upon John Stuart Mill's claim that both human wellbeing and the growth of knowledge are best served by a diversity of forms of life and modes of inquiry. Such diversity is threatened by the cognitive and cultural authority of the Western sciences and Feyerabend therefore insisted that moral and political concerns are an essential component of the philosophy of science. Throughout the thesis I argue that the later Feyerabend anticipated many subsequent themes in the philosophy of science, such as pluralism, values in science, and political and postcolonial philosophies of science. The irreducibly pluralistic character of the sciences arises from the diverse values and concerns of human beings, on the one hand, and the complexity of the natural world, on the other, and this claim is developed at length in Feyerabend's final book *Conquest of Abundance* (1999). Feyerabend's work served to unify these contemporary philosophical and political concerns and also to demonstrate their continuity with the older 'post-positivist' philosophies of science. I conclude that the later Feyerabend presented an optimistic and humane vision of global cultural and epistemic diversity and of the role of the Western sciences in the modern world, rather than lapsing into the 'anti-science' polemics and 'cultural relativism' with which his work has come to be associated.

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'I am neither countenancing nor condemning the things Feyerabend describes. I am merely describing aspects of the beast "science" that we have been wont to overlook—even better, to wish away, to repress. But such things will not go away.' (Mitroff, 1976b: 605)

'Of course the later Feyerabend had some rather odd things to say, but it isn't like buying a car—you don't have to take the whole package.' (Patricia Churchland, quoted in Bechtel and Callabaut, 1993: 367)

'One could ask the question whether science is not just our magic. Now, I am not Feyerabend. He might perhaps ask this question; I won't go quite as far.' (Karin Knorr-Cetina, quoted in Bechtel and Callebaut, 1993: 184)

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Though I say 'homelessly', it's truer to say that my homes were many, since from the first of July 2005 to the fifteenth of September 2008, I lived with the Lines' in Richmond, then, when I found commuting unsustainable, I slept on floors and couches, crashed in college (until they told me I was violating fire regulations), and moved around between dormitories and friends' houses. It was a strange sort of life, very sociable, and yet very isolating in the end; it certainly isn't a period of my life I am keen to repeat, even though it was very valuable as a rather sustained 'formative experience'. Without a place of one's own, the world becomes a very hollow place, since there is no 'core', no 'centre', about which one can organise oneself. A man who is at home everywhere is ultimately at home nowhere. Novalis once said that philosophy is 'essentially homesickness, a drive to be at home everywhere'. That's a bit much, but there is some truth to it.

That said, throughout those two or so years, it would have been impossible for me to survive—to sleep, wash, eat, and stay sane, at the least—without the kindness, generosity, and good humour of my friends, and their friends, their housemates, and others besides. This wide circle of people were unfailing in their willingness to offer me somewhere to sleep, store clothes, 'hang around', and eat, never once complaining or turning me way. For that, I owe then infinite thanks and gratitude—and, incidentally, my time as a nomad showed me that human beings are, for all the pessimism of moral sceptics, essentially very *good* creatures. I will shy off giving a full list, but special thanks go to the folks at Palatine House, Trinity Hall, May Street, Brockwell D and Brockwell E, and Lisa and Nick in Victoria B—you were all brilliant. Hopefully you'll find gratification in the fact that your efforts have led to there being one more

professional philosopher in the world—and, if not, alas! Hopefully the future of British postgraduate philosophy funding will change so that experiences like mine need not occur again.

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Finally, I would like to dedicate this thesis to my sister, Amy, who inspires me and who has helped me for as long as I can remember.

Preface

Feyerabend covers a lot of ground, often quickly and without clear purpose. Rather like an over-enthusiastic tour guide, he races from one topic to another—quantum theory to art history, Homer to Laozi, and back again. Such energetic eclecticism is exhilarating and very entertaining, but it can be easy to get lost in it. Structure and coherence often suffers and so reading him can invite frustration, if one is not patient and good-natured. This is one of two occupational hazards of Feyerabend scholarship. The first is keeping track of what he is saying, and why he is saying it; the second is resisting being seduced by his rhetoric, playfulness, and intellectual zeal. Critics often complain that Feyerabend alleges too much and argues too little. They are often right, and it took me some time—more than a few years, in fact—to become able to read Feyerabend whilst keeping his rhetorical excesses and occasional philosophical deficiencies in sight. Although Feyerabend valued individuality above all else, it is easy to become seduced by him and to become 'Feyerabended'. Hopefully, this thesis does both him and me justice; I should be disappointed on both counts if not. Of course, any faults in this work are my own.

I have always liked F.H. Bradley's (striking Feyerabendian) remark, in *Appearance and Reality*, that 'I have really observed no rule of progress, except to get forward in the best way that I can' (Bradley, 1893/2000: 225). For a writer like Feyerabend, whose interests varied so much, this advice seems especially suitable, and I confess it also appeals to my own 'philosophical temperament', to use William James's term. Hopefully the end process of such optimistic scrabbling around is more coherent than an awareness of its authors' 'methodology' might suggest. I hope, finally, that reading this thesis will be enjoyable as well as educative; that mattered to Feyerabend as much as it matters to me.

During the course of my writing, certain sections of this thesis saw publication elsewhere. My treatment of Kierkegaard's influence on Feyerabend appeared in *Studies in History and Philosophy of Science* (Kidd 2011a), a section of Chapter eight, on Feyerabend's 'doctrine of ineffability', is due to appear in a forthcoming volume entitled *Models of God and Other Ultimate Realities* (Kidd forthcoming e), and my account of Feyerabend's discussion of medical pluralism is forthcoming in *Studies in History and Philosophy of Biological and Biomedical Sciences* (Kidd forthcoming f). Other sections and chapters—on Bohm, Dadaism, and the history of ancient Greek thought and culture, for example—had to be cut for reasons of space and focus. Hopefully they will appear in the future; certainly there is more to say about the later Feyerabend than any single thesis could express.

A Note on Terminology

Throughout this thesis, I will often refer to 'science', 'Western science', 'indigenous cultures', 'modernity', 'non-Western cultures' and the like. I am well aware of the complexities and inadequacies of these terms. Certainly Feyerabend played fast and loose with them. I use them partly for wont of superior alternatives and partly because the qualifications that could justify them would expand this thesis far beyond a manageable length. Hopefully my discussion remains sufficiently abstract for these terms to remain usable. Appendix II contains literature which critically discusses these and other terms.

Chapter One

Ch1 The 'Early' and 'Later' Feyerabend

1.1. Whatever happened to Paul Feyerabend?

Paul Feyerabend has a complicated reputation within the philosophy of science. Despite his considerable influence on mid-twentieth-century philosophy of science, including important tangles with Kuhn, Popper, and Lakatos, and despite his influence and citation outside of the discipline, his star has assuredly fallen.[1] For many philosophers, whether 'of science' or not, the name 'Feyerabend' has come to be associated with a whole set of negative epithets: 'cultural relativism', 'anti-science', 'polemicist', 'the Salvador Dali of philosophy',[2] 'the wild man of twentieth-century philosophy of science'[3], and, for one expressive commentator, 'the *agent provocateur*, the Shakespearean Fool and the gifted charlatan all rolled into one'.[4] Peculiar legends have grown up around him and colleagues often delightedly report stories and anecdotes about him (see the Appendix for some of these). Feyerabend also has a reputation for being nasty and aggressive, for preferring rhetoric to reason, and for wanton disregard for academic and scholarly norms and conventions (see Hoyningen-Huene 2000 and Agassi 2002). Some of these charges are, of course, not without basis in fact (see Oberheim 2006: Ch1) and Feyerabend often did himself no favours, cheerfully declaring his enthusiasm for voodoo and astrology, berating the discipline and practitioners of philosophy of science as obsolescent and irrelevant, and regularly recording his hostility towards intellectuals of every stripe.

Such observations may make for an interesting biographical puzzle, but that is not my concern here. I open with these remarks because most often, in my experience at the

[1] Nola and Sankey (2001) discuss the influence that Popper, Kuhn, and Feyerabend had on the course and content of twentieth century philosophy of science.

[2] Theocharis and Psimopoulos (1987).

[3] See Horgan (1993). Godfrey-Smith (2003: 102-103) remarks, 'I have called [Feyerabend] "the" wild man, even though there have been various other wild men—and wild women—in the field besides Feyerabend', even if he was 'uniquely wild'.

[4] Weinert (1998: 635).

least, efforts to assert the significance and merits of Feyerabend's later philosophy are met with objections such as those cited.[5] For a man like Feyerabend, who was 'not the kind of philosopher whose personality could easily be divorced from his views' (Preston and Lamb, 2000: xiii)[6], such biographical appeals are not wholly out of place; however, they can and do function to discourage interest in the later work. As early as 1977, Frederick Suppe warned that 'Feyerabend's philosophy of science has little to recommend itself and is losing whatever importance and significance it once had within philosophy of science' (Suppe, 1977: 643). Alas, the decline seems to have been terminal. As long as Feyerabend has the sort of 'bad reputation' that the aforementioned remarks indicate, it will remain difficult to attempt any rehabilitation of his later work.[7]

My aim in this chapter is to dismantle some of these familiar criticisms, or suspicions, of the 'later Feyerabend' and then, once the 'bad reputation' is dispelled, to indicate fruitful points of contact between Feyerabend's later writings and contemporary debates in philosophy of science. If successful in the first aim, the scene should be set for a re-engagement with Feyerabend's later work, and, if similarly successful in the second, some contacts will already have been put in place. Indeed, my efforts to rehabilitate the later Feyerabend will rely, in part, upon some important recent scholarship, including Eric Oberheim's *Feyerabend's Philosophy* (2006), Robert Farrell's *Feyerabend and Scientific Values* (2004), and John Preston's *Feyerabend: Philosophy, Science, and Society* (1996). My guiding claim is that Feyerabend consistently articulated a radical epistemic pluralism which, into his later career, developed into a sustained reflection on the cognitive and cultural authority of the sciences in the modern world. In so doing, he anticipated contemporary debates over values in science, disunity and pluralism, and the concerns of 'political' and 'postcolonial' philosophers of science. A sense of justice requires that Feyerabend's prescience is affirmed, and hopefully this will allow his work to fruitfully contribute to these debates.

1.2. Four charges.

Feyerabend's views were consistently challenged across the course of his career. The four charges I am concerned with here, however, reflect a set of broader scholarly concerns, rather than, say, the particular details of any of his historical and

[5] See Reavon (2000) for an engaging discussion of how Feyerabend's personality influenced, and often compromised, his philosophy. It is illuminating to consider the criticisms of Feyerabend's attitudes by reading interviews with him; see for instance Broad (1979) and Feyerabend (2000a). There is a list of Feyerabend's interviews in Oberheim (1999).

[6] Nola (2001: 816) concurs: 'Feyerabend is one of the few contemporary philosophers in which both the person and his ideas are intimately related and difficult to separate'. See further von Brentano (1991).

[7] Munévar entitled his (2000b) paper, 'A *Réhabilitation* of Paul Feyerabend', and this thesis is intended to continue in that spirit.

philosophical arguments and theses. Indeed, if Eric Oberheim (2006: III) is correct, then Feyerabend's 'philosophy' consisted less in the articulation of specific theses than in the advocacy of a thoroughgoing 'philosophical pluralism'. Feyerabend's 'philosophical pluralism' is, as Oberheim persuasively argues, largely responsible for many of the confusions surrounding the interpretation of his work—including alleged inconsistencies in his work—and it also, I think, relate to the four charges detailed in a moment: in rough, the apparent 'schism' in Feyerabend's work marked by *Against Method* (1975a) dissolve, and new continuities appear, once Feyerabend's pluralistic concerns are appreciated. Indeed, my interpretation goes further than Oberheim, since it connects Feyerabend's 'philosophical pluralism' with concerns for human wellbeing, indigenous cultures, and the 'scientific worldview'.

The four specific claims that I intend to rebut can be described as follows:

(1) Feyerabend's most significant and respectable work took place during his 'early' period, up to and including *Against Method* (1975). His work on philosophy of quantum theory, incommensurability, theory change, and scientific methodology are all important and influential, both intrinsically and in relation to contemporaneous figures such as Kuhn, Popper, and Lakatos.

(2) The 'later' Feyerabend, roughly, from *Against Method* through to his death in 1994, is much less deserving of serious interest, since it lapses into cultural relativism, 'anti-science' polemics, and politically-motivated criticisms of 'Western culture' and academic philosophy. This 'later' period also included ventures into political philosophy, in the form of 'democratic relativism', which were largely unsuccessful.

(3) Even if there is philosophically-interesting work in the 'later Feyerabend', there is no wider 'structure' or 'programme' which might enable it to be considered as anything more than occasional or incidental works on disparate topics. Certainly, by the time of his later period, Feyerabend had moved far beyond the philosophy of science, into new moral and political territory, such that even if his work remained intellectually credible, it still lies beyond the scope of philosophy of science.

(4) Feyerabend was often insincere and one cannot take seriously his views on science, relativism, indigenous cultures, and the like. Too often these views, especially the stronger ones, are simply provocation, rhetoric, or insincere statements which do not reflect any views he actually holds.

These four charges are, I think, well-established in most of the literature on Feyerabend, even if they are not always made explicit. Point two, for instance, seems most often to be present by implication, even though some commentators have argued forcefully for it. Moreover, these three claims, taken individually, or, better, collectively, can be used to respond to a curious feature of Feyerabend's reputation within the philosophy of science: namely, his status as a leading philosopher of science at an exciting and dynamic period of its history, yet his subsequent fall from grace, beginning, perhaps, with the charged critical reception of *Against Method* and ending with his nomination,

by two writers for *Nature*, as the 'worst enemy of science' (Theocharis and Psimopoulos 1987).[8]

There is an interesting story to be told here, but my interests are not just to offer a rehabilitation of Feyerabend, nor to indulge in hagiography or apologetics. Instead, I want to relocate him relative to contemporary debates within the philosophy of science, to argue that he anticipated them and can, moreover, fruitfully contribute to them today. As early as the late 1960s, and certainly from then onwards, Feyerabend was emphasising the 'disunified' and pluralistic character of scientific inquiry, the role of non-epistemic values in structuring research, and venturing into debates that are now familiar to us in the guise of 'political' and 'postcolonial' philosophies of science. At the time, these concerns often tended to push Feyerabend out of mainstream philosophy of science, or they were accounted for as 'rhetorics', intellectual dramatism, or provocative excesses. Today, however, they are central debates within philosophy of science. Curiously, too, Feyerabend's prescience in anticipating and engaging with them is rarely if ever noted, doubtless because of the persistence of the four charges cited earlier.[9]

The first task, then, is to articulate and substantiate these four charges, so that they can then each be rejected in turn. Once this is done, I will offer a new synoptic account of Feyerabend's later philosophy, including its continuity with the earlier work, and its relationship to contemporary philosophy of science. I conclude that the time is well overdue for a rehabilitation of Feyerabend's work and a sustained engagement with his neglected later writings.

1.2.1. Charge 1: Against Method and the 'schism'.

Feyerabend's early work is certainly his best-known and most influential. Three of the four volumes of his philosophical papers are devoted entirely to the 'early' work, focusing, as their subtitles suggest, on realism, rationality, empiricism, scientific method, and philosophy of physics (Feyerabend 1981a, 1981b, 1999a, forthcoming a). The three studies by Preston, Farrell, and Oberheim all focus predominantly on the earlier work, and their brief ventures into the 'later' period writings are invariably accompanied by comments upon the regrettable absence of detailed studies of them. Indeed, the only papers devoted to the later work is Preston's 'Science as Supermarket: 'Post-Modern' Themes in Paul Feyerabend's Later Philosophy of Science' (Preston 1998) and Gonzalo Munévar's 'Conquering Feyerabend's *Conquest of Abundance*'

[8] Amusingly, this epithet was later taken as the title for Preston, Munévar, and Lamb's (2000) edited volume of papers on Feyerabend's philosophy.

[9] Consider, for instance, John Searle's remark, in a recent survey of contemporary philosophy of science, that 'few philosophers [of science] are looking for the one single method that pervades every enterprise called 'science' (Searle, 2003: 11). Michael Williams similarly notes that although '[a]t their time of their publication, Feyerabend's writings … enjoyed a considerable *succès de scandale* they have subsequently 'come to seem less outrageous'. Indeed, 'their general spirit has some claim to be seen as today's conventional wisdom' (Williams, 1998: n.p.).

(Munévar 2002).[10] Most citations of Feyerabend's work concentrate on his writings up to, roughly, the late 1970s. This is odd in itself. Of Feyerabend's five English-language books, only one, *Against Method*, is from the 'early' period; *Science in a Free Society* (1978) is 'borderline', but *Farewell to Reason* (1987), *Three Dialogues on Knowledge* (1991a), and *Conquest of Abundance* (1999) are all 'later' writings, yet receive only sparse mention and discussion. The quality of these works notwithstanding, their lack of impact within philosophy of science is surely worth accounting for.

A charitable argument could be that there is more than enough material to be getting on with from the later period, so that it is not that the later work is neglected *per se*, only that it has not yet been explored. This argument falls down, of course, because the later writings have remained largely untouched—by philosophers of science, at least—for some thirty years now. A more plausible argument is that philosophers of science, perhaps understandably, do not know what to 'make of' or 'do with' the later work. Whereas Feyerabend's early work remained roughly within the bounds of history and philosophy of science, into his later period he extended his disciplinary and intellectual scope quite radically. One could choose any number of writings from the later period and find Feyerabend's discussions ranging from history and philosophy of science, to classical scholarship, art history, anthropology, and environmental studies, and similarly find Aristotle, Bohr and Popper rubbing shoulders with Brecht, Laozi, and Pseudo-Dionysius the Areopagite. Philosophers like Søren Kierkegaard are enigmatically cited as major influences, yet there are barely mentions of any philosophers of *science*.[11] Stimulating and entertaining as such eclecticism may be, it does pose obvious interpretative difficulties for philosophers of science unfamiliar with such a diverse range of disciplines and traditions; and, indeed, Feyerabend himself has been criticised for his at-times incautious interdisciplinary explorations, which, if Stephen R.L. Clark is right, too often 'relied too much on his own reading, too little on conversation with contemporary scholars' (Clark, 2002: 250). These interpretative difficulties are further compounded by Feyerabend's own indolence concerning scholarly conventions.[12]

Considering the interpretative problems that the later work poses, it may come as no surprise that philosophers of science have preferred to remain within the early work. Not only is the work from this period more obviously pertinent to ongoing debates within philosophy of science, but the general style and presentation of it is more familiar, and, hence, easier to work with. The conclusion that Feyerabend's most significant and respectable work took place during his 'early' period, up to and including *Against Method* is thus wholly intelligible. Moreover, it is easier to connect this work with 'foundational' figures in the history of philosophy of science, such as Kuhn, Popper, and Lakatos; even if the merits of these figures today is open to dispute. Intelligible as the focus on the earlier work may be, however, it does not establish that

[10] Some of the essays in Munévar (1991) also refer to *Farewell to Reason*, such as the papers by Hannay and Hooker.

[11] On Kierkegaard's influence on Feyerabend, see Kidd (forthcoming a).

[12] See Oberheim (2006: 30-42).

one ought not to consult the later work. Understanding that neglect leads us to the second charge.

1.2.2. Charge 2: Cultural relativism and 'anti-science'.

Feyerabend is notorious today for being a cultural relativist. That term means many things, but most of them have derogatory connotations, and Feyerabend doubtlessly fell foul of many of them throughout his later career. Indeed, a regular feature of his later writings is the long discussions of cultural relativism and his responses to the charge that he is, was, or could be a cultural relativist of one form or another.[13] The easy association of Feyerabend and relativism persists—for instance, in Paul Boghossian's (2006: 2) recent attempt to claim Feyerabend for the relativist camp. As Oberbeim puts it, '[i]n many circles, the name 'Feyerabend' has come to be associated with irrationality, with anarchism, or with a form of toothless relativism' (Oberheim, 2006: 17).

Allied to the 'relativism' charge is what one might call the 'anti-science' charge, the claim that Feyerabend was either opposed to science, sceptical about its cognitive authority, or critical of its privileged place within Western societies. Depending on how those charges are articulated, they have elements of truth in them: however, the blanket claim that Feyerabend was the 'worst enemy of science' is false. As Gonzalo Munévar remarked, 'Feyerabend ... was no enemy of science', and, on the contrary, his work was an attempt to affirm—in the face of the abstract accounts favoured by logical positivists—how 'complex and exciting science is, and how it may become at once more fruitful and more humane' (Munévar, 2000a: v-vi).[14]

The 'worst enemy' reputation likely arose because Feyerabend openly questioned the methodological credentials of the sciences, and not because he was 'anti-science'. Of course, he insisted upon a critical perspective upon the sciences, and he often appended polemics to his philosophical criticisms. The 'relativism' and 'anti-science' charges converge in the inherited idea that Feyerabend was an enthusiast for voodoo, astrology, magic, and other 'non-scientific' beliefs and practices. That perception is encouraged by such typical Feyerabendian gestures as including his horoscope on the cover of *Science in a Free Society*, or by his favourite pedagogical strategy of maintaining that medieval witchcraft was, for a time at least, more intelligible and empirical than physics, or his claim—cited by the then-Cardinal Ratzinger, now Pope Benedict XVI, no less—that creation science should be taught in schools. Whether one sees this as sincere statements or not, they all too-easily encourage the perception that Feyerabend is either 'anti-science' at worst, or intellectually irresponsible to proffer such

[13] See, for instance, Feyerabend (1987: 19-89) and (1993: 268-272).

[14] As the theoretical physicist Lee Smolin recalls, Feyerabend 'was not anti-science, as some of my professors at Harvard had intimated he would be. It was clear that he loved physics, and that he was more conversant with the technicalities than most philosophers I met. His reputation as hostile to science had undoubtedly arisen because he considered the question of why science worked as unanswered' (Smolin, 2007: 292).

contestable and controversial opinions, at best. Feyerabend's sincerity is discussed in section six.

My aim here is to offer a corrective account of the 'relativism' and 'anti-science' charges; this could be viewed as a prolegomenon for a more detailed account, although I am persuaded that it can successfully dismiss the two charges. I suggest that: Feyerabend did advocate a radical cultural relativism for a period in the late-1970s, perhaps stretching into the early-1980s. The most sustained expression of this 'radical relativism' was *Science in a Free Society*, where Feyerabend did indeed affirm a 'hands-off' attitude towards other cultures, and where he also denied the special cognitive and practical efficacy of the sciences, and issued his notorious call for the 'separation of science and the state'. In a sense, it is this book which represents the Feyerabend described by the 'bad reputation', and, as long as one's focus remains on that book, that reputation is justified.

Into his later work, however, Feyerabend systematically dismantled these attitudes. Throughout the 1980s and into the early 1990s, he maintained that cultures were fluid and amorphous, affirmed the potential for inter-cultural moral interventions, conceded that scientific knowledge and practices were superior to 'non-scientific' alternatives in certain areas (especially medicine), and agreed that the sciences were a central and important feature of modern Western cultures. Bearing these changes in mind, one can uncontroversially say that Feyerabend systematically dismantled the 'relativism' and 'anti-science' attitudes that he expressed *Science in a Free Society*. The shift in his attitude towards cultural relativism can be illustrated by charting his changing models of culture. In his earlier works, Feyerabend maintained that cultures were discrete and autonomous and that any intervention by one culture into another was therefore necessarily disruptive. Throughout the 1980s, this view was modified as Feyerabend increasingly conceded that cultures constantly interact, exchanging ideas, values, and practices, without this violating their integrity. This is one reason why *Farewell to Reason* opens with thirteen alternative forms of 'relativistic' intercultural contact (Feyerabend, 1987: Ch1). By the 1990s, Feyerabend had come full circle. He now affirmed that cultures are fluid and amorphous, that they interact and change; his new motto, and the title of a later essay, was 'potentially every culture is all cultures'. An important consequence of this is that 'cultural differences lose their ineffability'—one need not respect certain values or practices simply on the grounds that they belong to a certain culture:

> 'Objective judgements are out; so is an abstract and ideology-driven protection of cultures. Drastic interventions are not excluded but should be made *only after* an extended contact, not just with a few "leaders", but with the populations directly involved.' (Feyerabend, 2001: 35fn25)

Feyerabend therefore repudiated the relativism he had earlier defended. The essentialist model of cultures—as discrete and autonomous—was abandoned, and, with it, the idea that intercultural exchanges were necessarily destructive. With one eye on earlier views, Feyerabend remarked that 'traditional relativism assumes that cultures are 'closed' and

well defined', but objected that 'this is not how 'real' cultures react. Facing sizable problems (or long-lasting successes) *they change*' (Feyerabend, 2001: 215-216). With this remark, Feyerabend moved away from the cultural relativism that he defended in *Science in a Free Society*, and which many philosophers still associate with him.[15]

One can therefore reject the second charge, namely, that the 'later' Feyerabend is much less deserving of serious interest. It is not tainted by cultural relativism, 'anti-science' polemics, nor into politically-motivated criticisms of Western culture. This is not to say, of course, that Feyerabend did not maintain views on inter-cultural interactions, on the authority of the sciences, nor that he abandoned his critical perspective on Western culture. Indeed, in all three cases, he did, and as I argue in the next section, the relationships between science, cultures, and Western modernity became the major axes of his later philosophy. However, none of these axes reflected anything like the 'cultural relativism' and 'anti-science' that is so often attributed him, nor should they be assessed by their conformity with these attitudes, which formed only a temporary and aberrant feature of Feyerabend's philosophy. (Feyerabend's dismissive attitudes towards academic philosophy are less easy to account for. These remained constant up until his death; in an interview given a few months before his death, one finds Feyerabend (2000a) reaffirming his distaste for academic philosophy.)

1.2.3. Charge 3: The unity of the later Feyerabend.

Hopefully the discussion in the preceding sections has helped to clear the way for an assessment of the merits of the later Feyerabend. A problem arises, of course, in that whereas the 'early' work is familiar enough, the 'later' work, in general, is not; in my experience, many philosophers of science are pleasantly surprised to find that there *is* a 'later Feyerabend' at all. Certainly their surprise may be due to the lack of supporting literature; as Preston has noted, '[c]ritical study of this later work is still in its infancy' (Preston, 1996: 7). My account of the later work in this section, then, will rely mainly upon the reviews of one key later text: *Conquest of Abundance* (1999b), 'a tale of abstraction versus the richness of Being', Feyerabend's final book, which was uncompleted at the time of his death, but was ably edited by Bert Terpstra (see Terpstra 2001). I focus on this text for three reasons. First, as Feyerabend's final work, it represents the fruits of his thinking, his 'intellectual testament', and so is the best place to turn for an account of his mature philosophy. Second, it has been well-served by reviewers and commentators, both critical and laudatory, especially, of course, by leading Feyerabend scholars such as Preston (2000), Oberheim (2001), and Munévar (2002). Third, it is arguably the most accessible and engaging of his later books, and so would provide an obvious 'point of entry' for those wishing to explore the later Feyerabend; especially since it was uncompleted at the time of his death in 1994, and so

[15] Indeed, the fact that Feyerabend recorded his dissatisfaction with that book, and his desire that it not be reprinted, attests to the fact that he no longer wished to be associated with the views expressed in it. See Horgan (1993) and Borrini-Feyerabend (2000). However, as I argue in Chapter two, *Science in a Free Society* is not completely a lost cause.

enjoys an 'ambiguity … and openness … that Paul was far from despising' (Borrini-Feyerabend, 2001: ix).

Before offering any perspective on the later philosophy, however, the 'third charge' must be defused. So far, I have argued that Feyerabend's important philosophical work did not end in 1975 with *Against Method*, and that the later work is not guilty of the cultural relativism and anti-science polemics that it is supposed to be. Even if my rebuttals are correct, however, that does not establish the further claim that there is a coherent or unified set of concerns, such that one can speak properly of there being a 'later Feyerabend'. The third charge to respond to, then, may be stated as follows: even if there is philosophically-interesting work in the 'later Feyerabend', there is no wider 'structure' or 'programme' which might enable it to be considered as anything more than occasional or incidental works on disparate topics. On these terms, the later work consists of a series of essays and comments on a variety of topics—historical, philosophical, artistic, and political—which, whilst engaging in themselves, did not feature as part of any broader philosophical program. One reviewer of *Conquest of Abundance* writes that Feyerabend 'picks fights with scholars of the classics, gives advice on human flourishing, and tries to wrestle with how we should approach and understand all human cultures', with the consequence that the book is 'uneven; at times it is absorbing and at times simply frustrating' (Downes, 2002: 160) (though this is surely a little unfair, since Feyerabend died before the book was finished). To be sure, Feyerabend covers a lot of ground in that book, stating his 'procedure will be historical and episodic', encompassing 'selected events and developments' from the histories of philosophy, science, and the arts (Feyerabend, 2001: 17). The cast of characters includes Achilles, Xenophanes, Parmenides, Aristotle, the Christian mystic Pseudo-Dionysius the Areopagite, as well as Brunelleschi, Galileo, Planck, Bohr, and the Chinese dissident Fang Lizhi, whilst topics range from scientific realism, the role of argumentation, perception and language, international development, historical interpretation, and cultural change. The book is, as Preston puts it, 'rich in its own abundance' (Preston, 2001: 597).[16]

Bearing such 'richness' in mind, one may be forgiven for supposing that the 'later Feyerabend' lacks cohesion or unity, such that he may be considered a kind of intellectual journalist: a series of scattered, loosely-interconnected essays and remarks on topics that interested him, but which, collectively, had little real unity. Certainly it can be difficult to see how Christian Neoplatonism and contemporary global cultural diversity relate to one another—at least, within the usual conventions of philosophy of science. Less so, arguably, in Feyerabend's case; his own work was always innovative, 'highly original, contain[ing] sharp arguments, provocative theses, and deep critiques', including a deliberate strategy of 'introducing texts from outside the field ... that had previously played no role, but which through Feyerabend became fruitful within the philosophy of science' (Hoyningen-Huene, 2000: 8). Such eclecticism was, moreover, related to two of Feyerabend's guiding values. First, the 'philosophical pluralism' articulated by Oberheim, with its associated imperative to make use of the resources

[16] See also van Fraassen (2000).

offered by diverse disciplines and traditions. Feyerabend himself affirmed that 'there is no idea, however ancient or absurd, that is not capable of improving our knowledge', and concluded that the 'whole history of thought' should be 'absorbed' into our inquiries (Feyerabend, 1993: 33). Second, Feyerabend's pluralism committed him not only to *defending* but also to *demonstrating* the value of theories and traditions outside of the norm, whether these be other academic disciplines (like classics or art history), or other cultural and epistemic traditions (like those of contemporary indigenous cultures). Elisabeth Lloyd (1997) attributes this to Feyerabend's adoption of a Millian role, defending minority views against 'tyrannous' majorities. Of course, these eclectic—or, better, *pluralistic*—methodologies must be intended to serve some end, some guiding purpose, otherwise the effort invested in them would be wasted.

The guiding purpose of Feyerabend's later philosophy, that which confers unity upon it, was arguably this: it was a defence of a thoroughgoing epistemic and cultural pluralism. This claim will be articulated and defended throughout this thesis, but for now it provides a framework within which to consider the four charges raised at the start of the paper, and which can reconcile the diverse disciplinary scope and intellectual concerns of the later work. To recap, the three charges discussed so far were: that Feyerabend's philosophically-important work was confined to his 'early' period, that the later work suffers from 'cultural relativism' and 'anti-science' excesses, and finally that there isn't any coherent, unifying theme to the later writings. These three charges have been rebutted, and now it is time to assert the 'unity' of the later Feyerabend, and, in so doing, show how *Conquest of Abundance* is at once continuous with the earlier works, and, finally, how it attempts to unify the diverse concerns which motivated Feyerabend.

Fortunately, Feyerabend offers us a thumbnail sketch of his philosophical development in the preface to the second edition of *Farewell to Reason*, which is worth quoting at length: 'In *Against Method* I argued that the customary accounts of scientific knowledge and scientific method are faulty and that scientists do not proceed 'rationally' in the sense of rationalist philosophers. In *Science in a Free Society* I argued that the sciences are particular ways of gaining information and of interfering with the world, that there are other ways and that these 'other' ways are satisfactory in the sense that they meet the material and spiritual needs of those who use them [and in] *Farewell to Reason*, finally, I argued that cultural diversity "is beneficial, while uniformity reduces our joys and our (intellectual, material, emotional) resources"' (Feyerabend, 1987: v).

This is Feyerabend's own account of the path of his philosophical development, and it makes clear that the reassessment of the special cognitive authority of the sciences that *Against Method* initiated laid the foundations for the later extensions into cultural diversity; for if the sciences are not privileged means of engaging with the world, then one should, as a good epistemic pluralist, consult other allegedly 'non-scientific' modes of inquiry. However, this concern with epistemic pluralism soon led Feyerabend to realise the extent to which the survival of non-scientific beliefs and practices was under threat, thanks to the 'homogenising' tendencies of Western modernity. This prompted

Farewell to Reason, which opens with the statement, quoted in the passage above, about the multiple benefits of cultural diversity.

Feyerabend here connected epistemic and cultural pluralism: maximising our epistemic engagement with the world requires a diversity of epistemic activities, and associated institutions and communities, and this, in turn, is premised upon cultural diversity. However, cultural diversity is being eroded, and so the preservation of global epistemic diversity is premised upon the protection of cultural diversity; otherwise, the result may be a radically bounded pluralism, as one may have *scientific* pluralism, but not the much broader *epistemic* pluralism that Feyerabend has in mind (the distinction between scientific and epistemic pluralism is the topic of Chapter four). This point relates to the 'cultural relativism' and 'anti-science' charges: the point that *Farewell to Reason* and *Conquest of Abundance* make is that there are many ways of epistemically engaging with the world, many 'modes of inquiry' and 'forms of knowledge', of which the Western sciences represent many, but by no means all. This is not 'anti-science', although it is 'anti-scientism', or, in John Dupré's term, anti-'imperialist scientism' (Dupré, 2003: 113f). The 'conquest of abundance' itself refers to the progressive dissolution of global epistemic and cultural pluralism, at the hands of philosophical and, later, scientific 'abstractions' which assert their own 'reality' to the exclusion of rivals—whether mythic and religious traditions, ethnosciences, or whatever.

There is a further moral and political dimension to Feyerabend's defence of cultural pluralism. As early as 1968, in his neglected paper 'Science, Freedom, and the Good Life', Feyerabend was arguing that the 'fragmentariness' of the arts and sciences should be resolved by asserting a new 'unifying ideal', namely, 'the preservation of human happiness', including 'an increase in the powers of human beings to become what they are capable of becoming'. This was explicitly connected to the 'tremendous proliferation of points of view', and the epistemic virtues of tenacity and anti-dogmatism (Feyerabend, 1968: 134). Even earlier, Feyerabend had declared to Kuhn that the significance of scientific problems depended upon 'the influence a specific solution of it may have upon the well-being of mankind', again meaning 'the full development of human faculties' (quoted in Hoyningen-Huene, 2006: 613-614). The influence of John Stuart Mill's *On Liberty* (1859) is unmistakable here, and Feyerabend repeatedly affirmed his respect for Mill and that 'immortal essay'.[17] Of course, the main thesis of *On Liberty* is that *both* human wellbeing *and* the pursuit of knowledge are bettered by social diversity, and this is the point that Feyerabend seems to have drawn from his reading of Mill (see, for instance, Feyerabend, 1968: 134; 1988: 34, fn2; 1981b: 143; 2001: 202, 269). The 'abundance' which Feyerabend praised was epistemic and cultural diversity, but this is, however, a point which has been missed by commentators engaged in a long-running debate about Feyerabend's debts to Mill: some, like (Staley, 1999), have supposed that what Feyerabend took from Mill were arguments for theoretical pluralism, and critics have replied that, if so, then Feyerabend misunderstood Mill (Jacobs, 2003).

[17] See, for instance, Feyerabend (1981a: 139-141ff) and (1981b: 15). The 'immortal essay' quotation is from Feyerabend (1987: 33).

This debate rests on the presupposition that it was *theoretical* pluralism alone that Feyerabend admired in Mill, but this seems unlikely, for two reasons: first, Feyerabend already had a range of perfectly good historical and philosophical arguments for theoretical pluralism, and, second, the content and context of his citations of Mill makes it abundantly clear that the pluralism he was drawing from him was social and ethical as well, insofar as it pertained to human wellbeing.[18] Moreover, many of Feyerabend's discussions of the value of cultural diversity emphasise, not its instrumental value as a means of sustaining epistemic pluralism, but, rather, its intrinsic value as a precondition of human wellbeing. The dissolution of global epistemic and cultural pluralism is, therefore, an urgent matter of ethical as well as epistemological concern, and *Conquest of Abundance* is the mature manifestation of this concern. Feyerabend's concerns with epistemic and cultural pluralism, human wellbeing, and the cognitive and cultural authority of the 'scientific worldview' all reflect his unifying pluralistic sentiment that human life is best served, in every respect, by the sustenance of a diversity of ways of living within and making sense of the world, answering to multiple values, serving many explanatory interests, and so on.

The interlinking of cultural and epistemic pluralism is an important and distinctive feature of Feyerabend's pluralism. Certain 'modes of inquiry' and 'forms of knowledge' can only be operated and employed within a receptive culture or community; on these terms, preserving epistemic pluralism goes hand-in-hand with preserving cultural pluralism. For instance, if one aim of epistemic pluralism is to fulfil diverse human explanatory needs, then where would those needs come from, if not from the wider society within which those epistemic activities are embedded?[19] The interpretation of Feyerabend that I offer in this thesis is close, and sympathetic, to Oberheim's reading of Feyerabend as a philosophical pluralist. However my account differs from his in two respects. First, I include the wider moral and political dimensions of Feyerabend's later thought and consider them to be significant features of the later philosophy. These do not significantly feature in Oberheim's study of Feyerabend. Second, Oberheim is pessimistic about the prospects of identifying a coherent and substantive project in Feyerabend's later work. Where Oberheim tends to emphasise the critical and often performative argument for pluralism within Feyerabend's work, I see such pluralism as forming part of a more significant and unified project (see, for instance, Oberheim, 2006: Ch9). Oberheim argues that Feyerabend defended a philosophical pluralism as a means to 'improve our

[18] The most explicit statement is Feyerabend's remark, in a letter to Lakatos, that, when speaking of Mill he was 'always talking of *On Liberty*' (Feyerabend and Lakatos, 1999: 239). Later in that letter Feyerabend praises Mill's theory of science for being 'more liberal ... and less hampered by technicalities' than Popper's, and, importantly, for Mill's efforts to ground 'his theory of science [in] *a theory of man* that aims to find conditions for the full and free development of individuality' (Feyerabend and Lakatos, 1999: 240).

[19] One could draw useful parallels with Hasok Chang's 'pluralistic traditionalism' (Chang, 2004: 231-234f), although Feyerabend has in mind something far more radical.

understanding … counter conceptual conservatism … and thereby to help promote the critical development of new points of view' (Oberheim, 2006: 287). I agree with this, but wish to add the further claim that these calls for proliferation and pluralism were motivated by substantive moral and political concerns: namely, to identify and sustain the conditions within which human beings maximally flourish. Feyerabend employs a pluralistic philosophical method and defends cultural and epistemic diversity because he identifies them as essential to ensuring human wellbeing.

1.2.4. Charge 4: Sincerity.

The final charge against Feyerabend relates to the significance of his later work to the philosophy of science. One could concede that the three previous charges are in fact baseless, and agree that the 'later' Feyerabend is not 'anti-science' nor a 'cultural relativist', and that it does enjoy a strong degree of 'unity' of themes and concerns. However, these concessions would not establish the point, important to my purposes here, that the later Feyerabend is relevant to the philosophy of science. After all, if his later writings seem to treat issues which traditionally fall into ethical, cultural, and environmental philosophy, then why continue to connect them to the philosophy of science? And surely the fact that the later Feyerabend also extends into anthropology, classics, and other 'non-philosophy' disciplines cements this objection? Even if the later Feyerabend is engaged in valuable philosophy, its pertinence to the philosophy of science needs to be better demonstrated.[20]

There are two ways to affirm the relevance of the later Feyerabend to the philosophy of science. First, his later discussions of ethical, cultural, and environmental issues all issue from his history and philosophy of science. The later chapters will illustrate this claim, so it is enough for now to say that Feyerabend's later philosophy is an exploration of the epistemological conclusions he drew from his 'earlier' work. Roughly put, the later work is an attempt to identify and examine the implications of the reassessment of the cognitive and cultural authority of the sciences prompted by the history and philosophy of science.

Second, the apparent disparity between the later Feyerabend's wider concerns and the philosophy of science relies upon an older conception of the philosophy of science. As Bernard Rollin once remarked, Feyerabend represents an 'inspiring and pioneering' attempt to create a 'realistic philosophy of science', one which 'engages the welter of ethical, social and epistemological problems of science that had been declared non-problems by fiat in a great deal of traditional philosophy of science' (1986: 165).[21] Rollin's point is that Feyerabend took issue with the narrower remit of mid-twentieth-century philosophy of science, which had largely confined itself to logical, methodological, and epistemological issues. Important as these issues are, they do not exhaust the range of philosophically important issues generated by scientific knowledge

[20] At least one writer has said explicitly that he 'refuse[s] to read everything that Feyerabend has written since *Against Method*' (Schnädelbach, 1991: 433).

[21] The use of 'realistic' is perhaps unfortunate, since it risks being conflated with 'realism'.

and practices.[22] Feyerabend's desire to expand the scope of the philosophy of science reflected his sensitivity to the moral and political implications which arise from the cognitive and cultural authority in modern cultures.[23] The later Feyerabend can therefore be interpreted as making an attempt to diversify the philosophy of science, both by expanding the range of issues it addresses and by increasing the range of disciplines it interacts with.

The later Feyerabend *is* therefore relevant to the philosophy of science, just as long as one embraces a richer conception of the issues and concerns of that discipline. Gratifyingly, the enrichment of the philosophy of science that Rollin anticipated has been substantiated by subsequent developments. There is now a growing literature on ethics and science, political and 'postcolonial' philosophies of science, values in science, and of course a well-developed literature in feminist philosophy of science. Specific sciences like archaeology have also begun to receive philosophical attention (see Scarre and Scarre 2006). Although the aims and interests of these areas vary greatly, they all serve as a testament to the diversification of the philosophy of science that Feyerabend tried to initiate. How much credit he can take for this is, of course, another matter, and not one that I will touch upon here.

1.3. A synoptic view.

My aim in this chapter has been to argue that Feyerabend's later work is not guilty of 'cultural relativism' or 'anti-science' polemics, and that, contrary to the diversity of its appeals and concerns, it in fact enjoys a strong unity. In fact, this unity grows when one interprets it as continuous with the pluralistic themes of the earlier work which Oberheim emphasises. The later Feyerabend offers a sustained and multi-pronged defence of epistemic and cultural pluralism—using historical, epistemological, moral, and political arguments, and appeals to the intellectual and empirical resources of philosophy, history, anthropology, and other disciplines. Indeed, there is a pleasing neatness to the fact that Feyerabend defends epistemic and cultural 'abundance' by invoking disciplinary and intellectual abundance of his own. After all, one excellent way to defend pluralism is to demonstrate it, to put it to work.

During his earlier work, Feyerabend defended scientific pluralism; however, with his rejection of methodological monism in the early 1970s, he saw no *prima facie* reason to confine his epistemic pluralism to the sciences, and so radically extended it to encompass non-scientific beliefs and practices. This 'turn' was marked by 'On the Critique of Scientific Reason' (1976b), which opened with the question, 'What's so great about science?', meaning, upon what values and standards is the efficacy and success of the sciences to be established? Feyerabend realised that different cultures have different explanatory concerns and interests, and adjusted his assessment of

[22] On the still-neglected area of ethical issues in the philosophy of science, see Resnik (1998) and Rollin (2006, especially chapter 2).

[23] Feyerabend would therefore disagree with, for instance, Suppe's suggestion that, 'If any problem in the philosophy of science justifiably can be claimed the most central or important, it is that of the nature and structure of scientific theories' (Suppe, 1977: 3).

scientific knowledge and practices accordingly. The turn to cultural pluralism which followed was intended to trace the implications of this.

The continuity of Feyerabend's philosophical development can be more clearly charted using this interpretation. Prior to *Against Method*, Feyerabend was occupied with various central issues in the philosophy of science, with a guiding remit to assert philosophical pluralism against the monistic, dogmatic, and conceptually-conservative tendencies—for instance, those he discerned in Kuhn's model of science (see Hoyningen-Huene, 2006). However, this included a commitment to social pluralism, to the value of a diversity of 'experiments in living', as Mill called them, as well as to methodological or theoretical pluralism. This reflects Feyerabend's liberal, pluralist conviction that human beings flourish best within a diversity of social and cultural forms; however, this theme remained fairly low-key. With *Against Method*, however, this changed: the rejection of the 'myth of method' prompted Feyerabend to radically reassess not only the practical and cognitive authority of the sciences, but also their social and political authority. *Science in a Free Society* was an early and ineffectual attempt at this radical reassessment, but, as Feyerabend later acknowledged, was very unsuccessful—and, indeed, did his reputation lasting damage.[24]

Into the early 1980s, fortunately, Feyerabend did encounter the literature necessary to substantiate his reassessment, including acquaintance with medical anthropology and development studies, but, by that time, he had withdrawn from mainstream philosophy of science. As a result, later works, such as *Farewell to Reason*, went largely unnoticed, and, where they were, tended to be overshadowed by a preoccupation with Feyerabend's 'relativist' credentials and his apparent efforts to avoid them; indeed, that book begins with a long, almost ninety-page, chapter, called 'Notes on Relativism'. *Conquest of Abundance* is thankfully relatively free from Feyerabend's anxieties about his reputation as a 'relativist', and instead embraces a 'quieter, more wondering' tone, and a less charged attitude towards epistemic and cultural pluralism and the depredations of Western modernity.

1.4. Conclusions.

My aim in this opening chapter was to affirm the unity and value of the later philosophy of Paul Feyerabend. I did this in two ways. First, by articulating and rebutting four familiar charges against the later work, namely, that it lapsed into cultural relativism, anti-science polemics, and a fatuous defence of voodoo, astrology, and other 'eccentric' beliefs and practices, or that, even if it is meritorious, its relevance to the philosophy of science is minimal. Each of these four charges was assessed and rejected. Second, I argued there is a clear and strong unity to the later work, namely, a vigorous defence of epistemic and cultural pluralism. This pluralist stance is also continuous with the earlier work and coheres well with Oberheim's interpretation of Feyerabend as espousing a strong 'philosophical pluralism'. Although Feyerabend's arguments and claims are not,

[24] Grazia Borrini-Feyerabend reports that '[i]n the last decade of his life … Paul was not at all pleased with *Science in a Free Society*, which he did not want to see reprinted' (Borrini-Feyerabend, 2001: xi). See further Horgan (1993).

of course, beyond critique, and although they need greater articulation and defence at certain points, he does succeed in affirming the value of, and need for, a vigorous epistemic and cultural pluralism. Developing and defending this pluralism will make for a rich and promising area for future research, especially in conjunction with contemporary debates over values in science, political and postcolonial science studies, and, beyond that, in anthropological, development, and environmental studies. On these terms, Feyerabend can also be credited with continuing to diversify and 'pluralise' the philosophy of science. In the next Chapter, I explain why Feyerabend thought such pluralisation was needed.

Chapter Two

Ch2 Methodological Monism

2.1 The myth of method.

Feyerabend is perhaps best known for his studies of scientific methodology. The title of his most famous book, *Against Method*, makes both his interest and his critical stance clear. However, what is perhaps less well appreciated are the aims of his views on scientific methodology. Feyerabend is sometimes described as being opposed to method *per se*, or as denying the value of scientific methods, or as defending the radical claim that, where scientific methodology is concerned, 'anything goes'.[25] Of course, Feyerabend often varied the presentation and rhetoric of his remarks on scientific methodology, in accordance with his shifting interests and critical targets (see Oberheim 2006: Ch7). However, there are clear and continuous claims regarding scientific methodology and the aim of this Chapter is to outline them, beginning, in this section, with Feyerabend's criticisms of what I will call the 'myth of method'.

The 'myth of method' refers to methodological monism. It is 'myth' in Feyerabend's sense because it is a distorting ideal which lends false prestige to the sciences. This latter point is important, because one should bear in mind that Feyerabend's criticisms of methodological monism are not criticisms of the importance of methodologies in science, but only of what he sees as the false and distorting idea of 'the scientific method'. The myth of method, then, refers to the idea that there is a singular, formalised scientific method which is both historically invariant and context insensitive. *Against Method* is a sustained assault upon the myth of method, but does not entail any rejection of the need for methodology in science. Instead, Feyerabend is trying to restore an account of scientific methodology which is both historically accurate and philosophically persuasive. The purpose of the critique is, therefore, to contribute to scientific practice by liberating it from the false methodological demands of the logical positivists and other advocates of methodological monism. This has other beneficial consequences because the myth of method supports, and is supported by other 'myths' regarding the sciences, such as its unique claims to rationality and objectivity, its value-neutrality and its autonomy from social and political factors. Feyerabend's critical

[25] See Tsou (2003) for a discussion of these various interpretations.

strategy is to dismantle various myths about the sciences—starting with the myth of method—and to contribute to a reconceptualisation of the sciences.

Feyerabend makes the positive functions of his critique of methodological monism clear. The Preface to *Against Method* includes the remark that '[s]cience must be protected from ideologies'—by which Feyerabend means 'myths', like that of method. Feyerabend is not advocating a 'hands off' attitude and, indeed, he affirms that scientists can 'profit from a philosophical education' just as long as philosophical ideas and models are 'examined and freely accepted', rather than being 'imposed' (Feyerabend, 1993: viii).[26] Indeed, Feyerabend often explained, with no false modesty, that the 'interpretation of scientific knowledge' he defends was not original, and that it was 'a triviality for physicists like Mach, Boltzmann, Einstein and Bohr'. These physicists developed methodological norms from their reflections on scientific practice and so provided the sort of practice-based normative methodology that Feyerabend insisted upon; however, their insights were 'distorted beyond recognition' by positivist and logical positivist philosophers of science (Feyerabend, 1993: viii). There is therefore a need for 'a far more complex account of scientific knowledge than that which had emerged from positivism and similar philosophies' (Feyerabend, 1993: x). Repairing these distortions was one of Feyerabend's main aims. He hoped that by challenging the myth of method he could contribute to the construction of a perspective on the sciences which could benefit from 'interesting results in the history of science' and in turn provide 'new insights into the limits of reason' (Feyerabend, 1993: viii). The critique of methodological monism may be cast in negative terms but there should be no doubt that it was conceived as a positive project.

Against Method is less dogmatic and more exploratory than is often supposed. In the Introduction to the Chinese Edition, Feyerabend explained that *Against Method* 'proposes a thesis and draws consequences from it' (Feyerabend, 1993: 1). Although there are many historical and philosophical arguments in the book, its main aim is to offer a certain image of the sciences—as pluralistic and disunified—and to drew out some of its implications. This strategy is significant, for it explains many otherwise unusual features of the book. Feyerabend often remarked that *Against Method* was a 'collage' of earlier papers, and cited this as a reason for his puzzlement at the hostile response that the book received (Feyerabend, 1995: 139). However, although the arguments and case studies in *Against Method* may not have been new, the implications that Feyerabend began to draw from them were. Arguing that the sciences are methodologically pluralistic is one thing; but suggesting that this undermines the typical demarcation between science and non-science (especially when the latter is illustrated by voodoo) is another! Therefore, what one sees in *Against Method* is Feyerabend beginning to articulate the radical implications of his emphasis upon the pluralistic nature of the sciences. Many of these implications are listed in the Analytical Table of Contents, often in the form of pithy, aphoristic statements. Amongst many possible examples, Feyerabend argues that his arguments may entail the conclusions that

[26] Quite how philosopher might 'impose' their ideas is not stated, but Feyerabend may have had in mind the promotion of such 'myths' in courses of scientific education.

applying familiar models of science would have 'disastrous consequences' for scientific practice; that proposed demarcation criteria 'break down' when one compares science and non-science; that neither science nor rationality are 'universal measures of excellence' and, finally, that science is 'neither a single tradition, nor the best tradition there is', except for those ignorant of alternatives (Feyerabend, 1993: 7-8).

Many critics interpreted these implications as the necessary consequences of the arguments. As such, they convicted Feyerabend of promoting irrationalism, 'anti-science' sentiments and of lapsing into culturally relativistic polemics about the equality of science with voodoo and the like. Chapter one detailed these charges, and their enduring and distorting effect upon scholarly assessments of Feyerabend's later work. Many of these implications, of course, were radical: some of the claims, like the disunity of science, have become widely accepted within the philosophy of science (see Dupré 1993 and Galison and Stump 1996). Others, such as the demarcation of scientific and non-scientific practices and systems, remain controversial. However, critics arguably too often failed to distinguish between conclusions which Feyerabend thinks are plausible, and those which are offered as either provocation or stimuli for further speculations. Feyerabend's writing may not always be transparent but, as Oberheim warns, '[a] little more attention to detail and a better appreciation of Feyerabend's rhetoric could have prevented at least three decades of a perpetuating misunderstanding' (Oberheim, 2006: 34). I suggest that many of the radical proposals contained in *Against Method* are just that—proposals—and are not intended as substantive views that Feyerabend is committed to. Feyerabend used his critique of methodological monism as a way to open up new critical perspectives on the value and structure of the sciences. In doing so, he employed historical case studies, philosophical arguments, and provocative rhetoric and proposals; however, the aim of all of these critical strategies was to enable critical engagement with the sciences, rather than to undermine them.

In the remainder of this Chapter I develop this interpretation of Feyerabend by focusing on *Against Method* and *Science in a Free Society* respectively. I argue that *Against Method* represented Feyerabend's initial attempt to encourage critical reflection on the sciences. That book had two aims: the first was to critique methodological monism, and the second was to identify and explore various implications that critique had for our understanding of the sciences. However, most critics failed to distinguish between these two aims. As a result, they accused Feyerabend of illegitimately drawing radical conclusions that his arguments could not sustain, and of substituting rhetoric for argumentation. Unfortunately, Feyerabend responded to these charges by amplifying his rhetoric and making increasing extreme claims.

I conclude the Chapter by arguing that *Against Method* and *Science in a Free Society* set the scene for the later philosophy. *Against Method* established Feyerabend's critical project, but the ambiguity of its rhetoric—and the 'illiteracy' of its critics—obscured the combination of critique and speculation. In *Science in a Free Society*, Feyerabend radicalised his claims about the sciences by identifying the most extreme consequences of his criticisms of the sciences. His subsequent work can therefore be understood as an attempt to assess which, if any of those radical claims were tenable.

2.2 Against Method.

Against Method had a complex history. In much the same way that Samuel Beckett was once apparently described as having written three different plays with the same name, Feyerabend wrote three different books with the same title. There are three works entitled 'Against Method', one long essay and three books.[27]

In 1970, Feyerabend published a long article entitled 'Against Method: Outline of an Anarchistic Theory of Knowledge' (Feyerabend, 1970a). A few years later, Imré Lakatos proposed to Feyerabend that they write a book together, and work began immediately.[28] The book was provisionally called *For and Against Method*, and the writing of it is documented in the surviving Feyerabend-Lakatos correspondence.[29] Sadly, Lakatos' untimely death put an end to the joint project, so Feyerabend pressed on and published his own contribution. In typically candid prose, he later explained that *Against Method* 'is not a book, it is a collage. It contains descriptions, analyses, arguments that I had published, in almost the same words, ten, fifteen, even twenty years earlier.' Feyerabend 'arranged them in a suitable order, added transitions, replaced moderate passages with more outrageous ones, and called the result "anarchism"', freely admitting that he 'loved to shock people' (1995: 139, 142). Indeed, much of Feyerabend's published writing was a 'collage' of this sort; certain passages are recycled, certain favoured quotations regularly reappear, and so on.[30]

When *Against Method* was first published it met with a hostile reception—of which more in a moment. Feyerabend was initially puzzled by this. One reason was that his main historical and philosophical claims had already been made elsewhere, in person or on paper. Of course, presenting them in a sustained work may have amplified their force, and perhaps it was only in *Against Method* that the full range of Feyerabend's critical claims became clear: science is not unified, whether methodologically or theoretically; science is radically pluralistic and 'disunified'; scientific theories are not value-free; scientific research is affected by social and political factors, rhetoric, propaganda, and historical conditions. Feyerabend offers a 'catalytic' treatment of the philosophy of science, as he challenged 'virtually every major assumption underlying the empiricist (and critical rationalist) accounts of scientific progress':

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[27] In fact, there are four editions of *Against Method* (1975a; 1988; 1993; 2010). However, the fourth edition was not prepared by Feyerabend and the editorial changes are arguably unhelpful; they obscure certain features of Feyerabend's later philosophy. See Kidd (forthcoming b) for an account of these criticisms. Throughout this thesis, I refer to the third edition (Feyerabend 1993) unless otherwise stated.

[28] Feyerabend (1993: vii) offers this account: 'In 1970 Imré Lakatos, one of the best friends I ever had, cornered me at a party. "Paul", he said, "you have such strange ideas. Why don't you write them down? I shall write a reply, we publish the whole thing and I promise you—we shall have lots of fun"'. He also adds that the manuscript was once lost in London and was retrieved by Interpol!

[29] See Feyerabend and Lakatos (1999).

[30] See the comments in Hacking's introduction to Feyerabend (2010).

> 'The demand for theoretical consistency, the reliance on empirical fact, the need for increased confirmations, the reduction of *ad hoc* theorizing, all of which were believed to play a critical role in advancing knowledge, were found problematic' (Gergen, 1986: 119)

Many of these claims had been made before, of course, and the 1970s were of course a time of radical change for the philosophy of science, following in the wake of the 'historical turn' and the emergence of 'post-positivist' challenges to science.

Against Method also challenged many of the established norms of the philosophy of science. Its style, use of humour, and the liberal appeals to figures such as Brecht and Lenin puzzled and frustrated many readers. Feyerabend's style was, as one sympathetic reviewer put it, '[o]ne of the most remarkable and least understood aspects' of his books (Steedman, 1982: 726). Yet, for all its excesses, wrote one reviewer, *Against Method* 'fulfil[s] the task set to all good philosophy of crystallising complacently held opinions into an absorbing and profitable conclusion' (Lieberson, 1977: 492). It also issued its challenges in a charged and polemical manner. Feyerabend, as one commentator put it, 'does not merely "write a book" in the conventional sense', but instead 'assaults his readers in his attempt to reach them and to engage them' (Mitroff, 1976a: 346). For many readers, what this 'unconventional' literary style resulted in was an aggressive polemic. Ernest Gellner, for instance, wrote that *Against Method* was 'a melange of truisms and extravagances ... presented as a recipe for our [epistemological and social] liberation', written in a 'rasping, boastful, derisive' tone, and filled with a 'Californian-Viennese *Schmalz* [which] leaves ... a disagreeable taste in the mouth' (1975: 341-242)—and this, from the review for the *British Journal for the Philosophy of Science*! Another writes that, 'One might be inclined to dismiss Feyerabend as a clown ... were it not for the fact that he is not amusing enough to fit the role' (Schnädelbach, 1991: 433)—and this remark appeared in a contribution to Feyerabend's *festschrift*! Other reviews were less hostile, but no less critical. A consensus emerged that *Against Method* was guilty of wilful historical distortion, philosophical extremism and unprofessional rhetorical excesses.

Feyerabend was shocked and angered by the criticisms.[31] Two things most struck him about the reviews (see Feyerabend, 1978: 125). First, many of the reviewers were, to his mind, guilty not only of the 'nastiness' they accused him of but also of a general philosophical 'illiteracy'. A common complaint was that reviewers could not distinguish between jokes and serious points, and could not tolerate jocular remarks and asides. Second, and this is more speculative, Feyerabend perceived the criticisms of *Against Method* as slights against Lakatos' memory; the book had been a joint project, and only Lakatos' death—which had greatly depressed him (Feyerabend, 1995: 130f)—put an end to it. It is therefore quite possible that Feyerabend interpreted the hostile

[31] See Feyerabend (1995: Ch12) for his own account of the reception of *Against Method*.

reception of *Against Method* as a slight against Lakatos.[32] (Whether this is fair or not is another matter).

The critical reception of *Against Method* marked a turning point in Feyerabend's philosophy, in two senses. First, it precipitated his movement away from mainstream philosophy of science. Prior to 1975, the majority of Feyerabend's work reflected contemporary debates in the philosophy of science—theory choice, empiricism, and so on—and it appeared in familiar journals of the discipline. To take just one example: prior to 1975, Feyerabend published ten articles in the *British Journal for the Philosophy of Science*, but after 1975, he published just three—two reviews, and a response to Gellner's review of *Against Method*.[33] Indeed, after 1975, most of Feyerabend's papers appear in non-philosophy journals, conference proceedings, and edited volumes. *Against Method* therefore prompted Feyerabend to move away from mainstream philosophy of science; and many philosophers of science were, of course, quite pleased to let Feyerabend go.

Second, *Against Method* also marked the beginning of Feyerabend's turn to a wider set of philosophical and, increasingly, political concerns. Prior to *Against Method* most of his work reflected various epistemological and methodological issues in the sciences; afterwards, these concerns are augmented by new moral, social, political, environmental, and cultural interests. Although historical and philosophical studies of the sciences remained the 'core' of Feyerabend's work, it was increasingly applied to a whole host of 'applied' issues. Most obvious amongst these was a growing interest in cultural diversity and the practical and cognitive efficacy of non-Western, 'non-scientific' cultures (the topic of the next two Chapters).

2.3 Feyerabend's normative philosophy of science.

The preceding remarks suggest that *Against Method* was the real turning point of Feyerabend's philosophical development. This claim should now be clarified. As mentioned earlier, much of what Feyerabend actually defended had appeared elsewhere, and the book was of course not universally derided. Even those reviewers who did not agree affirmed the great value of the book. For one reviewer,

> '*Against Method* ... is full of contradictions, over- and under-statements, and enough *ad hominem* statements to give even the most liberal student of rhetoric apoplexy. This is not to condemn Feyerabend. Indeed, I applaud him all the more for breaking through the hypocrisy, dullness, and triviality of so much of contemporary academic philosophy' (Mitroff, 1976a: 347)

Feyerabend would doubtless applaud. In his correspondence with Lakatos, he makes clear his dissatisfaction with the discipline of philosophy of science. These discontents were also made provocatively clear in the titles of two papers which appeared in the

[32] See also Feyerabend's obituary of Lakatos (Feyerabend, 1975b).

[33] There is a complete bibliography of Feyerabend's works, including interviews and published lectures, in Oberheim (1999).

years preceding *Against Method*, 'Philosophy of Science—A Subject with a Great Past' (Feyerabend, 1970b), and 'Die Wissenschaftstheorie—eine bisher unbekannte Form des Irrsins' (Feyerabend, 1973)—'The Philosophy of Science—A Previously Unknown Form of Mental Disease?' The claim of these two papers was that the philosophy of science had lost its connections to the history and practice of science. The results were increasingly abstract models (of scientific methodology, say) which were not only historically vacuous but which would also be disastrous if they were actually applied in scientific research. Feyerabend urged his peers to return to what he perceived as a 'golden age' when the philosophy of science was practised with a close and continuous connection to scientific practice, rather than being led by 'armchair methodologists'.

The heroes of Feyerabend's normative proposals for the philosophy of science were figures like Aristotle, Ernst Mach, and Niels Bohr. Two things are worth noting about Feyerabend's heroes. First, they were all both philosophers of science and practising scientists—or, perhaps better, they were inquirers for whom the distinction between the practice and the philosophy of science was minimal, if not absent. As Dean Rickles (2008: 6) recently put it, for scientists like Einstein, Heisenberg, and Bohr, 'physics and philosophy of physics are not really so different'.[34] Their philosophies of science are therefore 'activist', in the sense that 'philosophy of science interacts more directly with scientific results' (Searle, 2003: 11).[35] Second, Feyerabend's 'heroes' also saw important connections between science and other dimensions of human life. Mach, for instance, is praised for 'want[ing] to change science not just to increase its efficiency, but also to preserve freedom of thought' (Feyerabend, 1970c/1999: 196).[36] Aristotle is celebrated for his development of 'a humane science', one 'adapted to the requirements of a balanced and rewarding life', and for his argument that the 'task of thought' is 'to comprehend and perhaps to improve what we perceive and do when engaged in our

[34] The philosophical interests of late nineteenth and early twentieth century physicists are well-documented, although discussions often emphasise their philosophical reflections on the sciences. Whilst this is understandable, it does tend to obscure the important point that Bohr, Heisenberg, Planck and others also had much to say about language, religion, and ethics. For an excellent discussion and assessment of Heisenberg's claim that Bohr was 'primarily a philosopher, not a physicist', see Pais (1991: Ch19). On Heisenberg and Planck on language and religion, see Heisenberg (2007).

[35] Such 'activism' continues today, for instance with the establishment of the Society for Philosophy of Science in Practice. It has also become a major theme of contemporary history and philosophy of science—another instance of Feyerabend's prescience.

[36] In a letter to Harald Hoffding of 6th September 1905, Mach writes, 'I was very pleased that you count me among 'philosopher-scientists' [*philosophierende Naturwissenschaftler*] and not among 'philosophers'. My aim and my profession is not to solve philosophical problems, but only to purify the methodology of the natural sciences from old disturbing pseudoproblems' (quoted in Hentschel, 1985, 391). The resonances with Feyerabend's own philosophy is obvious.

ordinary everyday affairs; it is not to wander off into a no-man's-land of abstract and empirically inaccessible concepts' (Feyerabend, 2001: 217-218).[37]

Feyerabend's interpretation of Mach and Aristotle has been challenged.[38] Too often, as Stephen R.L. Clark points out, Feyerabend's interpretations of his heroes reflects his own predilections rather than strict scholarly accuracy; Aristotle, for instance, is 'less of a pluralist and pragmatist than Feyerabend allows' (Clark, 2002: 257). However, the accuracy of Feyerabend's interpretations is less important here than what they can tell us about his own concerns. The interpretations of Mach, Aristotle and others illustrate the normative model of a 'good scientist' that Feyerabend has in mind: they are 'philosopher-scientists', engaged in both scientific practice and philosophical reflection upon it, and they also have wider interest in social and political affairs, informed by a generous and eclectic historical perspective. They are, if you like, *activist*, *civic*, and *historical*. Feyerabend's normative 'philosopher-scientist' has a clear command of history, philosophy, science, and politics, and uses the resources of each, individually and in concert, for both the growth of knowledge and the improvement of humankind.

It is this model which informed Feyerabend's criticism of the philosophy of science. what Mitroff described as the 'hypocrisy, dullness, and triviality of so much of contemporary academic philosophy' arose—it is alleged—because philosophers of science ceased to be 'activist', 'civic', and 'historical'. Under the influence of logical positivism, the philosophy of science detached itself from actual scientific practice, it lost its appreciation of the historical dimension of science, and, more worryingly for Feyerabend, it lost its interest in the wider moral, social, and political aspects of human life. This complaint has been supported by recent historians of the philosophy of science. Heather E. Douglas (2009, esp. Chs2-3) argues that the philosophy of science deliberately cultivated its 'value-free' image of science and philosophy of science in an attempt to insulate itself from political scrutiny during the Cold War. David Stump (2002: 155) similarly suggests that such attempts have shaped contemporary philosophy of science. The philosophy of science, he complains, 'today suffers from a ... general lack of political engagement', despite the fact that,

> '[B]y taking science as the object of philosophical reflection, philosophers of science are engaging an institution that plays a major role in contemporary life and are therefore dealing with issues that are often directly related to issues of public concern. Philosophers of science therefore retain their potential to affect public discourse by performing their role as interpreters of science and judges of scientific practice.' (Stump, 2002: 157)

The last few decades have, happily, seen a revival of social and political concerns in the philosophy of science. Much of this has taken the form of rejecting the 'value-freedom' of scientific research and, by extension, the neutrality of the philosophy of science. hence Harold Kincaid, John Dupré, and Alison Wylie argue that there are 'defensible

[37] See also Feyerabend (1995: 119).

[38] By Hentschel (1985) and Clark (2002) respectively.

positions other than the dichotomous views that good science must always be value free and that all science is politics' (2007: vii). Similar claims have also been made by feminist and postcolonial historians and philosophers of science, such as Evelyn Fox Keller (1985), Helen Longino (1990), and Sandra Harding (1986, 1991), the latter of whom I return to in later chapters.[39]

Other philosophers have used more specific strategies. Philip Kitcher (2001) develops an account of 'well-ordered science' whose explicit aim is to reinvest scientific research—and the philosophy of science—with 'non-epistemic values' reflecting broad moral, social, and political concerns. John Dupré (1993, 2003) has similarly stressed the social and political issues inherent in the philosophy of science, especially in the cases of evolutionary psychology and human classification. Interestingly, Dupré, who has perhaps done most to reintroduce social and political concerns in the philosophy of science, once remarked that,

> 'the philosopher with whose general perspective on science I find myself most closely in agreement [is] Paul Feyerabend ... an oasis of serious critical analysis on a topic that, astonishingly enough, has been almost entirely ignored by philosophers of science [*viz*., the social and political position of science in contemporary society]. Feyerabend's notorious epistemological anarchism is intended above all as a therapy against the antidemocratic and oppressive consequences of the monopoly of epistemic authority sustained by science.' (Dupré, 1993: 262-263)

The claim unifying these philosophers is that the philosophy of science was mistaken to dissociate itself from the wider humanitarian concerns of its earlier incarnations. Even without subscribing to Feyerabend's perhaps tendentious interpretations of Aristotle, Mach and other 'heroes', there is a clear consensus amongst both contemporary historians of philosophy of science and contemporary philosophers that moral, social, and political issues must be reintroduced into the philosophy of science. In this, they follow Feyerabend's complaints, first raised in the early 1970s, about the 'irrelevance' of philosophy of science and the need to recapture its 'great past'.

If I am correct, then *Against Method* was one of the first works in recent philosophy of science to both draw attention to this problem, and to attempt to respond to it; in so doing, it was ahead of its time, but, alas, too much so. The claims that Feyerabend made in the mid-1970s alienated him from the mainstream of the philosophy of science, and subsequent histories of philosophy of science have tended to overlook his prescience. The silver lining of this scholarly occlusion is, of course, that the time is now ripe for Feyerabend's significance to these contemporary developments to be made clear. However, before doing so, the rest of the story of the reception of *Against Method* should be told.

[39] Keller and Longino (1996) is an excellent introduction to feminist philosophy of science.

2.4 Science in a Free Society.

The foregoing remarks have been generally sympathetic to Feyerabend. *Against Method* offered not only revisionary accounts of scientific methodology but also issued a stern challenge to the discipline of the philosophy of science. The aim of both was to encourage constructive critical reflection on the sciences. Subsequent developments in the philosophy of science have, moreover, vindicated many of Feyerabend's claims. Contemporary philosophers of science generally concede that science is pluralistic, value-laden, shaped by historical and social factors, and connected to social and political concerns. These are all key features of Feyerabend's account of the sciences, and they have all gone on to become generally accepted commitments of subsequent philosophy of science.[40] The fact that Feyerabend is not therefore celebrated as a prescient philosopher of science therefore poses a puzzle, and one which grows when one considers the reputation that Feyerabend *does* have—a polemical, 'anti-scientific' cultural relativist.

In Chapter One, I argued that this 'bad reputation' is unwarranted, insofar as the later Feyerabend is neither anti-science, nor a cultural relativist, and that, on the contrary, he offers a positive account of the role of the sciences in the modern world. My account there did not explain, however, quite how the 'bad reputation' arose, and it is now time to repair this omission. To recap, after the hostile reception of *Against Method*, Feyerabend wrote a book-length reply entitled *Science in a Free Society* (1978a). The first two parts of the book are entitled '*Against Method* Revisited' and 'Science in a Free Society' and they reiterate—and exaggerate—the main claims of *Against Method*. This 'sequel' was intended both to clarify the claims made in *Against Method* which Feyerabend thought his critics had misunderstood and also included a series of replies to the more aggressive of his critics (see Feyerabend 1976a, 1977, 1978b, 1978c). These formed part three of the book, 'Conversations with Illiterates', a title which makes their tone and content clear, and which 'constitute lessons in intellectual annihilation' (Gergen, 1986: 122).

It is *Science in a Free Society* which is responsible for the 'bad reputation' that Feyerabend came to enjoy (or suffer). It is in this book that Feyerabend argues that cultures are separate and isolable and that legitimate inter-cultural criticism is therefore impossible (Feyerabend, 1978a: 79-86). It is in this book that Feyerabend denies the special cognitive and practical authority of the sciences (Feyerabend, 1978a: 98-105). It is in this book that he makes enthusiastic appeal to astrology, parapsychology, and alternative medicine (Feyerabend, 1978a: 91-96), and it is in this book that his prose is, even by his own standards, at its most aggressive and polemical. Finally, it is in this book that Feyerabend deserves the 'bad reputation' that came to jeopardise the appreciation of his later philosophy.

[40] Denise Russell (1983) was one of the earliest writers to remark upon how Feyerabend's work anticipated developments in the sociology of science and to note his interest in the question of the value of science and its implications for social control of science.

These remarks make it clear that *Science in a Free Society* was, by all accounts, not a success. Feyerabend himself later expressed his disappointment with it, and stated his wish not to see it reprinted.[41] That said, he did not repudiate it publicly in print, a gesture which would have done both him and his work a great deal of good, and perhaps prevented the lapse of the later philosophy into what Bertrand Russell once neatly called 'intellectual oblivion'. Of course, Feyerabend's response to this would no doubt have been that he was not concerned about the opinions of philosophers of science—'dull' and preoccupied with technicalities and trivialities as he alleged they were. This is surely disingenuous, and also lacking in professional scholarly virtues. In any case, it is not yet clear why Feyerabend did not want to see *Science in a Free Society* reproduced; after all, this is the book in which he first states his concerns about the hegemony of science, the value of cultural diversity, and the efficacy of non-scientific practices and systems. Indeed, *Science in a Free Society* is the first place in which Feyerabend discusses at length the mutually enriching relationship between cultural and epistemic pluralism—which, as I argue in later Chapters, became a central theme of Feyerabend's later philosophy.

I suggest that one should interpret *Science in a Free Society* as representing various extreme positions which Feyerabend hastily embraced (and perhaps earnestly) but from which he spent much of his later career gradually retreating. The fact that Feyerabend did retreat from its extreme positions is important, because many philosophers have taken that book to represent something like Feyerabend's 'mature' philosophical positions. This is unfortunate, of course, since the views on science, culture, and philosophy of science that it defends are untenable and often unsophisticated. As a result many philosophers, especially those 'of science', simply stopped reading Feyerabend at that point. *Science in a Free Society* was a step too far, even if it did win Feyerabend great acclaim from the many radical 'relativist' movements of the late 1970s, and with later 'anti-science' groups, to each of whom he became a 'hero of the anti-technological counter-culture' (Preston, 2009: §2.17). Unfortunately, it placed Feyerabend firmly outside the philosophy of science—a wilful, self-imposed eviction which he never attempted to repair.

2.5 'On the Critique of Scientific Reason'.

Science in a Free Society aligned Feyerabend with various radical political and philosophical positions, such as anarchism, irrationalism, and 'counter-cultural' trends. However, I suggest that Feyerabend was not in fact adopting these positions; instead, he

[41] It is perhaps telling that, in the years immediately following its publication, Feyerabend authorised the translation of *Science in a Free Society* into German (1979), Italian (1981), Japanese (1982) and Spanish (1982), but only twice thereafter—into Persian in 1987 and Chinese in 1990. This is unlike *Against Method*, *Farewell to Reason*, and *Three Dialogues on Knowledge*, each of which was regularly translated and reprinted long after their publication. For bibliographical details, see Feyerabend (1999: 228-230).

was inviting us to consider them because, to his mind, they were too often simply dismissed without discussion. This becomes obvious in the first chapter of part two of the book, entitled 'Two Questions' which Feyerabend claim 'arise in the course of any discussion of science' (Feyerabend, 1978a: 73). These two questions are: 'What is science' and 'What's so great about science', and Feyerabend complained that there 'hardly exists anyone' who asks the second question because '[t]he excellence of science is *assumed*, it is not *argued for*'. Therefore one aim of *Science in a Free Society* is to ask this question and to provide motivation for others to do so. As Feyerabend writes:

> 'This phenomenon, though remarkable and somewhat depressing, would hardly bother a sensible person if it were restricted to a small number of the faithful: in a free society there is room for many strange beliefs, doctrines, institutions. But the assumption of the inherent superiority of science has moved beyond science and has become an article of faith for almost everyone.' (Feyerabend, 1978a: 74)

There is hyperbole here, but the point that Feyerabend is making seems to run as follows: the presumption of the 'excellence of science' has become increasingly influential in the life of developed world societies (such as medicine and education). This presumption has therefore moved from the 'small number' of scientists and philosophers of science and come to affect many of the major institutions and policies of public life; it is therefore now a political issue. Feyerabend urges us to take seriously questions about the social and political authority of the sciences, partly because of his perception that this is a neglected question, and partly because of his concerns that certain false images of science—like the 'myth of method'—are interfering with our capacity to appreciate and address this question. This interpretation makes clear the connection between Feyerabend's earlier work in scientific methodology and his later social and political concerns. There is nothing 'inherently liberating' in the sciences, and their emancipatory power will depend upon our having an accurate understanding of their nature and limitations; however, science, 'being a product of human effort has its *faults*', and identifying and repairing these faults is—or should be—a key aim of the history and philosophy of science (Feyerabend, 1978a: 75).

Science in a Free Society is Feyerabend's proposal for a 'critique' of science. This is evident in the contemporaneous paper 'On the Critique of Scientific Reason' (Feyerabend, 1976b), much of which was reproduced as chapter one, part two of *Science in a Free Society*. The title 'On the Critique of Scientific Reason' is, of course, a nod to Kant's *Critique of Pure Reason* and I suggest that Feyerabend intended his critique of scientific reason to be a 'critique' in Kant's sense. In the *Critique*, Kant 'rejects extravagant claims made on behalf of reason' and therefore also rejects systems, like Leibniz's, which indicate 'reason pressed beyond its proper limits' (Cooper, 2003: 296). Feyerabend's critique has the same aim: he criticises 'extravagant claims' made on behalf of science, such as that it is methodologically unified, and so seeks to identify the 'proper limits' of scientific inquiry. Feyerabend clearly intended

his 'critique of scientific reason' to be comprehensive: 'a true Critique of Scientific Reason cannot anything for granted. It must examine the most obvious assumptions' (Feyerabend, 1976b: 112). This is why *Science in a Free Society* makes such radical claims, like the 'proposal' that science should be separated from the state; these are not serious proposals, but rhetorical means of identifying the possible, extreme limits of a critique of the structure and value of the sciences. When Feyerabend writes that a critique of scientific reason may see the sciences 'abolished [or] play[ing] a relatively small role' in future societies, he is not engaging in malicious, anti-science polemics; instead, he is offering certain provocative, yet possible answers to the question 'what's so great about science'. Feyerabend wants us to engage in a 'critique of scientific reason' and exploring 'radical' conclusions and possibilities is an essential feature of this.[42]

The aspect of 'critique' was noted by some reviewers of *Science in a Free Society*. I will focus on three reviews, those from the *British Journal for the Philosophy of Science*, *Philosophical Quarterly*, and the *Review of Metaphysics*. 'R.H.S' (1981), writing for the *Review*, makes the 'critique' explicit, explaining that Feyerabend 'challenges some of the basic presuppositions of the enlightenment; namely, that intellectual and social progress can be achieved only under the control of reason with the aid of science' ('R.H.S.', 1981: 384). The same reviewer goes on to remark, 'I can think of no philosopher since Hume who has been able to expose, and willing to challenge, so many of the presuppositions underlying our tacit confidence in rationality and science' ('R.H.S.', 1981: 385). Stephen R.L. Clark (1980) notes that Feyerabend's critique is intended to help us 'insist on liberty' in the face of those 'who can offer no argument for their tyranny' (Clark, 1980: 174). Noretta Koertge (1980) similarly recognised that Feyerabend's 'epistemological anarchism' was 'a specific remedy for today's philosophy of science', not 'an elixir for all seasons' (Koertge, 1980: 385). However, she complained that she 'find[s] Feyerabend's critique too wide-sweeping to be of much use… and his specific proposals for counteracting scientism and the cult of the expert rather naïve' (Koertge, 1980: 389). This objection relies on the presumption that Feyerabend was trying to provide specific proposals: however, I argued that his aim

[42] Of course, there is still much rudeness and, at times, nastiness in *Science in a Free Society*. The suggestion that the philosophy of science should 'not be reformed, but … allowed to die a natural death' is one example (Feyerabend, 1978a: 122). Moreover, Feyerabend's was often easily provoked to anger by his perception of the 'conceit' and 'pretension' of intellectuals, especially where such (perceived) conceit and pretension was accompanied by political power. Feyerabend explained that his early 'political' papers, such as 'Experts in a Free Society' (Feyerabend, 1970c), were written 'in a fit of anger and self-righteousness caused by what I thought were certain disastrous developments in the sciences' (Feyerabend, 1999a: 112). Feyerabend often derided the 'conceit' of intellectuals (himself included); see Feyerabend (1978a: 118, 121) and (1993: 264, 267). Grazia Borrini-Feyerabend (per. comm.) tells me that Feyerabend was always especially critical of 'pontifications and self-aggrandizements'.

was simply to inspire and enable philosophers of science to take seriously the question of the excellence of science.

2.6 Conclusions.

This Chapter offers a scholarly reinterpretation of the 'turn' in Feyerabend's philosophy marked by the publication of *Against Method* and *Science in a Free Society* (*c*.1975-1978). This period is important because it marks what is generally perceived as the shift from the 'early' to 'later' philosophy. It is also marred by controversy. *Against Method* was controversial enough, but Feyerabend exacerbated the charges against him by ostensibly embracing various radical political and philosophical views. This compounded his 'bad reputation' within the philosophy of science and began the slow decline in the quality and significance of his work—or so it is thought. I challenged this interpretation of these two books. *Against Method* introduced Feyerabend's challenge to methodological monism and introduced his suggestion that radical philosophical reassessments of the sciences could have political implications (for instance, of judgements about the value and authority of the sciences). *Science in a Free Society* was intended to develop these ideas; however, Feyerabend, stung by the criticisms of *Against Method*, let his rhetoric and anger get the better of him and this unfortunately obscured the 'critique of scientific reason' he was trying to initiate. Into his later period, this critique was developed in more moderated terms but. But by then, Feyerabend was not read by, nor addressed himself to, philosophers of science.

Chapter Three

Ch3 Defending Epistemic Pluralism

3.1 Feyerabend's epistemic pluralism.
3.2 Chang' epistemic pluralism.
3.3 Harding's epistemic pluralism.
3.4 History, pluralism, and humane concerns.
3.5 Conclusions.

Chapter two detailed Feyerabend's rejection of methodological monism, and his defence of scientific pluralism. However, one consequence of scientific pluralism is that the very idea of 'science', as enjoying a distinctive 'essence', or whatever, dissolve; and this prompted Feyerabend to consider the value of practices and epistemic systems which were previously classified as 'unscientific. *Science in a Free Society* did this, badly, but Feyerabend's account did improve—that's the topic of chapter four. This chapter 'formalises' the account of epistemic pluralism that Feyerabend developed, both to secure the claims in Chapter Two and to prepare the way for Chapter Four.

3.1 Feyerabend's epistemic pluralism.

Although best known, perhaps, as an 'anarchist', it would be fairer to describe Feyerabend as a pluralist. Indeed, one could quite plausibly argue that Feyerabend's philosophical career consisted in a sustained defence of a epistemic pluralism, against all forms of 'dogmatism' or 'monism'. This is evident in his advocacy, in the 1960s, of theoretical pluralism and the principles of proliferation and tenacity, in his criticisms of Kuhn's model of science in 'Consolations for the Specialist', in the 'epistemological anarchism' of *Against Method*, and in his later remarks, throughout the 1980s and early 1990s, about cultural and epistemic diversity and the 'abundance' of reality. Oberheim (2006) notes that Feyerabend's arguments and strategies changed as his interests and concerns evolved over time and therefore credits him with adopting a flexible 'philosophical pluralism'. Feyerabend was also a pluralist on many fronts: about theories, methods, cultures, moral systems, and so on. Although his arguments and attitudes towards the various forms of pluralism are, as one might expect, different, the underlying sentiment is clearly that having resource to a plurality of alternatives—whether these be scientific theories, 'forms of life', or whatever—invariably promises greatest practical and cognitive benefits. Pluralism not only maximises criticism, empirical content and other epistemic values, but also promotes various 'humanitarian' concerns, such as promoting progressive intellectual, moral, and political virtues, like tolerance and open-mindedness. In Chapter five I say more about the humanitarian dimensions of pluralism and suggest that Feyerabend was greatly indebted to John

Stuart Mill's claims that having resource to a 'diversity of modes of thought and action' is a precondition for a flourishing human life.[43]

The pluralist reading of Feyerabend is not controversial, even if his 'pluralist' credentials are not widely acknowledged. Certainly many contemporary scientific pluralists generally do not identify him as an important precursor to current enthusiasm for pluralism.[44] In Chapter one, I identified four common charges against Feyerabend which may help to explain his absence from contemporary pluralist debates and another could be added from the work of Eric Oberheim. In a recent book, Oberheim argues that Feyerabend's 'pluralism' does not consist in 'a cohesive, stable set of doctrines or set of principles', but, rather, in 'a pluralistic philosophical method that calls for pluralism in science and philosophy in the pursuit of progress' (Oberheim, 2006: 287). Feyerabend's 'pluralism' was premised upon the value of epistemic diversity, both as a means to maximising inter-theoretic criticism, empirical content of our theories, our epistemic engagement with reality, and as a means of reflecting the diverse aims and values motivating human inquiries into the world. Moreover, pluralism is, as Feyerabend argued, the most appropriate attitude to take towards the history of science, as evinced by his proposal that the 'whole history of thought' should be 'absorbed into science' for its improvement—and our edification (Feyerabend, 1993: Ch4).

In the following section, I use Hasok Chang's recent defence of epistemic pluralism as a model for understanding Feyerabend's own epistemic pluralism. In the following section, I augment this by drawing upon the work of Sandra Harding.

3.2 Chang's epistemic pluralism.

Feyerabend argues that reality can sustain a radical epistemic pluralism. This means that the objective structure and properties of reality are such that they can be explored and represented using a plurality of mutually-incompatible epistemic activities. However this positive claim raises some important questions which must be answered and which relate to the basic question of just how much epistemic pluralism reality can sustain and the related issue of how pluralistic we need to be. The metaphysical claim that reality *can* sustain a radical epistemic pluralism of course not does entail that such

[43] In the very late stages of this thesis, it occurred to me that there is a further dimension to Feyerabend's commitment to pluralism, which I will briefly sketch but not go into: I suggest that Feyerabend thought that human nature was inevitably diverse, pluralistic, and conflicted. This theory of human nature is much like that defended by Isaiah Berlin. My idea here is that, for Feyerabend, human nature is pluralistic and diverse, such that human activities—like science, or art, or culture—should, under normal circumstances, manifest such pluralism and diversity. I do not intend to elaborate this nascent idea here, but mention it here simply as an idea.

[44] See, for instance, Feyerabend's absence from Kellert, Longino, and Waters' recent and important edited volume, *Scientific Pluralism* (2006). Doubtless a large part of this absence arises from a worry that mere mention of Feyerabend will set off 'relativist' alarm bells, and that recruiting him as a pluralist would do more harm than good.

pluralism *should* be cultivated, especially when one considers familiar pragmatic objections to pluralism (such as the greater demands it poses upon finite human and material resources). I argued in the last section that Feyerabend thinks that although there *are* metaphysical limits to epistemic pluralism, these are far less restrictive than philosophers have tended to suppose. Indeed, one could argue that Feyerabend's position is that we are likely to encounter other limitations to epistemic pluralism long before we hit these metaphysical limits. In Chapters two, three, and four, for instance, I discussed Feyerabend's claim that epistemic pluralism has been hampered by false ideas about the methodological unity of the sciences and the status of 'non-scientific' epistemic activities. What are these other limitations to epistemic pluralism?

There are many conceivable factors which might impose restrictions on epistemic pluralism. Many of these are cited by critics of scientific pluralism. Typical examples include the risk of jeopardising the distinction between science and pseudoscience (Reisch 1998), the financial and other costs of sustaining a diversity of research programmes, and historical and sociological arguments in favour of scientific monism (Kuhn 1962). These are many issues here, and I cannot address all of them here. Instead, my strategy will be to consider a recent defence of a strong form of epistemic pluralism by Hasok Chang (2010; forthcoming). My hope is that establishing a strong normative case for pluralism should make it clear that the further practical problems facing pluralism are worth the cost of establishing and sustaining pluralism. I appeal to Chang for two reasons. First, Chang's 'active normative epistemic pluralism' does not rely on strong metaphysical claims and so is compatible with Feyerabend's own pluralism *and* the metaphysics that grounds it. Second, many of Feyerabend's own arguments for pluralism can be best understood within the account given by Chang (and so, in this sense, Chang succeeds in his ambition to take inspiration from Feyerabend but to proceed in a 'more systematic fashion' than him (Chang, 2010: n4). Chang's active normative epistemic pluralism can therefore be fruitfully used to provide a systematic case for pluralism that can help us to better understand Feyerabend's own. The outcome of this comparison should be to secure a strong normative case for epistemic pluralism.

Chang dubs his position 'active normative epistemic pluralism'. His pluralism is active because it does not simply indicate the benefits of having multiple systems of knowledge, but also actively cultivates them. It is normative because it maintains that having multiple systems of knowledge is of great benefit to scientific research; pluralism is not an 'optional extra' which can be cultivated or not, as one chooses. The aim of science should not be to converge on a single account of the world, and the standard aims of science can be well better served if one has recourse to multiple systems of knowledge.

Chang offers both philosophical arguments and historical case studies to support his pluralism. My interest here is with the philosophical arguments. Chang identifies two sets of benefits of pluralism, namely 'benefits of toleration' and 'benefits of interaction':

Benefits of toleration	Benefits of interaction
Insurance against unpredictability	Integration
Covering different aspects of nature	Co-optation
Multiple satisfaction of an aim	Competition
Satisfaction of multiple aims	

The benefits of toleration refer to the benefits arising from the coexistence of multiple systems of knowledge. Since the future development of science is uncertain, it is wise to cultivate multiple systems of knowledge so that we keep our epistemic options open. The sudden collapse of one system of knowledge would then not be so catastrophic, since alternatives are available which one could appeal to. Epistemic pluralism also allows us to cover different aspects of the world, since each epistemic activity focuses upon only certain aspects of the world and then only at a certain degree of accuracy. Cultivating multiple systems of knowledge maximises the number of aspects of the world that we have epistemic access to, and it also allows for the possibility that our explanatory aims could be satisfied by more than one system of knowledge. Epistemic pluralism also allows for the possibility that multiple explanatory aims can be satisfied. Since human explanatory interests are diverse, it is unlikely that any one system could adequately fulfil all of them; however, a plurality of such systems of knowledge could. Feyerabend also urged us to tolerate and preserve a diversity of epistemic systems on the grounds that they 'insure' us against unexpected developments. One should 'preserve' older, 'obsolete' theories 'for possible future use', both because the process of scientific research 'can change direction in surprising ways' and also to insure us against the vicissitudes of 'recurrent fashions' (Feyerabend, 1987, 33). Feyerabend sometimes lapsed into hyperbole:

> 'There is no idea, however ancient and absurd, that is not capable of improving our knowledge. The whole history of thought is absorbed into science and is used for improving every single theory. Nor is political interference rejected. It may be needed to overcome the chauvinism of science that resists alternatives to the status quo.' Feyerabend, 1993: 33)

This remark should not be taken literally, for two reasons. The first is that it is too assertive. Feyerabend himself repeatedly emphasised the need for case-by-case examinations of the value of epistemic practices and systems; therefore to claim that there is 'no idea … that is not capable of improving or knowledge' is untenable, even if one can appreciate the epistemological motivations behind it. The second is that one cannot foresee the value of epistemic practices and systems because these are contingent upon future theoretical and practical developments. These cannot be identified in advance. Feyerabend's exaggeration here is understandable, but his point is that one should preserve epistemic pluralism because of the 'benefits of tolerance' that Chang identifies. These possible benefits depend upon ongoing theoretical

developments, changes in explanatory interests, and so on, and cannot be foreseen. (I return to this point in Chapter four). One cannot therefore make *ex cathedra* judgements about the value of certain epistemic practices and systems; one can of course entertain doubts about the future utility of certain of these, but that cannot be determined in advance.

The benefits of interaction refer to the advantages that result when multiple systems of knowledge interact with one another. Epistemic pluralism allows for the *ad hoc* integration between multiple systems in situations where neither can achieve a certain aim to an acceptable degree. Even without full integration, different systems of knowledge may co-opt features from one another, such as theories, techniques, or instrumentation. Such co-optation may be one-way or two-way, and it will likely involve the interpretation and adaptation of those features, rather than straight borrowing. And even where integration and co-optation do not occur, competition may arise between different systems of knowledge which is similarly beneficial. This may take the form of psychological and professional pressure to perform better in the face of superior rivals, or other forms of motivation.

Chang presents a variety of arguments in favour of normative epistemic pluralism. These arguments all pertain to the pragmatic value to scientists of cultivating multiple systems of knowledge. Even for scientists convinced of the efficacy of their own research programmes, Chang's account can indicate the benefits they might enjoy from tolerating and interacting with alternative research programmes. There is much to say about active normative epistemic pluralism as Chang presents it, but for my purposes it should suffice to demonstrate the normative case for epistemic pluralism. Certainly it supports Feyerabend's remarks about proliferation and pluralism: since there are no immediate metaphysical limitations to epistemic pluralism, one needs only a persuasive normative argument in its favour. Chang provides that with his active normative epistemic pluralism.

3.3 Harding's epistemic pluralism.

There are further arguments which Feyerabend can add to Chang's case for pluralism. Chang's normative case for pluralism focuses upon epistemological arguments for cultivating multiple systems of knowledge. Other writers have added practical, empirical, and even neurophysiological arguments for the value of epistemic pluralism; interesting as these are, they are not my interest here. Although Feyerabend would consent to the epistemological arguments that Chang offers, he would also introduce a further set of moral and political arguments for epistemic pluralism. The provision of moral and political arguments for epistemic pluralism is not confined to Feyerabend since this same argumentative strategy has recently been used by Sandra Harding (Harding 1998; 2006; 2008).

Harding emphasises the positive and productive relationship between cultural and epistemic diversity. Like Feyerabend's, her work reflects a concern with political and philosophical issues relating to the cognitive and cultural authority of the Western sciences in the modern world. Common to both Feyerabend and Harding is also a

concern to prompt a reassessment of the epistemic merits of other cultures' epistemic traditions, and they use moral and political as well as practical and epistemological arguments to pursue this concern. Harding defends epistemic pluralism using the resources of 'postcolonial science and technology studies'. In her recent work, she focuses upon cross-cultural epistemic diversity and its status in relation to the Western sciences. Central to Harding's work is the claim that cultures and sciences 'co-constitute' one another. Cultures provide the social and material conditions and explanatory motivations for scientific projects, which in turn inform and enable new conditions and motivations, thus sustaining an interactive cultural and epistemic diversity.

This is very close to Feyerabend's account of the 'abundance' of reality as arising from the interaction of diverse human cultures with the 'richness of Being'. Harding's account of the co-constitution of cultures and sciences arguably complements Chang's epistemological arguments: whereas Chang provides a normative case for epistemic pluralism, Harding is concerned with the conditions which generate such pluralism in the first place. These are, of course, the social and intellectual resources of human cultures and the wide array of explanatory goals and practical and cognitive values they generate.

As Harding puts it:

> 'Cultures generate scientific and technological projects to serve distinctively local interests and needs in the first place. Moreover, the diversity of the cultural resources that they bring to such projects enables humanity to see yet more aspects of nature's order. Cultures' distinctive ways of organising the production of knowledge produce distinctive repositories of knowledge and method.' (Harding, 1998: 20)

Scientific projects are informed by the cultures which generate and sustain them. The contributions that cultures make to scientific projects are numerous: conceptual schemes, social and political structures, physical infrastructures, practical and economic imperatives, and so on. Since these vary across and within cultures, they enable different forms of scientific inquiries: the '[sciences and] technologies a culture can and is willing to use is a matter of social and cultural history', as are the 'skills and techniques … material environments … and ways of organising the labour of scientific research and [attaching] new meanings to such processes' (Harding, 2008: 185). Harding emphasises that scientific traditions draw upon the material, social and intellectual resources of the cultures and communities which generate them. This point may seem trivial, but she emphasises that most of the world's contemporary scientific and technological traditions tend to be located within developed world cultures. Feyerabend similarly maintained that cultural values 'affect not only the *application* of knowledge but are essential ingredients of *knowledge itself*' and that scientific knowledge 'arises from interactions that are shaped by social customs and individual preferences' (Feyerabend, 1987: 28). He goes on to remark that:

> 'Knowledge is a local commodity designed to satisfy local needs and to solve local problems; it can be changed from the outside, but only after extended consultations that include the opinions of all concerned parties. Orthodox 'science', in this view, is one institution among many, not the one and only repository of sound information. People may consult it; they may accept and use scientific suggestions—but not without having considered local alternatives and certainly not as a matter of course.' (Feyerabend, 1987: 28)

Both Harding and Feyerabend maintain that cultures and sciences co-constitute, and argue that many of the world's cultures are disenfranchised, for complex economic, political, and historical reasons. This means that the sciences have tended to be shaped and informed by the cultural values and interests of the European and, later, 'Western' cultures, leaving the potential scientific projects of non-Western cultures largely unexploited.

They find this objectionable for two reasons. First it is practically and epistemically disadvantageous for Western cultures because it deprives them of valuable scientific projects, including modes of inquiry and forms of knowledge. Even if only a few of these prove to be valuable, our Western sciences can benefit—in the ways outlined by Chang—by tolerating and integrating with other cultures' sciences. And indeed, postcolonial science and technology studies scholars have documented the immense debt of the Western sciences, both historical and contemporary, to the knowledge systems of non-Western cultures—a point also emphasised, although with less scholarly rigour, by Feyerabend. Second, the scientific projects pursued within a culture reflect its distinctive values and needs, such as its economic and industrial interests. The scientific projects of one culture may therefore fail to adequately fulfil the needs of another culture, whose values and needs may be quite different. Of course, there may often be overlap between these needs but the diversity of values and concerns animating distinct cultures ensures that this is likely to be the exception rather than the rule. Therefore the pluralisation of the sciences has moral and political as well as practical and epistemic value. Harding argues that the Western sciences have tended to serve distinctly Eurocentric concerns, to the exclusion of those of non-Western peoples. The implicit exclusion of other cultures' values and interests creates a situation in which the dominant sciences fail to reflect their concerns; unless those concerns are built into the sciences at their foundations they are unlikely to subsequently appear within the theories and practices they generate. Harding and Feyerabend both concur that the sciences can and should be pluralised by incorporating the values and concerns of non-Western cultures. Such co-constitutive cultural and epistemic diversity is of practical and epistemic as well as moral and political value.

Harding's 'postcolonial science and technology studies' offers an argument for cultural and epistemic diversity that Feyerabend would approve of (and indeed which he arguably anticipated). The sciences can be pluralised in many ways, but an obvious strategy—and a neglected one—is to re-enfranchise the values and concerns of non-Western cultures. Their epistemic disenfranchisement discussed in Chapter four, where

I explore Feyerabend's claim that the rich epistemic resources offered by non-Western cultures have been excluded, both deliberately and not, from serious consideration.[45] A main culprit in these exclusions has been the false idea that 'Science', as both a descriptive and an honorific term, is confined to Western scientific and technological traditions; this of course includes the claim that those traditions are themselves independent of the traditions of other world cultures, itself a dubious claim. Feyerabend approved of such a project:

> '*[T]here is nothing in the nature of science that excludes cultural variety*. Cultural variety does not conflict with science viewed as a free and unrestricted inquiry, it conflicts with philosophies such as 'rationalism' or 'scientific humanism' and an agency, sometimes called Reason, that use a frozen and distorted image of science to get acceptance.' (Feyerabend, 1987: 12-13, original emphasis)

Neither Harding nor Feyerabend think that engaging in reassessments of non-Western epistemic practices will see them automatically incorporated into the body of scientific knowledge. That is too much to hope for; rather, their point is that global cultural diversity offers an unexploited resource—'repositories', as Harding puts it—which can help us to pluralise the sciences and create a more socially and politically inclusive scientific enterprise.[46]

A great advantage of recognition of the epistemic value of cultural diversity is that it offers a potentially inexhaustible resource for pluralising the sciences.[47] Harding argues that '[t]he limits of such resources can never be reached as long as cultures continue to change over time and new ones emerge in the diasporas and interstices of older cultures' (Harding, 1998: 20). The ongoing evolution of human cultures generates new values and imperatives, social and cultural interests, and economic and industrial concerns. This in turn affects the range and prioritisation of scientific projects which those cultures

[45] Harding urges us to 'reevaluate indigenous knowledge … not from the perspective of conventional Northern exceptionalist and triumphalist standards, but rather as projects which responded well, or not, to concerns of non-European societies and their peoples' (Harding, 2008: 134).

[46] Harding notes the possibility that future, culturally-diverse, pluralistic sciences may be quite different from the sciences we currently recognise, once one takes seriously the idea that '[t]he North is no longer regarded as having the right to hold as uniquely legitimate its designs for possible future global science and technology scenarios'. This possibility holds even if, as Harding rightly remarks, 'it is extremely difficult to imagine how scientific and technological work could be different than it is now' (Harding, 2008: 145, 146). See also Harding (2006: Ch3).

[47] This is one reason why Feyerabend was so alarmed by the dissolution of global cultural diversity and the 'brave new monotony' that it threatened to produce. See Feyerabend (1987: Ch11).

generate and so ensures that the sciences can fulfil an array of practical, cognitive, and social values.[48]

Chang and Harding offer two forms of normative argument for active epistemic pluralism. Both of these are necessary to make the case for the pluralisation of the sciences and they also help us to systematise Feyerabend's own scattered remarks on the value of pluralism. Chang's active normative epistemic pluralism offers a systematic argument for cultivating multiple systems of knowledge. The benefits of tolerance and benefits of interaction provide the best possible conditions for the development of particular theories and for the growth of knowledge about the world. Harding augments these epistemological arguments by identifying cultural diversity as a resource for generating and sustaining epistemic pluralism. Diverse human cultures offer repositories of knowledge and methods as well as a diversity of values and concerns which motivate different forms of scientific project.

The common theme between Feyerabend, Chang, and Harding is the diversity of arguments in favour of normative epistemic pluralism. Using these three thinkers in concert, one can argue that the pluralisation of the sciences is both practically and epistemologically advantageous and morally and politically praiseworthy. Chang would surely concur with Harding's statement that 'there were in the past, are now, and always will be and should be multiple scientific traditions which partially overlap and partially conflict with each other' (Harding, 2008: 145). Feyerabend agreed and he can, I think, be identified as an advocate of something like Chang's active normative epistemic pluralism. Consensus and uniformity could arise spontaneously, perhaps as the result of a convergence of theories or pragmatic considerations; however, pluralism and diversity are generally the normal state for any area of human activity. This is, I think, what Feyerabend had in mind when he emphasised the 'humanitarian' aspects of pluralism; for instance, when, he complains that Kuhn's (monistic) normal science is 'incompatible with a humanitarian outlook', and suggests that pluralism may '*raise* [us] *to a higher level of consciousness*' and aid in 'preventing our species from stagnation' (Feyerabend, 1981b: 144). Like Mill, Feyerabend considers that 'stagnation' and a loss of diversity is indicative of a failure on the part of human beings to explore their diverse potentialities—whether in science, philosophy, or in any other area of human life.

3.4 History, pluralism, and humane concerns.

Feyerabend defended pluralism on a number of fronts. Into his later period, he even began to develop a historical narrative—the 'conquest of abundance'—whose core

[48] Kitcher's 'well-ordered science' is one attempt to reconcile epistemic and non-epistemic values in the Western sciences, but by connecting it with Harding's work one can make a case for a well-ordered science that applies to non-Western cultures as well. Feyerabend arguably led the way here by insisting that scientific projects should contribute to human wellbeing by incorporating the values and concerns of both Western and non-Western cultures. This pluralises the sciences and reconnects them with the practical and social concerns of a greater majority of the world's population.

claim was that Western intellectual culture has been broadly hostile to pluralism. This historical narrative is not meant to be interpreted as a systematic treatment of the histories of Western intellectual culture, and Feyerabend himself remarks that his historical remarks will be confined to 'selected events and developments' from the histories of 'common sense, philosophy, science and the arts' (Feyerabend, 2001: 17). The 'conquest of abundance' narrative should not even be interpreted as an accurate history; instead it is, like Foucault's 'histories', an attempt to provide a critical perspective upon contemporary values and institutions. Stephen R.L. Clark remarks that:

> 'Much the same can be said of Feyerabend's essays in creative history. Inaccurate in detail as they may be, and ambiguous in their implications, they still constitute a deeply serious vehicle for exploring the dilemmas and ambiguities of living … Whatever the proper conclusion to his work (which we do not have), it remains a salutory challenge to philosophers disposed to believe that 'science' or 'philosophy' is certainly a public good, and 'philosophers' particularly well equipped to clarify and reform the human heart.' (Clark, 2002: 263)

Clark interprets Feyerabend's 'history' as a critical device. The 'conquest of abundance' narrative is yet another of the provocative strategies that Feyerabend employed in an effort to rethink ideas that we take for granted. In this case, the aim is to make us critically reassess the idea that our aim should be the provision of some one theory, whether philosophical or social, under which one can explain all phenomena. The 'critical' functions of this history become obvious once one considers how poorly Feyerabend's talk of the 'conquest of abundance' would be if it were interpreted as documentary history. Most obviously, the history of philosophy, whether 'Western' or 'Asian' or whatever, is startlingly and wonderfully diverse and pluralistic, as are the histories of science, medicine, technology, and the arts. The increasing enthusiasm of historians of science for 'micro-histories' and their hostilities towards grand, 'Plato to Nato' histories are two signs of this.

Feyerabend offers a quasi-historical story to invite us to critically assess monism, and to delight in the plurality offered by our history. One could perhaps interpret Feyerabend's pro-pluralistic 'history' as a late response to those earlier generations of historians of science who concurred with Kuhn's (1962) model of the history of science. Kuhn argued that, within the history of the physical sciences, periods of pluralism are rare, transitory, and indicative of a 'crisis' state which necessitates 'extraordinary' measures. Happily, 'post-Kuhnian' historians of science are far more sympathetic to pluralism, and their philosophical colleagues have, in recent years, come to explicitly embrace pluralism (see Kellert, Longino, and Waters 2006).[49] The prospects for pluralism are, therefore, very good, and not just within the history and philosophy of science—indeed, for some optimistic commentators, 'pluralism now

[49] See also Rescher (1995) for a sophisticated defence of pluralism.

reigns' (Stump, 2002: 154).[50] Of course, if Feyerabend is correct, then pluralism invariably reigns; one only needs to worry when certain groups or schools begin to militate against it.

It is interesting to note that many contemporary pluralists emphasise the 'humane' dimension of pluralism. Dupré (2002; 2003) defends pluralism because of a worry that monism threatens to distort our understanding of complex phenomena, like human behaviour. Although monism has a powerful appeal, Dupré (2003) stresses the point that the irreducible complexity of phenomena militates against the 'lure of the simplistic'. In the case of human behaviour, for instance, any 'grand unifying theory of human nature' can be 'confidently predicted to distort many or most of these complexities'. Feyerabend was equally critical of the tendency to allow 'social or psychological theories' to assume exclusive explanatory authority, even to the point of neglecting the views of 'asking the people involved' (Feyerabend, 1993: 263).[51] Since any one theory or model is partial and selective, one must employ a variety of them in order to maximise one's empirical and cognitive engagement with the phenomenon in question—which, in this case, is human beings. No one theory or set of theories can be allowed to assume exclusivity and priority here, and this is why Dupré (2003; 2006) criticises evolutionary psychology. Dupré explains that, concerning human nature,

> 'It seems to me that here we should not even aspire to approach the topic with a unified tool-kit. Indeed, the more diverse and varied the contents of our tool-kit, the better chance we have of coming to grips with the really interesting problems about human behaviour ... [C]omplexity cries out for plurality. The only route to a deeper understanding of ourselves is through radical epistemological pluralism' (Dupré, 2002: S292-293)

On Dupré's account, epistemic pluralism enjoys both epistemological and moral advantages. It maximises the resources available to us for understanding the complex phenomena of human behaviour and in so doing protects us against distorting, reductive accounts which may, in a worst case scenario, be abused to support dubious social and political policies. And this latter point is not an incidental, 'humanitarian' feature but, rather, an essential guiding concern of the philosophy of science: 'science is a human

[50] Some historians and philosophers have connected the rise of pluralism with various cultural and intellectual trends, such as 'postmodernist' enthusiasm for 'eclecticism', multicultural rhetoric in praise of 'diversity', greater appreciation of philosophical and scientific traditions outside the 'Euro-American core', and so on. Reflecting on these trends, John Kekes (2000) recently urged us to steer a path between 'absolutist certainties' and 'relativistic arbitrariness', and argued that the 'alternative to absolutism and relativism is pluralism'. It is worth noting, too, that his book, *Pluralism in Philosophy* is subtitled 'Changing the Subject'.

[51] This was the phenomenon that Feyerabend saw at work in many contemporary international development projects which, he complained, generally tend to ignore local wishes and values. See, for instance, Feyerabend (1993: 263-267 *passim*).

product [and] like other human products, the only way it can ultimately be evaluated is in terms of whether it contributes to the thriving of the sentient beings in this universe' (Dupré, 1993, 264). Dupré, like Feyerabend, considers that the complexity of phenomena—from human behaviour to biological classification—generates epistemic pluralism. Complexity, as Dupré neatly puts it, 'cries out for pluralism'. As with Feyerabend, Dupré thinks that this call for pluralism has both epistemological and ethical or political dimensions. Epistemologically, there are good reasons for us to employ a plurality of theories and systems, and these were neatly systematised by Chang. Ethically (or politically), such pluralism enables us to include a diversity of explanatory interests, modes of inquiry, and so on, especially where these are culturally and geographically variable. This is the point made by Harding in the context of her overt moral and political concerns with the disenfranchisement of non-Western scientific and technological traditions, a theme she develops at length in *Science and Social Inequality* (Harding 2006).

As an aside, the appeal to Harding's pluralism may also provide a response to one very important criticism of Feyerabend's pluralism. This is the objection that his pluralism is flawed because it allows for the endless proliferation of theories and methods, but without any mechanism for the removal or rejection of theories. Peter Godfrey-Smith puts this criticism very well:

> 'What is missing in Feyerabend's picture is some rule or mechanism for the *rejection* and *elimination* of ideas. Feyerabend gives a recipe that, if it was followed, would lead to the accumulation of an ever-increasing range of scientific ideas being discussed in every field. Some ideas would probably become boring and might be dropped for that reason. But aside from that, there is *no* way for an idea to be taken *off* the table.' (Godfrey-Smith, 2001: 116)

This criticism has practical as well as epistemological aspects. Feyerabend may urge us to happily engage in theoretical proliferation and to generate an over-growing ocean of alternative theories. However, such ever-growing pluralism is not only costly, but may result in an embarrassment of riches, as one is faced with an unmanageable diversity of theories and methods. Godfrey-Smith continues that if a part of science consists in the resolution of practical problems, then Feyerabend's pluralism 'seems completely misguided' because it lacks 'a mechanism of *selection* in science', especially for the '*rejection* of ideas' (Godfrey-Smith, 2001: 116). I would like to propose two responses to this. The first is that Feyerabend was responding to his perception of the general dominance of monistic models of science; so his stress upon the need for pluralism reflects a worry that, at the time of his writing, this was absent. His aim was to secure the need for pluralism, not (yet) to provide mechanisms for managing pluralism. The second is that Feyerabend does point to criteria which might inform such selection mechanisms, namely, values. Harding, for instance, emphasises that scientific and technological projects reflect the diverse social, economic, and intellectual interests of the cultures which participate in them. One could—and this is only a proposal—invoke

something like Kitcher's (2001) idea of 'well-ordered science' to provide a mechanism whereby one can make decisions about the retention and proliferation of scientific projects according to a host of epistemic and non-epistemic values. As I will discuss in Chapter seven, this is one reason why I think Feyerabend began to consider political issues in the philosophy of science into his later period.

3.5 Conclusions.

Feyerabend's epistemic pluralism cannot be confined to the sciences alone. His earlier defences of theoretical and methodological pluralism in the sciences later expanded into a broader commitment to epistemic pluralism, across the range of human epistemic activities (including philosophy and the arts). Preston and Oberheim chart these aspects of Feyerabend's pluralism, even if their accounts diverge in important respects (which is discussed in Kidd 2008). Feyerabend's pluralism is not simply a reflection of his epistemological views, however, because it reflects his deeper commitment to the 'humanitarian' character of such pluralism. In Chapters five and six I say more about what this is, but it consists in the conviction that human beings are naturally diverse, in their aims and interests, such that epistemic pluralism is not only epistemologically sensible, but also ethically and politically important. For the later Feyerabend, epistemic pluralism is both an epistemological and ethical position and so should be safeguarded for both of those sorts of reasons.

Chapter Four

Ch4 Exceptionalism, Triumphalism, and the Contingency of Science

Feyerabend wants to preserve and increase the plurality of science by encouraging us to engage with the practices and systems of knowledge of non-Western cultures. Since arguments already exist for pluralism within the sciences, Feyerabend needs to make a good case for encouraging contact between scientific and 'non-scientific' practices and systems of knowledge. Feyerabend shows that the cognitive and practical efficacy of the sciences does not preclude the possible success of alternative practices and systems. Feyerabend does this by challenging what I call the 'presumption of the omnicompetence of science', which is understood as a form of scientism consisting of the related tendencies of 'exceptionalism' and 'triumphalism'. In this Chapter, therefore, I detail how Feyerabend used arguments based upon the contingency of the sciences to challenge the presumption of the omnicompetence of science. The gist of this argument is that the contingencies accompanying the emergence of the modern sciences prevented the development of alternative theories and practices whose practical and cognitive efficacy may have been equivalent or superior to that of our own. This is substantiated this using recent literature on contingency from the history and philosophy of science. I conclude that the aim of Feyerabend's criticisms of the presumption of the omnicompetence of science is to provoke us to reassess the distribution of practical and cognitive efficacy across the range of human epistemic practices and systems.

4.1 Introduction.

Feyerabend wanted to encourage epistemic pluralism by encouraging fruitful interaction between the Western sciences and the diverse range of epistemic practices and systems of knowledge found in non-Western cultures. It is clear that Feyerabend considered the sciences to be inherently pluralistic; however, he felt that the sciences could be more diverse—in their theories, methods, and investigative aims—through greater interaction with the scientific traditions of non-Western cultures. There are two sense of 'science' at work here: firstly, there is the descriptive use of 'science' to refer to, for instance, the disciplines of physics, chemistry, and biology that emerged across the history of Western science. This sense is what Alexander Rosenberg has in mind when he argues that 'Science as a distinctive enterprise is arguably the unique contribution of western thought to all the world's other cultures' (Rosenberg, 2000: 1-

2). The second sense is of 'science' as a normative term to refer to responsible and useful epistemic practice, or what Dupré, later in this Chapter, refers to as 'epistemically excellent' practices and projects of inquiry. Sandra Harding has this second sense in mind when she writes that 'modern sciences and technologies … are local knowledge systems', a point which is quite compatible with the claim that 'modern science is far more accurate at predicting many more of the regularities of nature's order than are many of the claims of other cultures' knowledge systems' (Harding, 1998: 55). Feyerabend often vacillates between these two senses of science: although he thinks that science, in the second sense, is not confined to early to late modern Euro-American cultures, he often writes and speaks as if it is. However, in the third edition of *Against Method*, Feyerabend makes clear his allegiance to the second sense of science as an honorific term for good epistemic practice: '*There can be many different kinds of science* … People starting from different social backgrounds will approach the world in different ways and learn different things about it' (Feyerabend, 1993: 2-3). In this Chapter I argue that Feyerabend thought that there are many scientific traditions and that some of these, primarily those that lie outside of developed world societies, have been unfairly disenfranchised owing to mistaken belief in the uniqueness and superiority of 'Western science'.

Chapter three presented the normative arguments for epistemic pluralism that one can find in Feyerabend's philosophy and connected these with contemporary literature on scientific pluralism. However there is further work to be done to secure Feyerabend's insistence that the normative arguments for epistemic pluralism can be applied to non-scientific practices and systems; pluralism within the sciences is one thing, but a radical pluralism encompassing both scientific and non-scientific practices is far more controversial. Indeed, few contemporary scientific pluralists mention any productive role for non-scientific practices and theories; even philosophers such as Harding (2008) who openly affirm the efficacy of non-Western scientific and technological traditions confine their attention to the empirical practices and systems of those cultures (see Maffie 2008). The result is that certain possible practices and systems—such as those invested in theological or magical schemes—remain neglected. The later Feyerabend did propose that one should investigate such 'non-empirical' practices and systems, if only at a strategy for identifying the limits of epistemic pluralism.

Feyerabend therefore occupies a radical position amongst contemporary pluralists because he urges us to take seriously non-Western practices and systems which fall outside of even a capacious definition of 'science'. This claim has also tended to be conflated with Feyerabend's complex and changing commitment to cultural relativism and this has prevented serious engagement with his remarks on the efficacy of indigenous cultures. Indeed, there is a consensus within the scholarship that Feyerabend's appeals to the efficacy of indigenous cultures is rhetorical, polemical, or otherwise not to be taken seriously.[52]

[52] See, for instance, Lloyd (1996); Farrell (2001: 365); Oberheim (2006: 75, 280).

In this Chapter, I challenge this consensus and argue that Feyerabend's appeals to the efficacy of indigenous cultures should be taken seriously. The purpose of these appeals is to encourage us to reassess the distribution of cognitive and practical efficacy across the range of human epistemic practices and systems of knowledge. I outline the challenge that Feyerabend posed to what I will call the 'presumption of the omnicompetence of science'. This refers to an exaggerated conception of the practical and cognitive efficacy of the sciences which depends upon historically and philosophically untenable models of science. It is this presumption which marginalises the epistemic practices and systems of non-Western cultures and which plays a large role in preventing serious assessments of their efficacy taking place. Feyerabend offers examples of the efficacy of selected indigenous practices and systems of knowledge. These examples substantiate his claim that practical and cognitive efficacy is not confined to the Western sciences and technologies and gives us good practical and moral reasons to take undertake a reassessment of global epistemic diversity. They also demonstrate that, into his later period, Feyerabend abandoned cultural relativism because he accepted that certain practices and systems of knowledge were less efficacious than others. This rebuts any implication that he entertained an 'anything goes' attitude towards the diversity of practices and systems across the range of human cultures. I conclude the chapter by introducing the political dimension to Feyerabend's appeals to the efficacy of indigenous cultures which assumes an increasingly important role in later Chapters.

4.2 The presumption of the omnicompetence of science.

In this section I provide an account of what I call the 'presumption of the omnicompetence of science'. This refers to a cluster of false accounts of the nature and structure of the sciences and the exaggerated estimations of the practical and cognitive efficacy of the sciences which they generate. The presumption of the omnicompetence of science is a form of scientism and much of Feyerabend's philosophy, both early and later, can be understood as a series of challenges to it—or, perhaps better, as his changing ideas about how such scientism is sustained and manifested within the modern world. Scientism has not been a common theme in the philosophy of science, but has received some excellent treatments in recent years.[53] Feyerabend is one exception to this. Throughout his early career Feyerabend consistently criticised models of science which mistakenly affirmed its unique claims to enjoy rationality, objectivity, and theoretical and methodological unity. The reason was, of course, that these models of science are both historically inaccurate and philosophically deleterious; they find no basis in the history of scientific thought and practice and if applied would impair, rather than aid, scientific research. *Against Method* was a sustained critique of such misleading images of science using the example of methodological monism.

[53] See Sorrell (1994) and Stenmark (2001). Mary Midgley (2001) and (2004) is perhaps the philosopher who has devoted most attention to scientism.

Feyerabend criticised many prevailing philosophical accounts of science. Unfortunately, this meant that he defended a view of science which was, at the time, very radical—namely, that science is disunified and pluralistic, charged with values, and powerfully affected by contingent social and historical conditions. Of course, this conception of science has since become widely accepted within the history and philosophy of science even if the particularities of it are still subject to vigorous debate. Feyerabend's philosophy of science is therefore critical (not that anyone ever doubted that) and its purpose is not to undermine scientific knowledge and practices, but instead to provide us with an accurate understanding of their nature and efficacy.

Feyerabend argued that into the early twentieth century certain philosophies of science with scientistic tendencies began to become predominant. The logical positivist and logical empiricist models of science that assumed increasing influence into the 1920s and 1930s were unapologetically scientistic. The logical positivists emphasised that science was unified and rational and that is represented the most advanced form of human intellectual activity. Some of them argued that 'science' should be adopted as a model or exemplar for other human endeavours, for instance in philosophy, ethics, and politics, often by referring to a 'scientific world conception', or *Weltanschauung*.[54] Feyerabend agreed that the sciences were a marvellous cognitive and cultural achievement but disagreed about logical positivist emphases upon their superlative value and efficacy. This is a historical and philosophical complaint about the accuracy and tenability of the logical positivists' model of science and much of Feyerabend's most influential work was devoted to challenging it; for instance, by rejecting the distinction between observation and theoretical languages and the contexts of discovery and justification. Feyerabend often referred to such misleading models of science as 'myths' or 'ideologies' and insisted that science proper needed to be protected from the 'ideology of science'.

The presumption of the omnicompetence of science is one such 'ideology'. This presumption can take a variety of forms and it may be more accurate to speak in the plural of presumptions of the omnicompetence of science. A general form of the presumption could be the claim that science *per se* is practically and cognitively superior to any and all alternative traditions, such as magical and mythological cosmologies. A more specific form would be the claim that certain areas of science, such as the physical sciences, are fundamental and that other areas of inquiry are ultimately reducible to them. The presumption can be either general or specific and can range from praising all of the sciences, or only certain select disciplines or theories. There are also political and cultural dimensions to the presumption of the omnicompetence of science; it may encourage the view that the sciences are the most valuable parts of human intellectual activities such that the arts and humanities, say, should be less valued and perhaps even abandoned.[55] Nor are such attitudes confined to the older logical positivist period in the history of philosophy. Ladyman and Ross

[54] See, for instance, Cartwright, Cat, Fleck and Uebel (1996). Reichenbach (1951) is a classic source for 'scientific philosophy.

[55] See Cottingham (2009) and Kagan (2009).

(2006) defend just such a scientistic account in their recent book *Every Thing Must Go*, where they describe the Western sciences as 'the great epistemic enterprise of modern civilization' and argue that any discipline or practices which do not conform to it 'fails to qualify as part of the enlightened pursuit of truth, and should be discontinued' (Ladyman and Ross, 2006: 310, vi).[56]

Feyerabend was interested in multiple manifestations of the presumption of the omnicompetence of science. These included debates about the value of the arts and humanities in relation to the sciences, the legitimacy of religious belief, and the place of science within modern developing world cultures. In this Chapter, however, my focus is on just one aspect of the presumption: namely, the claim that the Western sciences enjoy unique or superlative practical and cognitive efficacy. This can be understood in two ways. The first is that the Western sciences are uniquely successful at enabling us to understand and manipulate the natural world. The second is that they are superlatively successful at doing so, in the sense that other 'pre-scientific' practices and systems of knowledge can claim lesser degrees of practical and cognitive success; for instance, certain cultural and cognitive anthropologists have argued that 'folkbiological concepts' can be understood as containing 'rudimentary or inchoate' forms of concepts which receive their most sophisticated manifestation in scientific practices (Atran and Medin, 1999: 11). Claims about the practical and cognitive efficacy of the sciences should be understood as lying on a broad spectrum; there is abundant empirical evidence to demonstrate the efficacy of certain practices and systems, such that one could not dismiss them *tout court* (see Appendix II for a scholarly survey of such literature).

Feyerabend agrees that practical and cognitive efficacy is shared across the range of human epistemic practices and traditions. What he disagrees about is the distribution of efficacy and the scope of the practices and traditions being considered. Feyerabend insists that the 'non-scientific status of certain practices and systems of knowledge does not automatically debar them from enjoying practical and cognitive efficacy. In an autobiographical essay, he reports a realisation prompted by the increasing inclusion of black, Spanish, Native American and Indian students into his classes into the 1970s:

> 'Their ancestors had developed cultures of their own, colourful languages, harmonious views of the relation between people, and between people and nature whose remnants are a living criticism of the tendencies of separation, analysis, self-centredness inherent in Western thought. These cultures have important achievements in what is today called sociology, psychology, medicine, they express ideals of life and possibilities of human existence. Yet *they were never examined with the respect they deserved* except by a small group of outsiders; they were ridiculed and replaced as a matter of course first by the religion of brotherly love and then by the religion of

[56] Ladyman and Ross (2006: 61) admit that they 'admire science to the point of frank scientism'. I criticise their claims at length in Kidd (2009b).

> science or else they were defused by a variety of 'interpretations'' (Feyerabend, 1993: 264)

The reason is that there is no singular term 'science' to which one can appeal in order to sustain a demarcation between scientific and non-scientific practices. Although this does not, of course, deny the fact that practical and cognitive efficacy varies across the range of human epistemic practices it does mean that one must seek alternative standards for judging it then an appeal to an alleged demarcation between science and non-science. Feyerabend argues that, too often, the merits of indigenous practices and systems are ignored or overlooked simply because they are classified as unscientific. These classifications are sustained by false images of the sciences and should therefore be abandoned or radically reassessed once those images are dissolved.

One particularly influential false image of science that Feyerabend challenged was the doctrine of the 'unity of science'. During the 1960s and 1970s the guiding message of Feyerabend's work was that the sciences are not and should not be theoretically and methodologically unified. The sciences are pluralistic or 'anarchistic' and include a complex range of theories and methods which are often mutually inconsistent. This is the image of science presented in *Against Method* and it is one of the first sustained defences of what later became known as the 'disunity of science'. That term was of course made famous some twenty years later by Dupré in *The Disorder of Things* (Dupré, 1993). Dupré defends a pluralistic and disunified account of the sciences based upon a study of classificatory pluralism in the biological sciences. Furthermore, like most of the 'Stanford school' philosophers of science, Dupré is alert to the social and political implications of both scientific knowledge and our philosophical understanding of the sciences. He argues that an appreciation of the disunified and pluralistic nature of the sciences should prompt us to rethink our ideas about 'epistemic excellence' and the legitimacy of our talk of 'science' in the singular. An awareness of the pluralistic nature of the sciences should prompt us to consider alternative accounts of the epistemic excellence of the sciences: one can no longer attribute the excellence of science to its application of a uniform scientific method because no such method exists. Dupré instead proposes that we appeal to 'epistemic virtues'. These are features of projects of inquiry according to certain virtues such as empirical adequacy, fecundity, and so on. I am not interested here in the nature and taxonomy of these epistemic virtues but rather in their implications for our assessment of the efficacy of the sciences.

In an important and neglected passage, Dupré writes that:

> '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 set, if paradoxically, that with the disunity of science comes a kind of unity of knowledge.' (Dupré, 1993: 243)

The reconceptualisation of epistemic merit which Dupré proposes is obviously radical. Certain projects of inquiry could be newly classified as epistemically excellent whilst others may be demoted and find themselves languishing in epistemic mediocrity. Other projects of inquiry may not see their classification change at all; however, any such changes will be made on a case-by-case basis because the salience of the epistemic virtues will vary from one project of inquiry to another. Dupré also remarks that his account of the epistemic and political implications of an appreciation of the pluralistic nature of the sciences was inspired by Feyerabend's own remarks in *Against Method* and *Science in a Free Society*:

> 'The philosopher with whose general perspective on science I find myself most closely in agreement [is] Paul Feyerabend ... an oasis of serious critical analysis on a topic that, astonishingly enough, has been almost entirely ignored by philosophers of science [*viz*., the social and political authority of science in contemporary society]. Feyerabend's notorious epistemological anarchism is intended above all as a therapy against the antidemocratic and oppressive consequences of the monopoly of epistemic authority sustained by science.' (Dupré, 1993: 262-263)

Feyerabend and Dupré share the view that an appreciation of the disunified and pluralistic nature of the sciences has important and perhaps radical implications for our ideas about the distribution of epistemic excellence across the range of human epistemic practices and systems. Both are also critical of sciences' monopolisation of epistemic authority and its 'antidemocratic and oppressive consequences' (see Feyerabend 1975c). Dupré (per. comm.) is more of a naturalist than Feyerabend and is less sympathetic to certain of the more exotic epistemic practices and systems of knowledge that exist within global indigenous cultures; however he concurs that one should engage in a thorough programme of reassessment of the epistemic excellence of diverse human epistemic practices and systems. Determining which 'exotic' practices and systems Dupré would reject is difficult because his work focuses upon biological classification; however he and Feyerabend are united in opposing presumptive assertions of the privileged status of scientific practices and systems of knowledge. Dupré writes that:

> 'It is not the reality I want to oppose so much as the exclusivity or elitism of the kinds that are allegedly provided by science. It is the idea that there is only one legitimate way of classifying things in the world, the 'scientific' way, that presumably underlies the assumption that whales must be either fish or mammals, but cannot be both.' (Dupré, 2006: 3-4; see also Dupré 1999)

The diverse range of scientific practices and systems instantiate certain epistemic virtues to different degrees. The many projects of inquiry human beings engage in are conditioned by complex material, social and intellectual factors as well as diverse

explanatory goals. These affect the salience of the epistemic virtues and therefore demand that projects of inquiry must be assessed on a case-by-case basis. Feyerabend emphasises this point in the first pages of *Against Method*: since 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' (Feyerabend, 1993: 1-2). This has two implications. The first is that one can no longer interpret 'scientific' as referring to any singular set of epistemic virtues. The honorific term 'scientific' should be pluralised to reflect the complex range of actual and possible epistemic virtues it actually covers. The second is that there is no longer any good reason to suppose that these epistemic virtues would be confined to projects of inquiry that might typically be classed as 'scientific'. The epistemic virtues may be manifested in any number of epistemic practices including many which may be commonly judged to be unscientific, such as the folk taxonomies that Dupré discusses.

Feyerabend wants to employ this pluralistic conception of epistemic excellence as part of his programme of reassessing the cognitive and practical efficacy of indigenous practices and systems. There are two related claims here. The first is that the distribution of epistemic excellence within the sciences may not be as uniform as philosophers have often supposed. It may be the case that certain areas of science—particular theories or disciplines, say—are in fact grossly lacking in epistemic excellence. The second is that epistemic excellence need not be confined to those projects of inquiry that have been typically classed as scientific. The epistemic virtues which constitute different forms of epistemic excellence may be instantiated in practices and systems of knowledge which are currently regarded as unscientific. Therefore the sciences may not be as uniformly excellent as one supposes and other practices and systems may be more epistemically excellent than we tend to imagine. It is important to note here that Feyerabend is not rejecting the possibility of critical assessment of epistemic practices and systems—his position here is not 'anything goes'. On the contrary, the program of reassessing the distribution of epistemic excellence depends upon the claim that certain practices and systems are more practically and cognitively efficacious than others.

Feyerabend's conclusion is that the actual distribution of practical and cognitive efficacy across the range of human epistemic practices and systems has not yet been uncontroversially established. A widespread commitment to the presumption of the omnicompetence of science has tended to distort the assessment of non-Western epistemic practices and systems of knowledge. Feyerabend challenged this presumption by criticising many of its core claims; for instance, that science enjoys a unity conferred by its possession of a unique and distinctive 'method'. The sciences are far more disunified and pluralistic than prevailing philosophies of science acknowledged and this introduced a need for more case-by-case assessments of the epistemic excellence of the many projects of inquiry grouped under the broad umbrella term 'science'.[57] It is also implied that the epistemic virtues which constitute epistemic excellence may also be present within indigenous epistemic practices and systems which are not commonly

[57] This trend was encouraged by the 'historical turn' in science studies; see Bird (2008).

classified as 'scientific'. The many appeals to the efficacy of indigenous cultures throughout the later writings reflect Feyerabend's attempts to explore the implications of the pluralistic conception of epistemic excellence.

In the next two sections I present Feyerabend's arguments against the presumption of the omnicompetence of science. The aim of these two sections is not to undermine the efficacy of the sciences, but only to make the case that the success of the modern Western sciences does not undermine the actual or possible efficacy of other 'non-scientific' practices and systems. I hope to preserve the efficacy of the Western sciences but open a space for the consideration and perhaps inclusion of the whole range of other practices and systems that exist in non-Western indigenous cultures.

4.3 The contingency of science.

The historical contingency of the sciences is a current topic of debate for contemporary historians and philosophers of science. The discussions so far have focused on the question of whether our modern sciences were 'inevitable' or 'contingent'.[58] Howard Sankey (2008) outlines the two positions: '[t]he inevitabilist holds that science, properly conducted, will tend to converge on a single unified theory of the world', whilst the contingentist 'holds that science, properly conducted, might well have led to a completely different theory of the world from that of contemporary science' (Sankey: 2008: 259).[59] Feyerabend takes a more radical position on the inevitabilism-contingentism debate because he takes seriously the possibility that the sciences may not have emerged and may not persist as features of human cultures.[60] He therefore takes seriously the idea that epistemic practices and systems that are not recognisably 'scientific'—in the descriptive sense outlined earlier—should be examined for their epistemic excellence. Feyerabend does this as part of his commitment to pluralism and proliferation and it reflects what, in his later work, he calls the 'abundance' of reality, its capacity to sustain a plurality of mutually incompatible epistemic systems.

Feyerabend defended a strong version of the contingency of the sciences. His earlier historical studies of the sciences emphasised the role of contingent social and intellectual factors in shaping the emergence of quantum theory. Such remarks were often made in the context of challenging the 'hegemony' of the Copenhagen interpretation, a claim which has been subsequently examined at length by James

[58] Both of these terms were introduced by Hacking (1999). An important early work in the contingentism debate is Pickering (1984).

[59] I am not concerned with questions of scientific realism in this paper. Giere (2006: 93) explains that his aim is to defend a 'viable notion of scientific realism [which] is perspectival and contingent'.

[60] See Kidd (forthcoming g) on Feyerabend and contingency. An interesting reflexive point is this: the current debate within history and philosophy of science can only proceed because the sciences did indeed emerge—had the sciences not emerged in any form we could recognise then perhaps scholars would have been debating the inevitability or contingency of a radically different epistemic tradition.

Cushing (1994). Feyerabend suggested that particular scientific projects emerge from the confluence of contingent material, social and intellectual factors. This raises the possibility that alternative contingencies could have generated alternative scientific projects and this chimed well with Feyerabend's commitment to proliferation and pluralism. Such emphases on the material, social and intellectual contingency of the sciences generated a substantial literature within the history and sociology of science and the epistemology of experimentation. These studies emphasised the intimate dependence of scientific projects upon social conditions, political and institutional structures and a whole range of other values and conditions reflecting cultural, political and historical contingencies. The scholars cited include Galison, Hacking, Pickering, Rudwick, and Schaffer.[61] Feyerabend enthusiastically cited such studies and praised them as excellent examples of how science studies should proceed.[62]

Feyerabend embraced the contingency of the sciences for three reasons. The first is that it encourages a sensitivity to the material, social and intellectual particularities of scientific research. This was consonant with his emphases upon the pluralistic nature of the sciences and the need for sensitivity to the realities of scientific practice, rather than the idealisations of philosophical models of science. The second is that contingency provides an argument for proliferation: if our current scientific practices emerged from the confluence of certain contingent conditions then alternative conditions might generate alternative scientific projects. These alternative, unrealised scientific projects might well offer novel practical and cognitive resources and maximise the possibilities for fruitful inter-theoretic criticism. The third is that Feyerabend argued that one can radicalise the idea of the contingency of science and thus enable us to pose new questions about the value of the sciences. The first two arguments have already been treated in earlier Chapters and the issue of proliferation and pluralism will recur throughout the remainder of this Chapter. My focus is therefore on the third argument, which one could call the 'argument from the radical contingency of science'.[63] Feyerabend maintained that the very emergence and entrenchment of the sciences was itself a contingent development and that appreciation of this fact should render the presumption of the omnicompetence of science quite untenable.

The first explicit statement of Feyerabend's argument from the radical contingency of science can be found in his neglected paper 'On the Critique of Scientific Reason' (Feyerabend 1976b). This paper opens with two questions which he thought were foundational to the philosophy of science, namely 'what is science' and 'what's so great about science'. The critical aspect arises from his radical proposal that 'science as we know it today is not inescapable, and ... we can construct a world in which it plays no role whatever' (Feyerabend, 1976b: 228). It is important to note that Feyerabend is not saying that the sciences should be displaced from their privileged place within developed world cultures, nor that he would be in favour of any such displacement. Feyerabend does somewhat impishly suggest that such a 'post-scientific world 'would

[61] See Feyerabend (1987: 193), (1993: x), (1995: 91) and (2001: 132).

[62] See for instance Feyerabend (1993: xi).

[63] This is a reference to the title of Cottingham (2008).

be more pleasant to behold than the world we live in today, both materially and intellectually' (see my comments on this paper in Chapter two).

There are two ideas informing Feyerabend's proposal here. The first is that the value of the sciences should be assessed by their contribution to the material and intellectual wellbeing of those affected by them; and judging this will require us to invoke a host of epistemic and non-epistemic values, including those which relate to moral, social, and political concerns. Feyerabend argued that 'decisions concerning the value and the use of science are not scientific decisions; they are what one might call 'existential' decisions; they are decisions to live, think, feel, behave in a certain way'. The continuing value of science therefore depends upon one's answer to the perennial philosophical question of 'what kind of life one wants to live' (Feyerabend, 1987: 30). And again in his final book *Conquest of Abundance* (2001: 202, 269), Feyerabend reaffirms his conviction that 'there is more than one way of living', that the value of the sciences should lie in their capacity to 'enrich human existence' and maximise 'life, liberty, and happiness'. Should the sciences ever begin to fail in their capacity to serve our values and ideals then the possibility could emerge that they will lose their privileged position within our culture (and this offers another good reason for pursuing Feyerabend's proposals that the sciences should be diversified further).

The second idea is the obviously radical claim that it is possible that the sciences may not persist as central and valued features of developed world cultures into the future. Feyerabend is one of the few philosophers of science to take this possibility seriously; Kitcher notes that he is 'one of the few philosophers to have seriously raised the question of the value of scientific knowledge' (Kitcher, 2001: 212).[64] Feyerabend argues that into the future the sciences may become unable to adequately fulfil the guiding values and interests of our culture. This may be because our values and projects change so that sciences and technologies are less obviously related to them or because they begin to introduce powerful new reasons to reassess their salience within our culture. Feyerabend is open-minded about how and why the significance of sciences and technologies within our culture may change but he often favours the pessimistic and polemical suggestion that it will increasingly be seen as failing to fulfil its 'humanitarian' aims of 'enriching' our existence. Both the possible reasons for the displacement of the sciences from the central and privileged place within our culture and the plausibility of this scenario are not my concern here. I only need to secure Feyerabend's point that the radical contingency of the sciences could indeed see human beings 'constructing a world' within which scientific knowledge, practices, and institutions play little or no significant role in human life.

It is worth recapping Feyerabend's argument for the radical contingency of the sciences and the conclusions he wants to draw from it. My presentation of this argument is drawn both from Feyerabend's own writings and from the work of David

[64] A recent exception of the general neglect of the radical contingency of science is Howard Sankey who, in a recent paper on the historical contingency of the sciences, remarked that '[i]t is not inevitable that science will continue to be pursued by humans' (Sankey, 2008: 263).

E. Cooper (2002: 195-202ff) who provides a similar argument for the historical contingency of the sciences. Cooper's argument pertains to the historical past of the sciences and Feyerabend's refer to their future and my account here is intended to complement Cooper's.[65] The argument runs as follows. The emergence and entrenchment of the sciences within early modern European culture was a 'contingent' historical and intellectual development. The continued establishment and extension of scientific knowledge and practices within and beyond Western cultures is also contingent; for instance, upon particular, ongoing political and economic imperatives. Changes, dramatic or gradual, in Western cultural, intellectual, political or other factors can and will affect appraisals of the value and centrality of the sciences within modernity.[66] Such changes can, of course, occur, and doubtlessly will do. Therefore, there is no good reason to suppose that the sciences will continue to play a central, or even a peripheral, role within (some or all) future world cultures. For instance, future cultures might 'lose interest' in science, or abandon it altogether, either in favour of alternative epistemic traditions (such as revived natural theologies). We have no good reasons for claiming that science will continue to play a central and integral role in future world culture. Its status may fluctuate, remain stable, or perhaps fade and disappear.

Feyerabend certainly thought that the foregoing scenario was plausible. However his discussions of the contingency and value of science are unsystematic and too often obscured by rhetoric and polemic. The most sustained treatment of the radical contingency of the sciences which he offers can be found in *Science in a Free Society* in the following passage where he is discussing the diversity of the sciences and the distribution of epistemic excellence across human practices and systems (this is the 'development' referred to):

> 'It is quite possible that an open debate about this development will find that some traditions have less to offer than others. This does not mean that they will be abolished—they will survive and keep their rights as long as there are people interested in them—it only means that for the time being their (material, intellectual, emotional etc.) products play a relatively small role. But what pleases once does not please always; and what aids traditions in one period does not aid them in others.' (Feyerabend, 1978: 106-107)

This passage indicates Feyerabend's ideas about the connections between contingency, values, and the 'humanitarian' functions of science. The diversity of human cultures offers a variety of practices and systems which can serve many different explanatory

[65] It is also worth noting that Cooper uses Feyerabend's *Conquest of Abundance* in his own account of the contingency of science; see Cooper (2002: 150-151 and 190-191). Cooper (2000) discusses *Conquest of Abundance* in detail.

[66] For instance, Sandra Harding (2006) suggests that an increasing awareness of the 'Eurocentric biases' informing the distribution and consumption of scientific knowledge and products may prompt us to radically reorganise them

goals. The modern sciences fulfil many of the goals of developing world cultures very well, perhaps superlatively well. However their current successes—and hence value—cannot be taken for granted for two reasons. The first is that those goals may change in ways that demand the development of new or alternative sciences or, more radically, practices and systems of knowledge which would not fall under even a capacious definition of 'science'. The second is that the superlative cognitive and practical efficacy of Western scientific practices and systems has not yet been definitively established: 'the comparative excellence of science has been anything but established' and too many of the arguments offered 'dissolve on closer inspection'—therefore 'we have not the faintest ideas whether other traditions could not be *much better* and so 'we must find out' (Feyerabend, 1978: 106).[67]

The radical contingency of science that Feyerabend defends is perhaps not as radical as it might initially appear. The value of the sciences—understood as epistemically excellent practices—lies in their capacity to serve various goals and projects which are central to modern developing world cultures, including economic and industrial activities and our epistemic values such as our valuation of knowledge of the world for its own sake. Into the future these values and projects may change in ways that render the sciences more or less successful and salient; in the former case the sciences will become more entrenched within our culture but in the latter case they may gradually lose their central and privileged place and become peripheral or perhaps even obsolete. And even in the case that the sciences remain valued features of our culture it has not yet been established that the efficacy of our contemporary practices and systems is greater than that of alternatives. The argument from the radical contingency of science therefore applies both to scientific and 'post-scientific' future societies: if our values and projects remain fairly stable then we should seek the most efficacious practices and systems—these may be drawn from our current sciences or perhaps from the alternatives offered by non-Western cultures. There is therefore a pragmatic imperative for us to determine the actual distribution of cognitive and practical efficacy across the range of human epistemic practices and systems. And if into the future the guiding values and projects of developed world cultures change radically then we should have recourse to alternative non-scientific theories and practices, if only as a sensible insurance policy.

Feyerabend suggests that the radical contingency of science provides a case for proliferation and diversity. The fact that our practices and systems are cognitively and practically efficacious does not imply that alternatives with equivalent or superior degrees of efficacy are not possible (or indeed that they might not already exist in non-Western cultures). The presumption of the omnicompetence of science tends to prevent our taking non-scientific alternatives to our practices and systems seriously and obscures the fact that they have not, in the overwhelming majority of cases, been

[67] This latter remark is of course hyperbolic, if only for the reason that Feyerabend does offer evidence for the superior efficacy of certain non-scientific practices and systems in his later work.

subjected to fair and impartial assessment. The possibility of multiple sciences has therefore not been definitively rejected. As David E. Cooper (2002) argues,

> '[T]he failure of any rival to the scientific image to become our entrenched view was not due to the recognition, after patient and prolonged investigation, that the entities and processes postulated by the rivals did not pass muster in comparison with those proposed by physics. The fact is that no one has ever tried, in detail, to develop the 'research programmes' indicated by such rival images of reality, or to compare them, in terms of explanatory scope, with those of the natural sciences.' (Cooper, 2002: 194)

Feyerabend made parallel claims. The entrenchment of the modern sciences has 'all the success of a manoeuvre carried out in a void' because it was not achieved through critical competition with viable, well-developed alternatives (Feyerabend, 1993: 30). This argument finds its origins in Feyerabend's earlier insistence that the improvement of theories proceeds upon their critical interaction with well-developed alternatives.[68] The modern sciences may enjoy practical and cognitive efficacy but their comparative excellence has not in most cases been established because there are no other sufficiently-developed 'alternatives' against which they could be critically assessed. Harding (2008: Ch5) uses the same point to urge us to activate—or reactivate—the dormant scientific and technological traditions of non-Western cultures.

The core idea animating Feyerabend's idea here is that '[t]he question [of] whose achievements are better ... cannot be answered for there are no realistic alternatives to provide a point of comparison' (Feyerabend, 1993: 30). The efficacy of our sciences can be asserted, but their superlative efficacy in relation to alternatives cannot—in the absence of well-developed alternatives and 'patient and prolonged investigations' of their comparative merits one can only appeal to '*rumours* to that effect' (Feyerabend, 1978: 106). Therefore the practical and cognitive efficacy of the modern Western sciences does not indicate the inefficacy of alternatives and the actual distribution of epistemic excellence across global epistemic systems remains uncertain.

Scholars have noted the nascent arguments from contingency throughout Feyerabend's writings. The general theme of their discussions is that comparative assessments of scientific and non-scientific practices and systems have not been achieved. They also emphasise that this problem has both philosophical and political dimensions and they connect it with Feyerabend's remarks on public control of the sciences and the political and epistemic disenfranchisement of indigenous cultures (a set of issues discussed in the next Chapter). In so doing they help to align the later Feyerabend with postcolonial science and technology studies which is the topic of the next section. Preston (1997) suggests that '[a] fair competition between scientific and non-scientific views would involve each view having access to an equal share of resources'. However such competitions have 'never been staged [and] we cannot even anticipate [their] outcome' (Preston, 1997: 205f). Hoyningen-Huene (2000) agrees and

[68] See Preston (1996: Ch7) and Oberheim (2006: Ch8).

connects the need for such competitions with the question of the distribution of epistemic excellence:

> '[T]he alleged superiority of scientific knowledge over other forms of knowledge has not been thoroughly examined without prejudice in any field. Instead, other forms of knowledge have often been simply swept aside by science [and so] scientific knowledge has its special social status without justification. It is one form of knowledge among others, which has advantages and disadvantages just like others.' (Hoyningen-Huene, 2000: 13)

Hoyningen-Huene and Preston concur that Feyerabend is making the claim that the mere fact of the emergence and entrenchment of cognitively and practically efficacious sciences does not constitute a proof of their unique or superlative efficacy. The fact that 'our' sciences happen to fulfil our practical and cognitive needs only indicates their own success, not the inadequacy of alternatives. Of course, these alternatives may well be less successful, or not successful at all, but this should be a matter of 'patient and prolonged' examination, not prejudice or presumption. As Cooper warns, the assumption that 'rivals' to the modern scientific image 'could never have successfully been worked and lived with, and that no satisfying placement of scientific enquiry within their terms could have been possible, is arrogant pre-emption' (Cooper, 2002: 194).

The contingency of the sciences therefore provides a case for proliferation and pluralism. The modern Western sciences are just one set amongst a range of actual and possible sciences and no *a priori* judgements can be legitimately made about their superlative status. This could only be determined through careful processes of examination and assessment; however these assessments will be difficult to effect in practice. The redistribution of material, financial, and intellectual resources necessary to facilitate such a pluralistic scientific programme would require enormous administrative resources—and persuading scientific research centres to do this would be extremely difficult. However, against these objections, one can offer a pragmatic case for exploring the possible diversity of the sciences: certain alternatives to our current practices and systems could offer us more efficacious resources. Therefore, the practical and epistemic benefits of attempting such a reassessment greatly outweigh the costs.[69]

Fortunately a reassessment of the distribution of epistemic excellence need not begin *ex nihilo*. Feyerabend offered a variety of resources that one could appeal to in order to begin to effect a reassessment of non-scientific practices and systems of knowledge. These include the history of science and technology, cultural and medical anthropology, and development and environmental studies. Feyerabend in fact often expressed his surprise and dismay that the possibilities for pluralising the sciences had gone unexploited for so long and this is one reason why he was so critical of the presumption of the omnicompetence of science (and indeed of any and all dogmatic positions which

[69] Kitcher (2003: Ch7-14) discusses many of these difficulties.

encourage epistemic conservatism and militate against attempts to increase the diversity of the sciences).[70] Feyerabend ambitiously explains the many disciplinary sources which could help us to reassess non-scientific practices and systems:

> '[A]lternatives ... may be taken from the past as well. As a matter of fact, they may be taken from wherever one is able to find them—from ancient myths and modern prejudices ...The whole history of a subject is utilised in the attempt to improve its most recent and most 'advanced' stage. The separation between the history of a science, its philosophy, and the science itself dissolves into thin air.' (Feyerabend, 1993: 33-34)[71]

This passage makes clear Feyerabend's optimism about the diverse epistemic resources that our historical and anthropological senses offer. An attractive feature of his later writing is the optimistic emphasis upon human cognitive and creative capacities and the apparent ability of the world to sustain radical epistemic diversity. This is the 'abundance' of the world which is discussed in later Chapters. In the next section I say more about how and why Feyerabend thinks that the presumption of the omnicompetence of science successfully obscured our appreciation of global epistemic pluralism.

4.4 Exceptionalism and triumphalism.

Feyerabend devoted much of his later writings to diagnosing how and why the presumption of the omnicompetence of science arose. This continued the critical theme of his earlier work although it was of course greatly expanded into the later work. As well as historical and philosophical studies of the physical sciences one finds Feyerabend experimenting with ambitious accounts of the intellectual history of

[70] This is why Miriam Solomon is wrong to suggest that Feyerabend may be a representative of what she calls the '*laissez-faire*' view on epistemic diversity, namely, that 'there is enough epistemic diversity, and no special efforts need be made to increase (or decrease) the amount of diversity' (Solomon, 2006:23-24). To be fair, Solomon remarks that it is 'hard to identify someone who espouses this position, at least in an unqualified way' and only says that Feyerabend 'probably' defends the *laissez-faire* position (Solomon, 2006: n1). In personal communication, Solomon conceded that Feyerabend's arguments for pluralism may in fact show that he certainly thinks that much does need to be done to encourage epistemic diversity.

[71] The epistemic value of 'false' theories is also emphasised by Mill. As Paul Kelly explains, 'in Mill's defence of speech and discussion all beliefs and opinions have some utility as such, even if they are clearly false. Even false beliefs have a contribution to make to the pursuit and appreciation of truth. It is not that Mill wants to denigrate the idea of genuine knowledge or truth especially in science and ethics, nor does he have a consensus or pragmatist theory of truth. Mill simply wanted to argue for the epistemic value of diversity of beliefs and opinions even false ones' (Kelly, 2006: 251-252).

Western culture, exploring the role of science and technology in European colonialism and critically discussing modern international development projects. Such appeal to diverse disciplines and methodologies is, of course, characteristic of Feyerabend but it encouraged and exacerbated certain familiar criticisms of his work (such as the four charges discussed in Chapter one). Certainly it may not be immediately apparent quite how the emergence of philosophy within Ancient Greece is pertinent to concerns about the legitimacy of indigenous classificatory systems, or what abstract metaphysical concerns such as the 'problem of reality' have to do with environmental management policies in the developing world. However these eclectic interests and issues become far more coherent once one appreciates that they emanate from Feyerabend's concern with how and why the presumption of the omnicompetence of the sciences emerged within developing world cultures. Feyerabend wanted to understand how and why the sciences came to enjoy their considerable cognitive and cultural authority within modern Western cultures; to this end, he explored and exploited intellectual history, cultural anthropology, contemporary developmental studies and any other discipline he felt might help him to understand the many ways in which Western science and technology influence the modern world.

The political and philosophical project of reassessing the efficacy of the sciences in relation to indigenous practices and systems is not unique to Feyerabend. In the last twenty five years it has been pursued in various ways by anthropologists, historians, indigenous rights activists and a variety of scholars whose work can be classed as 'postcolonial science and technology studies' (PSTS). Feyerabend made use of the work of all of these different groups, but my focus here is on the latter. PSTS is a relatively new movement within the broader science studies program; it includes historians, philosophers and sociologists of science and focuses upon the relationship between Western and non-Western scientific and technological traditions. I focus on the work of Sandra Harding (Harding 2008; forthcoming). My aim is twofold. Firstly I want use Harding's work to interpret the later Feyerabend's scattered remarks on indigenous practices and systems of knowledge and his discussions of the political issues the question of their efficacy raises. Secondly in so doing I hope to show that Feyerabend was an important early figure within PSTS; so far his appearances within the burgeoning PSTS literature has been limited to identifying him as a figure within post-positivist philosophies of science.[72] I hope to demonstrate that Feyerabend deserves to be recognised as an important early figure within PSTS and to outline how he could contribute to current debates within the discipline.

Recall that a key aim of Feyerabend's criticisms of the presumption of the omnicompetence of science was to demonstrate that epistemic excellence is not confined to the Western sciences. Practical and cognitive efficacy is instead distributed over a wide range of practices and systems of knowledge including many of those found in global indigenous cultures. An important strategy in challenging the omnicompetence of science is therefore to expose two of its constituent claims: namely,

[72] See for instance Harding (1998: 216fn23 and 218fn48) and (2006: 135-137 *passim*). Feyerabend is completely absent from Harding (2008).

'exceptionalism' and 'triumphalism'. Harding defines these terms: exceptionalism is 'the belief that Western sciences alone among all human knowledge systems are capable of grasping reality on its own terms'. They alone are 'entitled to be called sciences' and to 'permit effective interactions' with the world (Harding, 2008: 3-4). The Western sciences are therefore exceptional because they have achieved practical and cognitive successes beyond the capacities of alternative epistemic practices and traditions and have done so by insulating themselves from the historical and social contingencies of their home cultures. Triumphalism is the related claim that the history of the sciences consists of 'a narrative of achievements' which includes 'no significant downsides'. According to triumphalist historiographies the many deleterious environmental, social and political phenomena which scientific knowledge and practices have been implicated in are attributable entirely to external 'social and political projects' (Harding, 2008: 4).

Both exceptionalism and triumphalism come in degrees and admit of weaker and stronger forms. They are also mutually sustaining, insofar as the claim they both contribute to a conception of the Western sciences as being both cognitively and culturally exalted. Feyerabend and Harding offer a variety of criticisms of exceptionalism and triumphalism. I cannot discuss all of them here and so will focus on just one: namely, the argument that there have been and continue to be mutually enriching contacts between the scientific and technological traditions of Western and non-Western cultures. This fulfils two purposes. The first is that it provides a useful focus for comparing Feyerabend and Harding's complex discussions of global scientific and technological traditions. A detailed comparison of their mutual contributions to PSTS would make for an engaging future project but not one that can be attempted here. The second is that both Feyerabend and Harding emphasise the value of global cultural and epistemic diversity and the importance of preserving them. They both argue that practical and cognitive efficacy is not confined to the Western sciences and that reassessing the merits of non-Western practices and systems of knowledge will increase the range of epistemic resources at our disposal. This is not only practically and epistemically advantageous but also fulfils projects of social justice since they are both alert to the fact that the present prioritisation of Western sciences and technologies has and is resulting in environmental, social and intellectual destruction (these moral and political issues are discussed in the following Chapters).

Feyerabend and Harding both emphasise the historical interactions between Western and non-Western scientific and technological traditions. Contrary to exceptionalist historiographies, these interactions have been regular and bidirectional and have contributed enormously to the empirical and theoretical sophistication of the scientific traditions on both sides of the exchange (see Appendix II). Contemporary historians of colonial science are only the most recent of a long series of revisionist historians to have explored and substantiated this claim. Feyerabend is admittedly less rigorous than Harding in providing scholarly corroboration for this claim, a fact which probably encouraged accusations that he was engaging in polemics. Exceptionalism and triumphalism tend to devalue non-Western epistemic practices and systems of knowledge in two ways. The first is that it obscures the historical interactions between

Western and non-Western scientific and technological traditions. Exceptionalism obscures the contributions of non-Western practices and systems to the Western sciences and so undermines the instrumental case for their preservation (namely, that our sciences have benefited and can continue to benefit from the existence of alternative scientific traditions). The second is that exceptionalism implies that the practices and systems of non-Western cultures have lesser degrees of cognitive and practical efficacy: if Western sciences and technologies are exceptional and either uniquely or superlatively successful, then the peoples of non-Western cultures are using inferior practices and systems of knowledge. This claim can and has provided a normative argument for their replacement by ostensibly superior Western practices and systems; this claim is developed at length in Chapter six where it is traced to John Stuart Mill and so I postpone discussion until then.

Western and non-Western cultures have benefited from mutually enriched exchanges between their respective scientific and technological traditions. Exceptionalism and triumphalism obscure the value and indeed the existence of these exchanges and so sustain the presumption of the omnicompetence of the sciences. Feyerabend and Harding warn that ignorance of these fruitful intercultural exchanges will be to the detriment of the Western sciences—a point which stands independently of any concern for the epistemic practices and systems of knowledge of non-Western cultures, or the social justice projects one can associate with them. They have two related claims. The first is the pragmatic argument that engagement with indigenous practices and systems of knowledge maximises the range of cognitive and practical resources available to us. When confronted with a range of practical and theoretical problems it makes sense to keep our epistemic options open and have recourse to a pluralistic range of practices and systems. The second is the epistemological argument presented in Chapter two; namely, that our theories and practices will develop best when they profit from the benefits of tolerance and interaction offered by epistemic pluralism. These twin sets of benefits of course arise within a scientific pluralism but they are maximised by a radical epistemic pluralism which incorporates both scientific and 'non-scientific' practices and systems—and of course, Feyerabend rejects this distinction in any case.

Feyerabend and Harding share a common commitment to the value of global epistemic and cultural diversity. The diverse range of practices and systems of knowledge generated across the history of human cultures offers us a remarkable range of possibilities for investigating and acting upon the world. The practical and cognitive efficacy of these diverse practices and systems varies—some are excellent, others abysmal, and most fall somewhere in-between. Moreover historical studies indicate that this epistemic pluralism has been generated and sustained by regular intercultural exchange as well as internal innovation and social and historical change. Therefore there is a mutually constitutive relationship between epistemic pluralism and cultural diversity. However our appreciation of the actual distribution of practical and cognitive efficacy—or what Dupré calls 'epistemic excellence'—has been increasingly deformed by a commitment to the presumption of the omnicompetence of science. This presumption often manifests in exceptionalism and triumphalism and Feyerabend and Harding therefore challenge both of them on historical and philosophical grounds and

urge us to effect a practical and philosophical reassessment of the nature and value of both Western and non-Western epistemic practices and systems of knowledge. Of course, neither Feyerabend nor Harding make any definitive predictions about how this reassessment will affect our ranking of the diverse range of practices and systems; after all, that will require long processes of examination and assessment whose outcome cannot be determined in advance. However it is clear enough to both of them that it will, at the very least, result in the rehabilitation of certain indigenous practices and systems; as Dupré puts it, a 'reconception of epistemic merit' should bring in its train 'a kind of unity of knowledge' (Dupré, 1993: 243). It is possible that certain scientific projects may see their fortunes change dramatically whilst others may remain relatively unchanged; however it is almost certain that many practices and systems that are currently classified as 'unscientific' will find their epistemic merits newly appreciated such that they assume a place within the ratings of human epistemic achievement.

4.5 Conclusions.

A key aim of Feyerabend's later philosophy is to defend global cultural and epistemic diversity. Chapter two outlined Feyerabend's normative arguments for epistemic pluralism and this chapter built on these by showing why this pluralism should include the 'non-scientific' practices and systems of non-Western cultures. I did this by introducing one powerful obstacle to the radical pluralisation of science that Feyerabend urges, namely, the presumption of the omnicompetence of science. This refers to a variety of scientistic claims to the effect that the Western sciences enjoy unique or superlative cognitive and practical efficacy. I criticised this presumption and argued that it is preventing us from performing an fair and impartial assessment of the actual distribution of what Dupré calls 'epistemic excellence' across the range of epistemic practices and systems found in world cultures. My discussion connected the later Feyerabend with the contingency debate in contemporary history and philosophy of science and postcolonial science and technology studies (PSTS). The contingency of the Western sciences ensures that alternative scientific practices and systems are possible and many of these may exist within non-Western cultures. Feyerabend urges us to consult these alternatives and interpret them as possible resources for the pluralisation of the sciences.

Chapter Five

Ch5 Cultural Pluralism and Human Wellbeing

5.1. Feyerabend's debts to John Stuart Mill.
5.2. What did Feyerabend take from *On Liberty*?
5.3. The value of cultural diversity.
5.4. Pluralism and convergentism.
5.5. Conclusions.

There is a longstanding scholarly debate about the nature and extent of John Stuart Mill's influence upon Feyerabend. It is clear that Feyerabend admired Mill's pluralism, but the current debate has tended to presume that it was theoretical pluralism that Feyerabend took from Mill. This Chapter challenges this presumption and argues that what Feyerabend took from Mill was the conviction that cultural pluralism—a diversity of 'modes of living'—was an essential precondition of human wellbeing.

5.1. Feyerabend's debts to John Stuart Mill.

The aim of this chapter is to establish Feyerabend's positive claims about the value of cultural and epistemic pluralism. There are many empirical, historical, and philosophical arguments for 'theoretical pluralism' evident throughout Feyerabend's work from the 1960s onwards. I have argued that these constitute a defence of epistemic pluralism. In this chapter, the connections between epistemic and cultural pluralism are examined. It is well established that Feyerabend defended 'scientific pluralism', but what is less commonly appreciated is that, into his 'later' period, this pluralism was extended to encompass the 'modes of inquiry' and 'forms of knowledge' evidenced in cultures that fall outside the boundaries of Western modernity. Chapters two and three examined Feyerabend's claim that both 'scientific' and 'non-scientific' traditions have claims to cognitive and practical efficacy, and that each can benefit from the resources offered by the other.

This chapter continues this theme, by exploring Feyerabend's claim that epistemic and cultural pluralism is valuable not only because it maximises our cognitive and practical resources, but also, at a deeper level, for its contribution to human 'wellbeing'. I focus on how Feyerabend appealed to John Stuart Mill to support his case for cultural and epistemic pluralism, and, in so doing, hope also to contribute to two ongoing debates in Feyerabend scholarship: first, the question of what, if anything, Feyerabend took from Mill, and, second, to explain why the later Feyerabend includes long paeans to, and defences of, 'eccentric', indigenous beliefs and practices.

Certainly these advocacies contributed to Feyerabend's 'bad reputation' as a cultural relativist, and as an enthusiast of voodoo and astrology, even if, as Preston suggests, they raised his profile as a 'hero of the anti-technological counter-culture' (2009: §2.17). One clue to a possible strategy for exploring Feyerabend's defence of cultural, and epistemic, pluralism comes from Elizabeth Lloyd (1996). Lloyd offers a

'deflationist' reading of Feyerabend's 'more unusual stances', such as his defences of voodoo, astrology, and alternative medicine. These are, she suggests, 'best interpreted as attempts to play certain roles', such as 'eccentric defender of minority opinions', which are 'necessary to fulfilling Mill's conditions for rational exchange and optimal human development' (Lloyd, 1996: S407).

This strategy has two attractions. First, it offers the enticing prospect of excusing Feyerabend from any serious commitment to 'eccentric'—or, less sympathetically, 'unscientific'—beliefs and practices. Interpreted as exercises in Millian tolerance, any worries regarding such ostensibly erratic 'stances' are easily dissolved (even if the issue of sincerity does persist). It also makes life easier for those who wish to defend Feyerabend: one could simply 'explain' that his praise of voodoo was simply an exercise in Millian tolerance, a rehearsal of *On Liberty*, but nothing reflective of any serious views about such 'exotic' cultures and their practices. Second, the 'deflationary' reading seems to make good sense of the many references to Mill throughout Feyerabend's works. As will be discussed later, the scholarly consensus is that, by and large, Feyerabend seems to confuse Mill's arguments for pluralism, mistakenly and illegitimately transplanting them into the philosophy of science. If Lloyd is correct, then such worries can be dismissed, because Feyerabend was not taking anything substantive from Mill, rather than a general sense of the value of diversity. According to both of these reasons, interpreted through Lloyd's 'deflationary' perspective, there is much less going on in Feyerabend's treatment of Mill than it might seem.

Attractive as Lloyd's deflationary reading of Feyerabend's 'unusual stances' may be, there are two problems with it, which this chapter explores. First, it seems to betray the point, which is obviously important to Feyerabend, namely, that 'non-scientific' beliefs and practices can, and often do, enjoy cognitive and practical efficacy. One can easily imagine Feyerabend objecting that Lloyd's strategy is a prime example of the 'reductive' attitude, common throughout Western cultures, when faced with 'alien' beliefs and practices. In this case, an earnest effort to suggest the possible value and efficacy of 'non-scientific' beliefs and practices is met with a deflationary attempt, and is therefore 'defused' by a particular 'interpretation' (1993: 264). Feyerabend does maintain, persistently and sincerely, that 'non-scientific' beliefs and practices have cognitive and practical value. Therefore, Lloyd's 'deflationary' reading fails to account for an important feature of the 'later' work. Second, Feyerabend does make it clear that his appeals to Mill reflect more than a common enthusiasm for liberalism, tolerance, and diversity. If one examines the instances in which Mill is cited throughout Feyerabend's works, it becomes clear that the aim of these discussions is not just to celebrate liberal politics (although that is a part of it). Rather, Feyerabend develops an important connection between pluralism and human wellbeing—one which is not exhausted by Lloyd's suggestion that, by praising indigenous cultures, Feyerabend was just 'playing certain roles'. Therefore, although Lloyd is correct to note the importance of Feyerabend's debts to Mill, her identification of what these were, and how, they affected his work, surely fails to capture their depth and import.

With these remarks in mind, it is worth my saying what it is that binds Feyerabend and Mill together. Both share the sentiment that our epistemic and 'humanitarian'

interests are best served by cultural and epistemic pluralism. The 'growth of knowledge' and the 'development of human beings' is maximally facilitated by the presence, preservation, and proliferation of a diversity of modes of inquiry, values, forms of knowledge, and 'ways of life'. Feyerabend adds two points to Mill's account. First, this thoroughgoing pluralism includes, but is not exhausted by, Western epistemic and cultural practices. Although 'the West' has contributed much to the 'abundance' of the world, its own contributions do not reflect the full variation and richness which human cultures have, over time, developed. Second, Feyerabend alleges that certain intellectual and political trends within Western modernity actually militate against global epistemic and cultural diversity, posing an urgent and tangible threat to the 'pluralism' upon which, if they are correct, our 'wellbeing' depends. It is this point which locates Mill relative to the 'conquest of abundance' narrative which structures the later Feyerabend.

This chapter uses Feyerabend's appeals to Mill as a focal point for a wider discussion of his defence of cultural and epistemic pluralism. I begin, in section two, by outlining the current scholarly debate concerning what, if anything, Feyerabend took from *On Liberty*, and whether he was justified in doing this. Against the consensus, I suggest that the point taken was that cultural and epistemic diversity maximally facilitates our epistemic and 'humanitarian' interests. In sections three and four, I examine the arguments for cultural and epistemic diversity in Mill and Feyerabend and identify a tension between their competing accounts. This relates to the question of whether diversity should be understood in convergentist terms or not, and I conclude the Chapter that Feyerabend defends a form of non-reductive cultural and epistemic diversity.

5.2. What did Feyerabend take from On Liberty*?*

Feyerabend greatly admired John Stuart Mill. Throughout his writings, over an unusually long period, there are enthusiastic references to Mill and to *On Liberty*. Such consistent praise is unusual for Feyerabend, who was notoriously capricious in his praise and criticism of other philosophers. Some, like Aristotle and Mach, are celebrated, whilst others, notably Karl Popper, are scorned (see Oberheim, 2006: §1.3). The fact that Mill was regularly eulogised therefore suggests that Feyerabend thought highly of his work—indeed, it would be quite proper to identify Mill as one of the most important and enduring influences upon Feyerabend's work. The puzzle, however, is quite what Feyerabend took from Mill, and whether he was right to do so. In the following paragraphs, I provide some examples of Feyerabend's citation of Mill, and then outline the discussion which scholars like Kent Staley (1999) and Struan Jacobs (2003) offer of them.

If Feyerabend could be an acid critic, he could also be a mellifluous hagiographer. Throughout his writings, one finds Mill praised in the highest terms. Notably, his praise focuses upon Mill's philosophy, on the one hand, and his character, on the other. The great virtue of Mill's philosophy, suggested Feyerabend, is that it is 'not only an expression of [his] liberal attitude', but also 'reflect[s his] conviction that a pluralism of

ideas and forms of life is an essential part of any rational inquiry concerning the nature of things' (1993: 31). Mill's pluralistic sentiments are clearly what Feyerabend admires, as he quotes Mill's warning, in *On Liberty*, that monism—or the absence of a diversity of 'experiments in living'—conflicts with, or at the least, fails to encourage, 'the cultivation of individuality which [alone] produces, or can produce, well-developed human beings' (Mill 1998/1859: 71, quoted in Feyerabend 1993: 12). *On Liberty* itself is described as Mill's 'immortal essay', and Feyerabend celebrates it as 'still the best modern exposition and defence of a critical philosophy' (Feyerabend, 1981b: ix-x), and elsewhere as the 'outstanding presentation of a libertarian epistemology' (Feyerabend, 1987: 281). Indeed, Feyerabend assures us that '[i]t is not possible to improve upon [Mill's] arguments' (1978: 86). Mill himself is praised for his 'humanity, simplicity, and perceptiveness' (Feyerabend, 1981a: 141). [73] From these brief remarks, it should be clear that Feyerabend enormously admired Mill; indeed, there is no evidence I can find that Feyerabend ever diverged from his positive opinions of Mill.

These remarks give some clue as to Feyerabend's enthusiasm for Mill. Their general theme is the value of a liberal and tolerant social (or cultural) pluralism—the diversity of 'experiments in living' which are outlined in *On Liberty*. The point of such cultural pluralism, for Feyerabend, was that it was maximally conducive to 'human wellbeing', that is, the 'full development' of human 'faculties', with the end being their 'flourishing' or 'happiness'. Such 'concern for individual happiness is a characteristic feature of Mill' (Feyerabend, 1988: 34, fn2), and is what Feyerabend most admires. Consider three statements. In 1968, Feyerabend affirmed the need for a new 'unifying ideal' to reconnect the arts and sciences—suffering the schism introduced by C.P. Snow, perhaps—and suggests that this should be 'the preservation of human happiness' and, perhaps, 'an increase in the powers of human beings to become what they are capable of becoming' (Feyerabend, 1968: 134). Some fifteen years later, in 1981, Feyerabend describes 'the most important question of all': 'to what extent the happiness of individual human beings, and to what extent their freedom, has been increased'. Underlying this question, again, is the conviction that 'the happiness and the full development of an individual human being is now as ever the highest possible value' (Feyerabend, 1981b: 143). Finally, at the end of Feyerabend's career, the same pluralistic and 'humanitarian' values are still strong and central to his philosophy. *Conquest of Abundance* affirms that 'there is more than one way of living', that the arts and sciences should aim 'to enrich human existence', and that the maximisation of 'life, liberty, and happiness' ought to be our primary concern (Feyerabend, 2001: 202, 269). The constancy of these convictions is striking. Throughout Feyerabend's career, there remains the strong and central commitment to the value of social and cultural diversity and an affirmation of the primacy of 'humanitarian' values. Indeed, one could safely make the strong claim that Feyerabend and Mill share a common conviction, namely,

[73] See further Feyerabend (1981b: Ch4).

that each of them was committed to 'find[ing] conditions for the full and free development of individuality' (Feyerabend and Lakatos, 1999: 240).[74]

How do these remarks tally with Mill's own philosophy? Opening *On Liberty*, one finds the remark that 'the free development of individuality is one of the leading essentials of well-being'. 'Individuality' is 'not only a co-ordinate element with all that is designated by the terms civilization, instruction, education, culture, but is itself a necessary part and condition of all those things' (Mill, 1998/1859: 63). What is the value of individuality? Mill identifies two broad set of benefits. A diversity of 'modes of living' is not only 'one of the principal ingredients of human happiness' but also 'the chief ingredient of individual and social progress' (1998/1859: 63). In a beautiful and oft-quoted remark, Mill argues that 'while mankind are imperfect there should be different opinions, so is it that there should be different experiments of living; that free scope should be given to varieties of character, short of injury to others; and that different modes of life should be proved practically' (1998/1859: 63). (Notice the caveat 'while mankind are imperfect', since this point, subtle as it is, has important implications for Feyerabend's interpretation of Mill, which I return to in section three). Considering these remarks upon 'individuality', 'diversity', and the primacy of 'human happiness', it is clear that Feyerabend shares with Mill these key 'humanitarian' values.

Mill also outlines 'epistemic' benefits to the 'diversity' he celebrates. In the third chapter of *On Liberty*, he explains that his pluralism pertains 'to men's modes of action, not less than to their opinions' (1998/1859: 63). In the second chapter, 'On the Liberty of Thought and Discussion', Mill famously presents a series of arguments for the freedom of thought and discussion, each directed against the 'peculiar evil' of silencing discussion. Staley notes that Feyerabend cited Mill as 'the *originator* of much of what he had to say in defence of epistemological anarchy', and notes, too, that these citations are to *On Liberty* (Staley, 1999: 604). He goes on to suggest that this generates a tension within Mill's philosophy of science, which was outlined in *A System of Logic*. The tension arises because, in *System*, Mill defends a methodology of science which, *prima facie*, seems incompatible with the 'epistemological anarchism' which Feyerabend had in mind. Staley goes on to argue that the theories of knowledge espoused in *Logic* and *Liberty* are 'entirely compatible', on the grounds that they reflect 'underlying principles of rationality' accompanied by a clear emphasis upon 'quite broad liberty of belief and expression' (Staley, 1999: 606).

Staley's 'compatibilist' reading of Mill's epistemologies in *Logic* and *Liberty* was criticised by Struan Jacobs. Jacobs argues that Feyerabend's interpretation of Mill as a 'proto-pluralist/anarchist on scientific theories and methods' relies upon a 'strained interpretation' of the second chapter of *On Liberty*. Moreover, Staley 'tortured Mill's texts' in his double claim that *Liberty*, first, articulates a 'pluralist anarchist' epistemology, which is, second, compatible with that in *Logic* (2003: 210). For reasons explained shortly, I will not treat the details of Staley and Jacobs' arguments, and instead move to Jacobs' conclusion. He suggests that Feyerabend was wrong to

[74] Interestingly, and importantly, Feyerabend added that 'the fate of the individual is more important than the fate of science' (Feyerabend and Lakatos, 1999: 240).

interpret Mill as a nascent 'epistemological anarchist'; indeed, if Mill were, then he would surely have been required to repudiate *System of Logic*, which he never did. (Indeed, the book went through multiple re-editions long after *Liberty* appeared). Although there may be 'commonalities' between the two texts, their emphases and epistemologies 'are decidedly different', since whereas 'the *Logic* is overwhelmingly concerned with science', *Liberty* 'hardly touches on it'. Jacobs concludes that Feyerabend was mistaken in 'believ[ing] Mill's arguments apply to science', and that he therefore 'anachronistically misread *Liberty* as a defence of methodological and theoretical pluralism in science' (Jacobs, 2003: 210).

Staley and Jacob are both correct that Feyerabend derived arguments for pluralism from Mill. This is also noted by Lloyd, although she does not confine this to theoretical (or epistemological) pluralism. However, the debate between Staley and Jacobs rests on an assumption which is, I suggest, mistaken: namely, that what Feyerabend took from *On Liberty* were arguments for *theoretical* pluralism in the sciences. There are three reasons to be suspicious of this assumption. First, Feyerabend tellingly remarked to Lakatos that, when speaking of Mill, 'I am always talking of *On Liberty*' (Feyerabend and Lakatos, 1999: 239). This is important, since *Liberty* is, of course, a defence of social and cultural pluralism; the epistemological arguments in chapter two are intended to support Mill's claims about freedom and individuality, not scientific research. Moreover, Mill's philosophy of science, including his account of methodology, is set out in *System of Logic*, yet Feyerabend hardly refers to it (and the few references are to incidental points; see, for instance, Feyerabend, 1993: 260fn8). Therefore, the sort of pluralism that Feyerabend was, *prima facie*, taking from Mill is social and cultural.

Second, the many remarks that Feyerabend makes about Mill, quoted earlier, all pertain to individuality, diversity of 'modes of living', and human 'wellbeing'. Feyerabend explicitly praises Mill for celebrating 'humanitarian' concerns, and for making them primary. Consider, for instance, Feyerabend's remark that what he found attractive in Mill was the fact that his remarks on scientific knowledge are 'part of *a theory of man* that aims to find conditions for the full and free development of individuality', such that 'the fate of the individual is more important than the fate of science' (Feyerabend and Lakatos, 1999: 240). Feyerabend shares with Mill the strong claim that human 'wellbeing' should be the primary value and that our other activities, the sciences included, should be assessed according to their contribution to this end. Therefore, Feyerabend places 'wellbeing' ahead of epistemic ideals—like 'truth' and 'knowledge'—which he often recorded his scorn for. In a letter to Kuhn in the early 1960s, Feyerabend makes clear his conviction that humanitarian values assume priority over epistemic ideals in a way consonant with a Millian emphasis upon individuality: one should 'judge the importance of a topic' from its potential contribution to the 'well being of mankind', understood in a broad sense as the 'exercise of one's imagination, from the full development of human faculties, and from spiritual happiness'. Feyerabend suggested to Kuhn that the significance of a topic—scientific inquiry, say—assumes 'importance' according to its potential to effect an 'increase, or a decrease of that well being'. Humanitarian values therefore assume priority over epistemic ideals, like the 'pursuit of truth', and Feyerabend recorded his 'total opposition' to 'any

attitude which says: "I am out to find the truth, come what may". What truth? And why? would be my question' (quoted in Hoyningen-Huene, 2006: 613-614).[75]

The third reason why Staley and Jacobs are mistaken in their treatment of Feyerabend and Mill is that it is clear enough, especially into the 'later' period, that the primary interest of all of Feyerabend's philosophical work was 'humanitarian'. Although Feyerabend is, of course best known as a philosopher of science, it is clear that what unifies his work is a commitment to 'humanitarian values'. Indeed, Feyerabend explained that the motivation behind *Against Method* 'was humanitarian, not intellectual' (Feyerabend, 1993: 3).

It is worth recapping these points. I argued that Staley and Mill are mistaken in their competing accounts of Mill's influence upon Feyerabend. First, Feyerabend makes it clear that the work of Mill's which most influenced his ideas was *On Liberty*, and, second, this accounts for the fact that the majority of his references to Mill pertain to individuality, diversity of 'modes of living', and human 'wellbeing'. Third and final, these latter points converge in the fact that Feyerabend made 'humanitarian' values central to his philosophy from an early stage, and kept them constant straight through to his 'later' period. Indeed, one can find a deep unity to his disparate concerns by identifying them as reflections of the fundamental concern of 'find[ing] conditions for the full and free development of individuality' (Feyerabend and Lakatos, 1999: 240). Both Mill and Feyerabend believed that pluralism was primary amongst these 'conditions', and it is this point—the connection between pluralism and the 'humanitarian' concern for human 'wellbeing'—which was what Feyerabend really took from Mill. Pluralism is a precondition for epistemic and, more importantly, 'humanitarian' progress.

5.3. The value of cultural diversity.

Feyerabend took from Mill the point that pluralism is preconditional for epistemic and humanitarian progress. This point is not specific to the sciences, although, of course, Feyerabend did think that theoretical pluralism (or 'epistemological anarchism') in the sciences would contribute to human 'wellbeing'. These points were inherited from Mill, whose 'utilitarian approach to philosophy suggests that the growth of knowledge is itself a "condition of human happiness and flourishing"'. Furthermore, Mill's 'most forthright and unequivocal defence of epistemic diversity is to be found in Chapter 2 of the essay *On Liberty*' (Kelly, 2006: 250)—the very chapter praised by Feyerabend. Indeed, the value of scientific knowledge and institutions must be understood relative to humanitarian concerns. In 'Consolations for the Specialist', for instance, Feyerabend asks whether the scientific monism defended by Kuhn (1962) is 'beneficial to us', and

[75] Feyerabend's opposition to the priority of epistemic ideals remained constant throughout his career. *Farewell to Reason*, for instance, challenges the values of 'Reason' and 'Objectivity', and *Conquest of Abundance* offers a potted intellectual historical inquiry into how and why 'abstractions', like 'Truth', were allowed to assume authority over concrete human wellbeing. See Horgan (1993).

warned that it would not: monism would 'inhibit the advancement of knowledge' and also, perhaps more urgently, 'increase the anti-humanitarian tendencies' characteristic of "post-Newtonian science"' (Feyerabend, 1970d/1981: 141, 131).

This worry about the beneficence of the sciences became a central theme in the later philosophy, especially when Feyerabend explored the possibility that the sciences were complicit with Western cultural and intellectual imperialism. From the late-1970s onwards, one focus of Feyerabend's work became the claim that certain features of Western modernity are actively hostile to global epistemic and cultural diversity. The aim of this section is to demonstrate how Feyerabend's appeals to Millian pluralism came to manifest, in the later work, in a much more complex set of concerns about global cultural and epistemic diversity. In so doing, I hope to show that Feyerabend did, in fact, importantly misunderstand certain features of Mill. My account of this misunderstanding differs from that of Staley and Jacobs, but it is, if accurate, far more radical, and points to features of Mill's thought that are diametrically opposed to the later Feyerabend.

The 'misunderstanding' concerns the purposes of pluralism. Feyerabend, of course, wants not only to affirm the value of epistemic and cultural pluralism, but also to protect and preserve them. Pluralism is valuable in itself. Feyerabend is especially hostile to the various forms of 'dogmatism' and 'monism'—such as those he saw in Kuhn and Popper—which, to his mind, militate against pluralism. Mill, by contrast, sees pluralism as a means to an end. One feature of *Liberty* that is not often properly appreciated is the point, strange as it might seem, that the 'ideal society' that Mill has in mind will not be 'pluralistic'. A diversity of 'experiments in living' is a means to the end of what will be, if Mill is correct, a fairly uniform society. The purpose of encouraging social and cultural pluralism is to maximise our 'experimentation' in 'modes of living', so that we might better identify the most efficacious sorts. Similarly for truth, the value of preserving a diversity of opinions is to assist us in the criticism and, therein, the rejection of 'false' beliefs and theories. Mill, therefore, sees pluralism as a means to an end, and his 'ideal society' will not exhibit the 'diversity' which Feyerabend saw him as celebrating.

The disagreements between Mill and Feyerabend's views on epistemic and cultural pluralism can be stated as four points. First, Mill saw social and epistemic pluralism as a means to an end. Feyerabend does not. Second, Mill is a convergentist, arguing that, over time, contemporary 'diversity' would gradually dissolve, as we converge upon 'true' knowledge and superior 'modes of living'. Feyerabend disagrees with this convergence upon (social and epistemic) monism, and actually sees it as a Bad Thing. *Farewell to Reason*, for instance, opens with the statement that cultural diversity 'is beneficial, while uniformity reduces our joys and our (intellectual, material, emotional) resources', and Feyerabend goes on to explicitly criticise 'powerful traditions' which affirm pluralism, but 'add that there must be limits to variety'. Recent history, he warns, is characterised by 'new and powerful uniformities'—such as the phenomenon of globalisation—which reflect a general hostility towards the 'the flood of styles, theories, points of view' which constitute global cultural and epistemic diversity'

(Feyerabend, 1987: v, 1, 2). (These 'monistic' tendencies are part of the wider 'conquest of abundance' narrative discussed in the later chapters).

These two points relate to the abstract concerns about the value and ends of pluralism and the latter two points are more concrete implications of the convergentist monism that Mill affirms. Third, then, Mill thinks that modernity enjoys a higher level of epistemic and cultural progressiveness than non-Western indigenous cultures—indeed, this is why Mill could, for all his affirmation of 'liberty' and 'pluralism', also support (and, indeed, contribute to) British imperialism. Fourth, because Mill sees modernity as enjoying a higher level of 'development', he is therefore compelled to support British (and, more broadly, European) imperial interventions into 'non-Western' indigenous cultures. Feyerabend, of course, disagrees that modernity is epistemically or culturally 'superior' to global indigenous cultures, and he is extremely hostile, on philosophical and political grounds, to the very idea that policies of 'Western imperialism' are at all justifiable. Indeed, much of Feyerabend's later work consisted of a persistent critique of Western cultural and intellectual imperialism, and he connected this with his advocacy of an epistemic and cultural pluralism. For these four reasons, Feyerabend should actually disagree strongly with much of what Mill has to say about epistemic and cultural pluralism—and, in fact, on certain readings Feyerabend should interpret Mill as defending exactly the sort of positions that he devoted much of his later work to opposing.

It is worth dwelling on the connections between Mill's commitments to liberalism and imperialism, for two reasons. First, an extended analysis will make it easier to see how and why Feyerabend's appeals to Mill are erroneous, and so it will serve a useful scholarly purpose. Certainly it should strengthen the case I made for suggesting that what unites—and, ultimately, separates—Feyerabend and Mill is a commitment to, but diverging account of, the value of pluralism. Second, a deeper understanding of how Mill could reconcile his liberal, pluralist sympathies with British imperialism will, I suggest, help us to better understand the connections between modernity, culture, and science. Since those three terms are rather elastic, it will help, before beginning, to offer a brief sketch of the argument that will follow.

My account is largely drawn from Uday Singh Mehta's study *Liberalism and Empire* (1999), 'a study in nineteenth-century British liberal thought'.[76] I focus on Mehta because his interest is in the 'epistemological perspective' underlying British Victorian liberal and imperial political theory, and how the 'framework established' by this 'perspective' served to organise the 'diversities of experience and life forms' reflected by Indian culture (1999: 20, 8-9). British political theorists like the two Mills—father John and son John Stuart—and Edmund Burke 'encountered' the history and culture of India through an 'epistemological framework' which located all world cultures on a

[76] Although my account relies heavily on Mehta, his own interpretation of Mill is uncontroversial. There is a generous critical literature concerning the support given by both Mills—John and John Stuart—to British imperialism. Mehta's account is, however, more philosophically ambitious. For corroborative historical studies, see Parekh (1995) and Varouxakis (2005).

'civilizational scale'. The cultural and epistemic progressiveness of cultures was assessed according to its level, higher or lower, on this scale; and, it goes without saying, Victorian Britain was much higher up the scale, whilst India lurked on the lower rungs. Inherent in this 'civilizational scale' were, of course, a system of normative judgements, such that, no matter how genuinely liberal and tolerant theorists like Mill strove to be, they could not 'avoid notions of superiority and inferiority, backward and progressive, and higher and lower' (1999: 20).

Mehta's study of Victorian British liberalism and imperialism is complex, far more so than my account here can, or, thankfully, needs to be. All that is needed for my purposes is his statement of the 'central problem' of liberalism and imperialism, and the solution he offers. I suggest that Mehta's explanation of why British political theorists could embrace liberalism and imperialism can help us to understand Mill, and, in turn, Feyerabend.

Mehta's opening question is how British political theorists, like J.S. Mill, 'committed to ideas of equality and liberty', could experience the 'plurality of extant life forms' indigenous to their colonies as 'little more than an occasion to assert a rational paternalism', and one with often destructive implications for the cultures indigenous to those 'colonial possessions'. Despite a sincere commitment to individuality, freedom, and self-determination, liberal theorists supported an imperial project which was, very often, destructive of the indigenous cultures of the colonial territories. Mehta puts the problem succinctly: 'how did ideas of equality, liberty, and fraternity lead to empire, liberticide, and fratricide?' (Mehta, 1999: 190). Certainly it is discomfiting to find J.S. Mill, renowned as a champion of 'liberty' and 'freedom', denying those very values to the Indian subjects which occupied him during his long career as a clerk for the East India Company.

The solution to this puzzle arises in an 'enduring and pressing tension' arising between two liberal commitments. Classical liberal theory includes a commitment, firstly, to 'intervention being progressive, [f]or bettering life', and, secondly, to 'limiting the use of political power'. Historically, notes Mehta, 'the arguments for the betterment of life or progress have always held a strong if not trumping suit' (Mehta, 1999: 79). In the case of British colonial India, liberal theorists like Mill invoked their commitment to the 'betterment' of the lives of the indigenous Indian population. Crucial to this, however, was, perhaps obviously, the conviction that 'betterment' was not only possible, but necessary—and this conviction was provided by the 'civilizational scale'. Indigenous cultures could be located on a 'scale' according to which their 'progressiveness', *vis-à-vis* their colonial 'superintendents', could be ascertained, at which point a powerful moral and political imperative for 'improvement' could be initiated. Victorian Britain ranked higher than India on this scale, and so colonial administrators, like Mill, saw it as incumbent upon themselves to progressively 'superintend' Indian culture.

This normative 'scaling' of cultures also transformed British colonial perceptions of the cultural integrity and heritage of India itself, because, as had been well known since at least the seventeenth-century, India was very far from being a stagnant, backwater culture. The noted philologist and Indologist Sir William Jones, founder of the Royal

Asiatic Society, had described Asia as 'the nurse of Sciences', rich in 'delightful and useful arts', 'glorious actions', and enjoying diversity and sophistication in 'laws, manners, customs, and languages' (Jones,1784: 1-10 *passim*). The British colonial administrators therefore had to respond to the 'delightful and useful' cultural, philosophical, and linguistic abundance of Indian culture in order to justify their 'superintendence' of it. Translated into Feyerabend's terms, colonial British administrators had to justify their 'conquest' of the cultural 'abundance' in evidence in India—but how?

Mehta supplies an answer. Although J.S. Mill and other liberal theorists, especially Burke, were aware (and, indeed, admiring) of Indian cultural heritage, their perceptions of it were not neutral. On the contrary, 'India' was encountered through an 'epistemological perspective' which rendered it as 'an unfamiliar world', which was, in every sense, 'provisional'. India may enjoy a striking richness in thought, belief, and practice, but these were merely provisional, remnants—however admirable—of the lower stages of the 'civilizational scale'. The Hindu cosmology, the caste system, Sanskrit, and the other features of Indian culture eagerly documented by scholars like Sir William were fascinating, to be sure, but they were 'provisional' and, therefore, destined to be erased as India began to ascend to a higher stage in the civilizational scale. Mehta argues that the perception of indigenous cultural beliefs and practices as 'provisional—and the interventions in their lives it permits', provides the 'conceptual and normative core of the liberal justification of the empire' (Mehta, 1999: 191).

Coupled with the 'progressive' imperative bequeathed by liberal political theory, the civilizational scale provides a functioning justification for imperialism: indigenous cultures, occupying lower 'stages' in the 'civilizational scale', require the 'superintendence' that the more developed colonial powers, like Britain, could offer. Moreover, it was morally and politically incumbent upon those powers to make progressive 'interventions' into those cultures, especially if, as in the case of India, they had lapsed into 'stagnation'. Mill himself, for instance, noted in *On Liberty* that there is 'too great a tendency in the best beliefs and practices to degenerate', and this is a point that Feyerabend himself approvingly quoted (Feyerabend, 1993: 29-31ff). However, a point that Feyerabend did *not* note was Mill's illustration of this point—namely, China, which, wrote Mill, became 'stationary', and had 'remained so for thousands of years', to the extent that, 'if they are ever to be farther improved, it must be by foreigners'.

Mill clearly locates cultures on an objective 'civilizational scale'. Victorian Britain rates higher than colonial India and this introduces two important points. First, it affirms a powerful normative imperative for Britain to assume 'superintendence' of India, one which reflects not gross economic interest, but, rather more nobly, a powerful moral and political purpose. Second, since India rates 'lower' on the scale, it does not—indeed, cannot—enjoy the benefits of more elevated political values, like those of liberty and equal opportunity. This explains why Mill could celebrate liberty, yet deny it to millions of Indians subject to the British Crown. 'Liberty', states Mill explicitly, 'as a principle, has no application to any state of things anterior to the time when mankind have become capable of being improved by free and equal discussion'—

and this is not a condition which India, to his mind, fulfilled.[77] Because India existed at a lower stage of civilization, the 'higher order' political principles—like that of liberty—do not apply to it. For this reason, British imperialists were justified in their 'superintendence', because only by 'developing' Indian culture could it ascend the civilizational scale and enjoy 'liberty', in the full sense.

Mehta concludes that nineteenth-century British liberals, like Mill, understood 'political institutions such as representative democracy' as being 'dependent on societies having reached a particular historical maturation or level of civilization'. Certain such societies do not achieve 'maturation'—due perhaps to accidents of history, wars, or whatever—and so, in such cases, 'empire services the deficiencies of the past for societies that have been stunted through history' (Mehta, 1999: 81). Since 'stagnant' cultures, like India and China, clearly lacked the 'great energies' and 'genius' necessary to invigorate themselves, they must come from without: that is, from vigorous, progressive nations like Britain. Mehta suggests that the rhetoric of the 'dynamism of empire' was, in fact, 'thoroughly wedded' to the liberal desire for the 'betterment of the world'. Indeed, it becomes 'easy to see why the deployment of power' was persistently reaffirmed, 'despite its acknowledged and sustained abuses' (such as the abuses of Robert Clive and Warren Hastings). These abuses extended, in many cases, to the 'wholesale erasure of extant life forms', assuaged by the faith that it was 'justified by a higher purpose' (Mehta, 1999: 87).

By this point, it should be clear that Mill and Feyerabend are actually quite apart. Mill defends a 'cultural convergentism', whereby global cultural diversity will gradually converge towards an ideal 'form of life'. This 'end state' will demonstrate none of the diversity which is praised in *On Liberty*, since it is made very clear there that these 'experiments in living' are intended as just that: experiments, whose purpose is to identify the most efficacious forms of living, such that those 'ineffectual' or 'provisional' ones can be abandoned. Moreover, Mill clearly considers that modern Western cultures are more highly developed than those of their colonial territories, and that this fact justifies imperial 'superintendence' and 'development'.

Mill locates world cultures on a 'civilizational scale', upon which Victorian Britain rated higher than India (and the other British colonial territories) and that these disparities justified—indeed, demanded—the 'superintendence' of those 'lesser-developed' cultures. This 'scale' itself relies upon an 'epistemological vision' which judged indigenous cultures to be imperfect, 'provisional' manifestations of certain 'ideal types'. As Mehta puts it, indigenous cultures were each perceived as 'embodiment of an abstract type', such that their 'singularity, individuality, [and] social and political identity' were erased (Mehta, 1999: 25). This is how and why the richness of Indian culture could be understood as 'provisional'. Within this 'epistemological framework', the 'integrity' of Indian culture disappeared, as its constituent beliefs and practices were reassessed according to alien and abstract criteria: 'their pains and joys,

[77] The introduction to *On Liberty* includes the remark that the 'doctrine of liberty' is, of course, 'meant to apply only to human beings in the maturity of their faculties', not to '[t]hose who are still in a state to require being taken care of by others'.

the meanings they attach to particular things and events, in short, the integrity of their life forms, are completely read out of the civilization or collectively of which they are deemed to be a part and its standing within a pre-established scale' (Mehta, 1999, 82). As Feyerabend might put it, certain 'abstractions', developed by external 'specialists', were imposed upon a stable culture, and used to retroactively deny and distort its achievements, successes, and integrity.

Since these abstractions were held to enjoy a privileged epistemic status, they correspondingly narrowed the British administrators' capacity to conceive of meaningful and intelligible 'modes of experience' divergent from their own. This is why, for Mehta, the epistemological problem of imperialism lies in 'how different realms of experience can and should relate to each other' (Mehta, 1999: 192). The indigenous cultures of India and other British colonial territories employed 'modes of experience' radically divergent from that of Victorian Britain. When confronted by '[p]eople who literally claimed to "see" and "touch" multi-headed or winged gods singlehandedly moving mountains', the conclusion was that such persons 'had more than just deformed imaginations or strange beliefs': 'they instantiated in concrete and tactile forms an "irrational" worldview and lived amid its directives and comforts' (Mehta, 1999: 35). British political theorists therefore lost sight of the (actual and possible) diversity of 'modes of experience', as they interpreted global indigenous cultures as imperfect, 'provisional' forms of life, whose development into 'higher' forms became a moral and political duty. As Mehta puts it, 'Once Mill has established the normative primacy of progress, the argument for empire, for tutelage, in a word for progressive superintendence, is all but complete' (Mehta, 1999: 105).

Feyerabend's is therefore not as much of a Millian as he supposes, since he overestimates his commitment to tolerance and pluralism. There are four points of disagreement. First, Mill is a cultural and epistemic convergentist, and therefore a monist, whereas Feyerabend is certainly not. Second, Mill sees pluralism as a means to an end, as an 'experimental' process of trial and error, whereas for Feyerabend, pluralism is an end in itself. Third, Feyerabend worries that Western modernity is hostile to global cultural and epistemic diversity, whereas Mill considers it to represent the highest 'stage' of contemporary human development. Fourth, Feyerabend thinks that the sciences, or the 'scientific worldview', are a part of the problem, because they provide intellectual legitimacy to Western 'imperialism'. Considering these four points of difference, one could in fact make the strong claim that Feyerabend and Mill are, far from being philosophical allies, poles apart.

5.4. Pluralism and convergence.

Feyerabend was wrong to identify Mill as a precursor to his pluralism. So, although I argued that the scholarly debate is misguided, the core point—that Feyerabend is mistaken to identify Mill as a 'proto-pluralist'—is correct (though not for the reasons that Staley and Jacobs suggest). First, I argued that they are wrong to suppose that Feyerabend drew arguments for theoretical pluralism from Mill. This is not consonant with Feyerabend's own remarks, since he explicitly states that what he admires in Mill

are the 'humanitarian' concerns with individuality, tolerance, and social diversity. Second, I then argued that, in fact, Feyerabend seems to misunderstand Mill's position on social diversity, in two ways. In the first case, Whereas Feyerabend sees social pluralism as a beneficent end in itself, Mill makes it quite clear that, on his terms, a diversity of 'modes of living' is a means to an end—that end being, in fact, a fairly uniform 'end state'. Therefore, Feyerabend and Mill have incompatible accounts of the value of social pluralism. In the second case, Mill clearly holds that modern 'Western' cultures are superior—or more 'progressive'—than those of 'non-Western' indigenous cultures (such as India), and he argues, further, that Western cultures are therefore justified in their 'superintendence' of their 'inferior' neighbours. Feyerabend is opposed both to Mill's assessment of the 'superiority' of Western cultures and the associated conviction that 'imperialist' intervention into indigenous cultures are therefore justified.

Ironically, perhaps, Feyerabend should actually be opposed to Mill. The reading of Mill's political philosophy offered in this chapter suggests that Feyerabend would be grossly mistaken to appeal to Mill and *On Liberty* to defend the sort of non-reductive social and cultural pluralism that the later philosophy espouses. After all, Mill sees contemporary global and epistemic pluralism as a 'provisional' state which will, in time, gradually dissolve. This is precisely the sort of 'conquest of abundance' which Feyerabend is implacably opposed to. This is not to say that Mill defends an intolerable sort of cultural monism, whereby the current diversity of 'forms of life' will be gradually reduced to one. Mill does not foresee cultural uniformity; however, he certainly does not share Feyerabend's position that a diversity of 'forms of life' should be a constant and unceasing feature of human life. Mill is not as pluralistic as Feyerabend supposes, but nor is he as monistic as the foregoing discussion may have implied.

Feyerabend and Mill do agree that epistemic diversity should be preserved for its capacity to protect against dogmatism and elitism. Mill warns that '[i]f resistance waits till life is reduced *nearly* to one uniform type', then humankind 'speedily becomes unable to conceive diversity, when they have been for some time unaccustomed to see it' (Mill, 1998/1859: 82). Therefore, as Kelly puts it, epistemic diversity should be preserved because it prevents such 'uniformity' ever arising. Feyerabend and Mill concur that appeals to epistemic diversity should be intended 'to support political and social diversity and hence freedom. The defence is cast in political rather than epistemological terms [and so e]pistemic diversity remained an end to be preserved not overcome' (Kelly, 2006: 255, 257). Where Feyerabend parts company is in the idea that Western cultural and epistemic practices are superior and that the scope of such diversity can be confined within their parameters. Indeed, John Gray (1996: 115f) argues that Feyerabend was unique amongst commentators in noticing that Mill's commitment to epistemic convergentism threatens to undermine his argument that epistemic diversity safeguards cultural diversity. If epistemic diversity provides the essential 'checks' that prevent dogmatic elites, then convergentism will undermine it; however, the fact that Feyerabend did not make this objection explicit weakens Gray's attribution of it to him—but certainly it is entirely plausible.

One question remains: did Feyerabend 'misunderstand' Mill's political philosophy, or did he simply ignore the more unpalatable aspects? This is a difficult question to answer. One could suggest that Feyerabend simply misunderstood Mill's remarks in *On Liberty*, or that he failed to notice the caveats about 'maturity of faculties' and 'stages of development'. However, this seems untenable, for two reasons. First, these remarks are omnipresent throughout *On Liberty* and it is surely impossible that Feyerabend missed them—especially when one bears in mind his enthusiasm for that 'great essay'. Second, it seems rather unjust to Feyerabend to suggest that he failed to understand the significance of these remarks. Therefore, I conclude—albeit with some regret—that Feyerabend was aware of the 'imperialist' content of Mill's political philosophy, but that he chose to ignore it. I suggest that Feyerabend decided to import those aspects of Mill's political philosophy which corresponded with his own interests—such as the value of tolerance, diversity, and humanitarian concern—but left out those aspects which did not (such as 'civilization stages', and convergentism).

Such selective use of Mill is not, in itself, objectionable. There is no reason why one must adopt a philosophy in its entirety, and so Feyerabend would have been justified in incorporating some aspects of Mill's political philosophy, but not others. What is objectionable, however, is Feyerabend's failure to mention the differences between his views and Mill's. This is a failure to observe certain scholarly norms. Either Feyerabend is trying to conceal certain aspects of Mill's philosophy, or he fails to do justice to Mill—but in either case, he is misleading us, whether deliberately or not. Indeed, it would be fairly simple for Feyerabend to detach the 'imperialist' aspects of Mill's political philosophy from the 'liberal' aspects. For instance, one could rather painlessly abandon the account of 'civilizational stages' and thereby dissolve the justification for imperial 'superintendence'. Such a move would, I think, detach Mill's liberalism from its possible imperialist implications, and would therefore allow Feyerabend to make a qualified—but entirely legitimate—appeal to Mill.

Chapter Six

Ch6 Cultural Diversity and the Scientific Worldview

This Chapter outlines Feyerabend's argument for the value of cultural diversity. This rests upon his pluralistic conception of 'the good life', an idea I develop with appeal to the work of John Kekes. Once Feyerabend's 'ethical pluralism' is in place I discuss his concern that the cognitive and cultural hegemony of the Western sciences poses a threat to it.

6.1. Introduction.

Feyerabend maintained that cultural diversity was a precondition for human wellbeing. There is a striking plurality of norms, values, and structures which can constitute a meaningful human life and so a correspondingly diversity of 'forms of life' is necessary to enable us to explore and realise these existential possibilities. Cultural diversity is therefore valued on 'existential' grounds, since it ensures the fullest possible range of values, aspirations, and 'projects' upon which meaningful human lives can be provided for and sustained. The value of cultural diversity is therefore primarily invested in social and political issues—or what Feyerabend called 'humanitarian' concerns.

My aims in this chapter are twofold. First, I develop Feyerabend's remarks upon the value of cultural diversity by considering it in the light of John Kekes' pluralistic account of 'the good life'. This should provide corroboration for Feyerabend's appropriations from Mill, and serve to fortify his remarks upon the function of cultural diversity in providing multiple ways of meaningfully living within the world. Second, once the pluralistic account of 'the good life' is in place, I consider Feyerabend's charge that global cultural diversity is under threat from the hegemonic tendencies of Western modernity. It is important to consider that Feyerabend's remarks about cultural diversity are always located relative to his wider historical narrative—the 'conquest of abundance'. Since the cognitive authority of the Western sciences is, on Feyerabend's account, central to this notion of 'conquest', they have an important place within his treatments of cultural diversity. At the end of this chapter, one should have a deeper understanding of Feyerabend's account of the value of cultural diversity and the threats which Feyerabend thinks are posed to it by Western modernity.

6.2 Ethics, cultural diversity, and 'the good life'.

Feyerabend's pluralism was comprehensive. Earlier chapters detailed his defence of epistemic and cultural pluralism, and some remarks have already been made about the value of the latter. Drawing upon both the history and philosophy of science, and other disciplines like anthropology and development studies, Feyerabend provided a wealth of historical, philosophical, and practical arguments for the value of cultural pluralism. Amongst other things, a diversity of cultures increases the range of epistemic, social, and political forms available to human beings, constituting what Dupré calls a 'library of the possibilities for human behaviour and belief' (Dupré, 2003: 110). In this section, I focus on the claim that cultural diversity maximises the 'existential' possibilities available to human beings—that is, the many ways in which a meaningful human life can be conceived and lived.

This was an abiding concern of Feyerabend throughout his career, beginning at least in the early 1960s. Invoking Socrates, Feyerabend assures us that the 'fundamental problem' facing human beings is 'which kind of life shall we lead?', and that epistemology, properly understood, 'concern[s] the welfare of human beings' and is 'therefore ethical' in nature (Feyerabend, 1961: 55-56).[78] Such sentiments remained constant throughout Feyerabend's career. Jumping from the early 1960s to the mid-1990s, for instance, one finds him reminding us of 'the normative component inherent in all statements of reality', and of the '"existential" component' of our epistemology: 'different ways of life entail different interpretations of expert knowledge', including, today, 'scientific knowledge' (Feyerabend, 2001: 249, 202).

Feyerabend clearly subordinates epistemology to ethics. The general idea he expresses is that, since the possibilities for human thought and action are delimited and structured by our understanding of reality, epistemology is inseparable from ethics. Our ideas about what the world is like are intimately linked to our ideas about how a life can be meaningfully lived—so much so that the demarcation between 'ethics' and 'epistemology' is, at the deepest level, unsustainable. In making this claim, Feyerabend is appealing to a long tradition within the history of philosophy which makes ethics the basis of all philosophy which goes to Socrates.[79] Ethics, in this sense, is understood as sustained reflection on 'the good life', rather than on discrete topics of moral concern, like euthanasia or obligations to distant strangers. Indeed, many recent writers have welcomed the revival of 'larger, and *more exciting*' conceptions of ethics than that which was current amongst many early-twentieth-century philosophers, such as Ayer (1936: Ch6) (Cooper, 1998: 2).[80] Contemporary ethicists, often those sympathetic to

[78] These remarks, and others like them, are discussed in Preston (1996: 20-22).

[79] For a very useful historical perspective, see MacIntyre (1995).

[80] An important early work here is Anscombe (1958) who criticised the prevailing moral philosophies of the day for their myopic focus upon moral language. It is perhaps worth noting that Feyerabend knew and studied with Anscombe; indeed, it was her influence that got his first paper (Feyerabend 1955) accepted for publication (see Feyerabend, 1995: 92-93ff). She and later moral philosophers shared the more ambitious and interesting idea that, as Mary Midgley wittily puts it, ethics should

'virtue ethics', insist that since the scope of ethics, properly understood, is 'human life', it makes no sense to confine it to certain 'big issues'—like euthanasia—since it should, rather, inform and illuminate all aspects of human life. This is the 'larger' conception of ethics—and, indeed, of philosophy—as a 'way of life', as the late Pierre Hadot (1995) put it.

No matter what one thinks about this 'larger' conception of ethics, two problems emerge when one tries to locate Feyerabend relative to it. The first is that Feyerabend explicitly disavowed ethics in the sense just described. When asked by an interviewer, a few months before his death, why he 'never or very seldom discuss questions of ethics, of morals', Feyerabend replied, with characteristic candour, '[b]ecause most of the stuff I read bored me to tears' (Feyerabend, 2001a: 166). The second is that, true to the first point, one would be hard pressed to find any sustained ethical reflection in Feyerabend's work—that is, any developed accounts of 'the good life', or how to achieve it. As Paul Tibbets complained, Feyerabend's talk of 'the good life' is 'notoriously fuzzy', since it lacks 'a detailed account of what constitutes the good life and what social/political structure would most guarantee and promote human happiness' (Tibbets, 1976: 368). So, perhaps oddly for someone who insisted that ethics is 'primary', Feyerabend in fact had very little to say about it—a point compounded by the general absence of ethicists from his bibliographies. Taken together, these two points pose a serious problem to the claim that Feyerabend has anything meaningful to contribute to ethics, and it may even seem to cast him into hypocrisy, since he actually 'did' very little of the ethics which, he insisted, was the 'fundamental problem' of all philosophy.[81] In what sense can Feyerabend meaningfully be described as 'doing' ethics?

The answer to this question will invoke the idea of 'human well-being'. Feyerabend was always concerned with identifying and sustaining the conditions under which human beings can flourish—realise their talents, cultivate their faculties, live happily, and so on. That is obvious enough in his appeals to John Stuart Mill and in the remark, quoted earlier, that the 'fundamental problem' of philosophy is 'how do I live?' Recall, for instance, that Feyerabend insisted to Kuhn that the 'importance of a topic' reflects its potential contribution to the 'well-being of mankind': meaning the 'exercise of one's imagination, from the full development of human faculties, and from spiritual happiness' (quoted in Hoyningen-Huene, 2006: 613-614). It is clear enough that by 'well-being', Feyerabend does not simply mean being well-fed and watered. Consonant with both Aristotle and Mill, the idea of 'wellbeing' includes, broadly, the satisfaction

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concern itself with 'the meaning of life, not just the meaning of words' (Midgley, 2007: xi).

[81] Liz McKinnell suggested to me that Feyerabend's failure to 'do' ethics need not open him to the charge of hypocrisy, on the grounds that he could well affirm its fundamental importance yet humbly leave it to others who would do it better. On these terms, Feyerabend may argue that ethics is important, but that it is in fact so important that it should be left to professional ethicists. This seems plausible, but how it would square against Feyerabend's disdain for 'specialists' is another question!

of diverse human needs—physical, moral, intellectual, social, and so on, and is therefore close to the Greek ideal of 'flourishing'.[82] Feyerabend is therefore programmatically engaged in ethics insofar as his philosophy has at its core a commitment to identifying the conditions under which human beings 'flourish'.

A core feature of Feyerabend's ethical claims is an emphasis upon the plurality of conceptions of 'the good life', or what may be called 'ethical pluralism'. Feyerabend maintained that human beings can live and flourish within a striking diversity of 'forms of life', ranging from specialist communities to large-scale cultures. Such ethical pluralism affords maximum scope for expressing different values, ideals, social and cultural forms, and so on. *Farewell to Reason* opens with the claim that diversity is beneficial while uniformity reduces our joys and our (intellectual, emotional, material) resources' and this is juxtaposed with a complaint about the 'homogenisation' of world cultures (Feyerabend, 1987: 1-3 *passim*). Feyerabend's worry here exactly parallels Mill's concerns about cultural 'stagnation' and both clearly oppose what they see as the increasing uniformity of their cultures. Both also see cultural pluralism as the antidote to such stagnation, but Feyerabend, unlike Mill, sees a diversity of forms of life as having an inexhaustible value. Feyerabend insisted that 'there are many ways of living [and] that cultures different from our own are not mistakes but results of a delicate adaptation to particular surroundings'; indeed, such cultures may have 'found, rather than missed, the secrets of a good life' (Feyerabend, 1987: 4).

Feyerabend is therefore critical of what Bhiku Parekh (2000) calls 'moral monism', the idea that underlying human cultures is a uniform, totally knowable, social transcendent 'human nature' which, in turn, legitimates claims about the existence of a single, 'true' form of life. Parekh argues that an irreducible cultural (or 'ethical') pluralism therefore offers our best resource for fully realising and expressing human 'capacities' and 'potentialities'. In a passage that Feyerabend would applaud, Parekh argues that cultural diversity adds 'richness and variety' to the world and stimulates 'imagination, creativity, curiosity, and love of difference'. He goes on to say that:

> 'Diversity also led to progress because it created a climate conductive to the emergence of exceptional and original minds, provided new sources of inspiration, and encouraged a healthy competition between different ways of thought and life. Furthermore, since no way of life developed all human potentialities, no type of character all desirable traits and no system of morality all virtues, each needed others to balance and complement it.' (Parekh, 2000: 41-42)

[82] It may be profitable to interpret Feyerabend's political philosophy with the 'Aristotelian social democracy' defended by Nussbaum (1990), who argues that, for Aristotle, the task of political planning is 'to make available to each and every citizen the material, institutional, and educational circumstances in which good human functioning may be chosen'.

Parekh's remarks on the value of cultural pluralism here are strikingly similar to Feyerabend's arguments for epistemic pluralism (as discussed in Chapter three). The guiding claim in both cases is monism should be rejected because it fails to capture the richness and complexity of phenomena. Any given system of knowledge or form of life includes and emphasises certain features and aspects at the expense of others, which may be occluded or even suppressed. Therefore, one must have recourse to a plurality of systems or forms of life, both to maximise the aspects of the world, or human nature being expressed, and to enable criticism between these competing systems and forms. Parekh remarks that these arguments for cultural pluralism issue in the claim that 'the good life could be lived in several different ways, that each profit[s] from a dialogue with the rest', and that it was wrong to 'construct a ideal mode of human existence' on the basis of 'some one or some small number of patterns' (Parekh, 2000: 43). I suggest that Feyerabend would concur in this judgement: since no one 'form of life' can adequately reflect all aspects of human nature, or capture all possible conceptions of 'the good life', one must encourage and sustain a vigorous cultural pluralism.[83]

There is a strong Aristotelian dimension to Feyerabend's conception of ethics. Unsurprisingly, then, Aristotle was the figure most often invoked in the later Feyerabend's discussion of ethics. *Conquest of Abundance* features regular appearances from Aristotle, especially in chapter seven, simply titled 'Aristotle'.[84] Feyerabend even names his own ethical principle 'Aristotle's principle', and explaining it will shed light on his own ethics. Feyerabend often used Aristotle's criticisms of Parmenides as an example of an ethics-based criticism of scientific and philosophical theories. There were two main forms of arguments used by Aristotle against Parmenides: first, he demonstrated mistakes in Parmenides' reasoning and arguments, and second, he pointed out that change and plurality were essential to human life (see Feyerabend, 2001: 200 *passim*). [85] In a remark that Feyerabend was fond of quoting, Aristotle declared that it would 'next door to lunacy' to regard change and plurality as unreal (*On Generation and Corruption* 324a18): the reason, of course, is that change and plurality are both obvious and central features of our social and political lives.

Feyerabend interpreted Aristotle as criticising Parmenides on both *rational* and *ethical* terms, criticising both his arguments and the implications of his theories for human life. This is also the same interpretation that Feyerabend makes of the Church's criticisms of Galileo; in the neglected chapter thirteen of *Against Method*, Feyerabend

[83] Indeed, a pregnant footnote in *Conquest of Abundance* includes the proposal that 'cultural differences [are] *special and changeable manifestations of a common human nature*' (Feyerabend, 2001: 34fn25, original emphasis). There are no further remarks to appeal to, but certainly one could argue that Feyerabend would be very sympathetic to the idea that there is some uniform human nature which expresses, and also changes itself by manifesting in a plurality of 'forms of life'.

[84] Chapter seven, 'Aristotle', was an essay whose publication history is unknown. Feyerabend may have intended it to be included in *Conquest of Abundance*.

[85] For similar remarks, see *Nicomachean Ethics* 1096b33, *On Generation and Corruption* 325a18, and *Physics* 185a12). See Feyerabend (2001: 208).

argues that the Catholic Church criticised both the 'scientific content' and 'ethical ([and] social) implications' of Galileo's new science and was right to do so on both counts (Feyerabend, 1993: 128; see further Feyerabend, 1993: Ch13 *passim*). In both cases, that of Parmenides and Galileo, one sees a familiar critical strategy: certain philosophical or scientific doctrines are criticised not only on empirical and/or theoretical grounds but also because of perceived deleterious social or ethical consequences. Feyerabend argued that a 'humane' science and philosophy would be sensitive to both sets of concerns:

> '[A] humane science must be adapted to the requirements of a balanced and rewarding life ... The task of thought, he [Aristotle] seems to say, is to comprehend and perhaps to improve what we perceive and do when engaged in our ordinary everyday affairs; it is not to wander off into a no-man's-land of abstract and empirically inaccessible concepts.' (Feyerabend, 2001: 217-218)

Feyerabend's ethics therefore consists in two commitments. First, the 'end' of all human activities is to contribute to human wellbeing, or, to 'the good life'. This is the end according to which one should assess values, practices, and institutions, no matter how exalted or allegedly 'independent' they are, or seem to be. Second, ethics, so conceived, is fundamental in the sense that there is no higher authority which could serve to undermine it. Feyerabend argued that 'citizens' must retain control over the institutions and regulations which affect their lives and he was consistently suspicious of any which tried to assert their special authority. The modern sciences, he argued, were guilty of just such 'authoritarianism'. The paper 'How to Defend Society against Science' (Feyerabend 1975c) reflects this very concern. Feyerabend argued that there is 'nothing inherent in science or in any other ideology that makes it essentially liberating'—which is true enough—and that ensuring the emancipatory possibilities of science requires us to understand and use it properly. This is a key function of the philosophy of science, and one in which Feyerabend strongly felt that the discipline had grossly failed. Science can therefore contribute to human wellbeing but only insofar as those affected by it understand its limits and possibilities. Its 'humane' potential is contingent, not inevitable, and dependent in large part upon our enjoying a proper understanding of it which is not marred by distorting philosophical models.

Feyerabend's worry was that science was forsaking its 'humane' potential to contribute to 'the good life' because it had insulated itself from external controls. It was increasingly captivated by 'abstractions' and therefore detached from the values and needs of the general population. These antidemocratic tendencies were justified by appeals to various false honorifics, such as the idea that science is 'value-free', 'rational', 'methodologically unified', and so on. The history and philosophy of science can help us to challenge these false images of science. Feyerabend maintained that,

> 'Any ideology that breaks the hold a comprehensive system of thought has on the minds of men contributes to the liberation of man. Any ideology that

> makes man question inherited beliefs is an aid to enlightenment. A truth that reigns without checks and balances is a tyrant who must be overthrown, and any falsehood that can aid us in the over throw of this tyrant is to be welcomed.' (Feyerabend, 1999a: 181)

Many concerns inform this remark, but the one pertinent here is the worry that science may become a 'comprehensive system of thought' which 'reigns without checks and balances'. Feyerabend had made this same point in his earlier argument that theoretical monism undermines the possibility of criticism and thus enables the hegemony of some one theory, as discussed in Chapters two and three (see Oberheim, 2006: Ch5; Preston, 1996: Chs5 and 7). In this case, citizens will no longer be able to participate in, or exert control over, its aims and activities. Feyerabend suggested that this was the message of Aristotle's ethical criticisms of Parmenides:

> '[W]e are dealing with political decisions superimposed upon scientific arguments. An overriding respect for experts tends to blur the distinction between the political and the scientific elements of our notions of reality; we are inclined to believe that the pronouncements of the experts are knowledge of the purest kind, without admixture. A study of Aristotle ... restores clarity and returns to the citizens a power they relinquished by mistake.' (Feyerabend, 2001: 220)

A science divorced from and uninformed by the general citizenry will likely fail to adequately reflect their values and concerns. There is a political point here, but also an ethical one: science not only exerts enormous influence over our educational, medical, environmental, and other institutions and practices,[86] but also affects our conception of reality and, therein, our ideas about the sorts of meaningful and intelligible life one can live within that reality. Feyerabend had already made this explicit in his 1962 paper, 'Explanation, Reduction, and Empiricism':

> '[T]he influence, upon our thinking, of a comprehensive scientific theory, or of some other general point of view, goes much deeper than is admitted by those who would regard it as a convenient scheme for the ordering of facts only ... [S]cientific theories are ways of looking at the world and their adoption affects our general beliefs and expectations, and thereby also our experiences and our conception of reality.' (Feyerabend, 1962/1991a: 45)

The sciences are of ethical concern because they affect the range of 'conceptions of reality' that are intelligible and meaningful within Western modernity. They can do this

[86] C. Fred Alford (1985: 205) notes that '[b]y science, in this [political] context, Feyerabend means all those modern institutions which claim a rational and objective basis for their authority; for instance, the medical establishment, and much of the educational establishment'.

in two ways. First, they can promote certain 'conceptions of reality', for instance, those which conform to a broadly materialistic or naturalistic outlook. These conceptions of reality are strengthened by the cognitive and cultural authority of the sciences and, more tangibly, by the influence of the sciences upon national educational curricula (see, for instance, Kitcher 2008). Second, they can occlude certain other conceptions of reality, either by denigrating them, or, more often, by denying the tenability of the metaphysics they invoke. Obvious examples would be the various magical, mythological, and theological cosmologies of the worlds' religions and indigenous cultures. Colin McGinn (1993: 16) assures us that it would be 'madness' to acquiesce in such non-scientific cosmologies, whilst Brian Ellis (1990: 19) argues that '[o]ne would have to have very good reasons indeed, or be very arrogant, not to accept the scientific viewpoint on questions of ontology as the best there is'; further testimonies could be provided. Of course, the fact that developing world cultures tend to afford the sciences cognitive authority does not necessarily preclude the toleration of alternatives, even radical ones. Feyerabend's worry therefore arises only when one conception of reality is 'absolutised' and asserted to be uniquely and exclusively descriptive of 'how the world is' in a way that *does* preclude alternatives (the metaphysical issues here are discussed in Chapters eight and nine).

Feyerabend's ethical worry about scientific 'conceptions of reality' may seem unfounded. After all, one reason that the sciences did emerge and become entrenched within Western cultures was the fact that they fed into their central 'projects', such as the application of technology to the amelioration of human life. Therefore his ethical worry, whilst intelligible, is unfounded. There are two responses to this. First, there is good evidence that many members of Western modernity have in fact experienced scientific 'conceptions of reality' as ethically impoverished in the sense that they fail to provide adequate conceptions of 'the good life'. Cooper writes that, from the early modern period onwards, a sense of 'disenchantment' arose for those dissatisfied with the emerging 'scientific image'.

> 'Those same people might also feel that the world, on the increasingly dominant conceptions of it, was a flat or thin one—insufficiently rich, at least, for knowledge of it to provide guidance to life. Richer metaphysical conceptions, it might appear, could be arrived at only through speculations that exceeded the strictures of the mathematised sciences, while conceptions that did not exceed them portrayed a world stripped of those ingredients—purpose and beauty, for example—which could serve to guide our activities' (Cooper, 2002: 56)

The 'disenchantment' of the world by the sciences is an old theme in the history of philosophy. The earliest forms of it can arguably be found in the writings of Democritus, Epicurus and Lucretius in the ancient world and has persisted through the writings of Henry More, the Romantics, and grew force, for obvious reasons,

throughout the nineteenth and twentieth centuries.[87] It became a dominant theme in modern European philosophy, clearly visible through Nietzsche, Kierkegaard, Weber (to whom we owe the term), Husserl (1970)[88], Heidegger (1977), and Marcel (1962)[89], amongst others (see Gutting 2005). There is too much to go into here, so I will simply note that Feyerabend shared this worry—indeed, he surely fits neatly in the tradition of 'Continental philosophy of science'. *Conquest of Abundance* contains many such complaints about the 'spiritual' poverty of the 'scientific worldview', and Feyerabend warned that scientific conceptions of reality tend to 'reduce abundance and devalue human existence', since they 'lack almost all the properties and events that make our existence important' (Feyerabend, 2001: 16). Feyerabend therefore concurs that scientific conceptions of reality are ethically impoverished insofar as they tend to lack the 'properties and features' which make human life meaningful. And in case one objects that Aristotle, allegedly Feyerabend's ethical hero, provided a conception of 'the good life' with no such 'richer metaphysical conceptions', there is the second point, namely, that Feyerabend's worry about the ethical poverty of scientific 'conceptions of reality' gain most of their force when one considers the many 'non-scientific', contemporary global indigenous cultures.

Feyerabend's worry that scientific 'conceptions of reality' fail to provide adequate conceptions of 'the good life' becomes most urgent when applied to 'non-scientific' cultures. These include the many historical and contemporary global indigenous cultures which are an express concern of the later Feyerabend. Cooper, for instance, notes that Feyerabend's concern 'emerges when we ask about the scientific realist's attitude towards forms of life in which the postulates and theories of science would not and could not "receive a response"' (Cooper, 2002: 196). Many non-Western cultures may share our enthusiasm for the practical utility of science and technology but fail to buy into the wider naturalistic outlook that, in our culture, they are coupled with. Indeed there is a rich literature upon the pragmatic selection of certain Western scientific and technological products by non-Western cultures according to pre-existing cultural interests and values. Feyerabend's preferred example was the 'Japanese Enlightenment' of the early 1870s.[90] In such cases, other cultures select certain values, practices, and

[87] For excellent historical and philosophical discussions of the 'disenchantment' theme in the history of Western philosophy and science, see Midgley (1992) and (2001).

[88] Heidegger (1977: 178) objected to Husserl's talk of a 'crisis' in the sciences, on the grounds that there is 'in no way a crisis of science as such. Today science goes its way more securely than ever before'.

[89] Marcel (1962: 14, 123) warned that 'a materialistic conception of the universe is radically incompatible with the idea of a free man', since it fails to provide a basis for aspirations and ambitions beyond those provided by the sciences. Therefore, the 'most serious error' of contemporary humankind 'lies in this failure of men to ask themselves what becomes of science'.

[90] See Feyerabend (1987: 86) and (2001: 160). An excellent recent study of the 'Japanese Enlightenment' and its effects upon modern Japanese culture is Wakabayashi (1998).

systems of thought from Western cultures; however this never, if ever consists in the wholesale import of conceptions of reality and of 'the good life' and so one should not imagine the Western scientific and cultural practices and systems will enjoy the same appeal for the members of the many non-Western cultures.[91] As Cooper puts it, much of the prestige of the sciences within Western modernity lies in their providing us with workable, even attractive, conceptions of 'the good life' which 'extend and lend sophistication' and 'visibly engage' with 'central "projects"' of modernity (Cooper, 2002: 186).

The sciences can in fact make good claim to fulfil many of our values and needs, because their historical emergence was informed by them—technological imperatives, say. No such claims can be made for non-Western cultures, most of which did not generate sophisticated indigenous scientific traditions (see Selin 1997). This is not to say that the sciences are confined to Western Europe and its former colonies; as Selin warns, '[i]f we continue to think of science as a purely Western phenomenon, we eliminate a world of possibilities and preserve a narrow view of life' (Selin, 1997: xix). However, the sciences do not enjoy the same depth and degree of cognitive and cultural authority in these cultures, and they often fail to 'resonate with' their values, practices, and institutions. Feyerabend can therefore legitimately raise ethical criticisms about the 'conceptions of reality' proffered by the Western sciences: they fail to reflect the abiding conceptions of 'the good life' of those cultures—many of which will be religious, say—and they may well be incompatible with the cosmologies upon which those cultures' conceptions of 'the good life' depend. This is evident in the following passage:

> '[T]he argument that established the illusory character of unscientific beliefs and ontologies ... started from an alleged scientific reality and concluded that people with different surroundings (centred spaces, spiritual entities) lived in an illusion.' (Feyerabend, 2001: 248)

Feyerabend invokes his radical epistemic pluralism. Global cultures, across time and geography, generated 'conceptions of reality' radically divergent from those of the modern sciences. These conceptions (or 'ontologies', in Feyerabend's looser language) included a startling range of 'exotic' entities and processes, from anthropomorphic gods to ancestor spirits, transmigration of the soul, and *kamma*. However, those conceptions of reality, in the majority of cases, provided a coherent conception of 'the good life', one which provided an account of a 'flourishing' life and how to live it. Feyerabend

[91] Preston rightly points out that,' [t]oo often, for Feyerabend, our choice is between a completely scientific culture (or part of a larger culture) and a completely non-scientific one'. Indeed, this 'all or nothing' attitude towards intercultural exchange conflicts with Feyerabend's later emphasis upon the 'ambiguous' nature of cultures. Preston concludes that Feyerabend should have 'imbibed the deeper pluralism that he advertises here, in which cultures are open, interact, and are transformed via their interaction with others' (Preston 2001: 621-622.).

argued that the inhabitants of many non-scientific cultures, historical and contemporary, 'noticed, reacted to, and arranged their lives around all sorts of entities'—including gods and demons and magical entities—and yet 'were by no means more disoriented than we are' (Feyerabend, 2001: 246).

Feyerabend defends a pluralistic conception of 'the good life' connected to a radical epistemic pluralism. The values and practices of certain of these conceptions rely upon a diversity of ontological commitments and epistemic authorities many of which are mutually incompatible with one another (and Feyerabend liked to contrast the gods and demons that appear within some forms of life with the ontologies of the physical sciences). There are many ways of meaningfully and intelligibly conceiving of and living within the world, only some of which are represented by Western scientific and cultural practices. Such interlinked epistemic and cultural pluralism is what Feyerabend refers to as the 'abundance' of reality and it ought to be praised and cherished. Such pluralism is defended, primarily, on ethical grounds: since 'well-being is evaluated differently at different times and in different cultures' it makes sense to preserve a diversity of 'forms of life', both to maximise the range of 'possibilities' available to us, and to prevent the dissolution of extant, successful 'forms of life' (Feyerabend, 1987: 31). And this defence of epistemic and cultural pluralism is not an 'anything goes' attitude. Feyerabend resisted the charge that he was romanticising indigenous cultures as idealised pastoral paradises:

> 'I do not mean to say that all is well in indigenous societies and that outside help is never needed ... There is no perfect society just as there is no perfect human body. However, the authors I criticise [in *Farewell to Reason*] go much further. They not only assume that help may be needed, they take it for granted that *any* change in the direction of Western civilization and especially of Western science is bound to be an improvement. This is simply not true.' (Feyerabend, 1987: 26fn10)

Feyerabend therefore maintained that there are many ways of living within and making sense of the world and so defends epistemic and cultural pluralism. Only some of these correspond to the conceptions predominant within Western modernity; however, there are many agencies and institutions within Western modernity which deny this 'abundance' and so attempt to 'conquer' it. The sciences play a key role in this 'conquest' because their claims to superlative practical and cognitive efficacy are used to justify the displacement of 'inferior', 'non-scientific' beliefs and practices. This argument finds its origin in *Against Method* and the challenge it posed to the special epistemic authority of the sciences. It gained force throughout the 1970s and 1980s, as Feyerabend began to engage with anthropological, environmental, and development studies literature—and, of course, as he experienced the political climate of the period; this was a period of radical social and political unrest, since it saw the civil rights movement, feminism and environmentalist movements, and increasing indigenous rights activism. The 'conquest of abundance' is therefore sustained, at least in part, by exaggerated conceptions of the efficacy of the sciences, and a denial of the pluralistic

nature of 'the good life'. As Feyerabend put it, studies of indigenous peoples indicate that 'there are many ways of living, that cultures different from our own are not mistakes but results of a delicate adaptation to particular surroundings, and that they found, rather than missed, the secrets of a good life' (Feyerabend, 1987: 4). In the next section, I secure Feyerabend's ethical claims by considering them in the light of John Kekes' recent defence of a pluralistic conception of 'the good life' and the danger posed to it by science.

6.3 Kekes' pluralistic conception of 'the good life'.

Kekes (2000) argues that philosophical pluralism is essential to responding to the pursuit of 'the good life'. Against the 'craving for generality' that has characterised the history of ethics, Kekes urges us to re-conceive 'philosophical thinking about good lives' to respect 'the plurality of reasonable conceptions of a good life' (Kekes, 2000: 1). Our historical and anthropological sense shows us that human beings have conceived of 'the good life' in a startling variety of ways, in response to varying cultural, environmental, and intellectual conditions. Others will doubtless emerge in the future. The 'good life' has been conceived as a life of Stoic virtue, obedience to ancestor spirits, Christian faith, Buddhist 'release from suffering', humanist 'authenticity', Nietzschean creation of a 'table of values' of one's own, or modern liberal capitalism. Any number of others could be included, disputed, or conceived (see Hadot 1995 and Kupperman 2006).

Considering the plurality of conceptions of 'the good life', Kekes urges us to reject the 'absolutist strategy' of 'assign[ing] precedence to a favoured mode of reflection', such as science, which might 'relegate rival modes to an inferior status' (Kekes, 2000: 5f). Of course the sciences have a great influence to shape and inform our conceptions of the 'good life', in a way that aesthetics or religion, perhaps, do not. Although moral, aesthetic, and religious concerns and values may continue to inform certain of our activities they are not likely to enjoy much authority to determine our views about what reality is like; in Theodore Brown's (2009) terms, these may enjoy 'moral authority' but not 'epistemic authority', insofar as they can tell us how the world should be, but not how it in fact is and this latter point about epistemic authority constrains the moral authority of, say, aesthetic and religious concerns. The epistemic authority of the sciences may therefore impose parameters upon the moral authority of competing conceptions of 'the good life'. However, this fact should not obscure the point that:

> '[R]eflection on our lives ... occurs in an irreducible plurality of modes, which include the scientific, historical, religious, moral, aesthetic, and subjective [and] each of these modes of reflection provides a perspective that is believed to make an important contribution to good lives.' (Kekes, 2000: 4-5)[92]

[92] Geertz (2001) offers interesting anthropological perspectives on the themes germane to Kekes' remark here. My thanks to Liz McKinnell for this reference.

Kekes clearly opposes the presumption that reflections on the 'good life' should prioritise the 'modes of reflection' offered by the sciences. This point is amplified by Feyerabend's worry that the premiere cognitive and cultural authority of the sciences has a tendency to disenfranchise other 'modes of reflection', both within Western modernity, and especially in other cultures for whom the sciences enjoy much less, if any, prestige.

Kekes' pluralistic account of 'the good life' and his resistance to 'absolutist' prioritisation of any single 'mode of reflection'—scientific, say—find strong parallels with Feyerabend's own remarks. I will take each point in turn. First, there is the plural nature of 'the good life'. Feyerabend argues that 'there are many ways of ordering the world that surrounds us', only some of which are represented by Western cultural practices. 'People all over the world', spread across cultures, history, and geography, developed cultures which 'enriched their lives, protected them, and gave them meaning' (Feyerabend, 1993: 162, 3). Many, if not all, of these cultures were 'non-scientific', in the sense that the sciences—understood as sustained, systematic inquiries into the empirical world—play little to no role in them. Indeed, many of these cultures, especially those in the distant past, would have had no conception of the sciences at all. Yet despite the absence of scientific 'modes of reflection', these cultures served the practical and cognitive needs of their members, and, more importantly, provided tenable conceptions of 'the good life'. As Feyerabend asks, in full rhetorical flow,

> '[A]re we really to believe that people who were not guided by a scientific worldview but who still managed to survive and to live moderately happy and fulfilling lives were the victims of an illusion? … [O]n the contrary, their lives were occasionally less scattered, aimless, and cruel than our own. Is it plausible to assume that all this was a grandiose mistake?' (Feyerabend, 2001: 246)

Feyerabend therefore concurs with Kekes that there are many conceptions of 'the good life'.

Second, Feyerabend criticises the unwarranted prioritisation of scientific 'modes of reflection' and conceptions of 'the good life'. This is of course an aspect of his rejection of the presumption of the omnicompetence of science. Human beings ought to consult the fullest possible range of 'modes of reflection', rather than remaining within the confines of just one, such as science. This point is consonant with Feyerabend's general philosophical commitment to the critical value of pluralism and proliferation. Indeed, Feyerabend was enthusiastic about the value of the arts in defining and constituting meaningful human lives: '[t]he arts ... are not a domain separated from abstract thought, but complementary to it and needed to fully realise its potential', such that one needs a mode of inquiry that 'unites [the] power [of the arts] with that of science and religion' (Feyerabend, 1993: 267).[93]

[93] See further Feyerabend (1967).

Feyerabend made clear that the value of philosophy consists in its capacity to nourish and inform our conception of 'the good life'. Recalling his lectures on Aristotle, Plato, Mill, Wittgenstein, and Kierkegaard, Feyerabend remarked that,

> 'I don't study and discuss these authors to embellish a *subject*, or to construct a *system*, or to cultivate *ideas* … but to provide myself and my listeners with a survey of the possibilities of human existence.' (Feyerabend, 1991b: 495)

Of course, not only science and philosophy, but also the arts, religions, and the entire history of human cultures should contribute to this goal. Feyerabend was especially keen to include non-Western traditions because they of course included 'possibilities of human existence' radically alternative to those of Western culture. Dupré concurs, offering the similar claim that:

> '[C]ultural diversity should be valued and protected just as increasingly many people are insisting we should value biological diversity, and for essentially similar reasons. Just as biological diversity provides an enormous library of chemical and behavioural possibility, so does cultural diversity provide a library of the possibilities for human behaviour and belief.' (Dupré, 2003: 110)

Non-scientific cultures 'express ideals of life and possibilities of human existence', but were 'ridiculed and replaced as a matter of course' by European and, later, Western religious, political, and scientific groups and agencies with competing conceptions of the 'good life' (Feyerabend, 1993, 264).[94] In another polemical passage, Feyerabend complains that:

> 'The 'progress of knowledge and civilization'—as the process of pushing Western ways and values into all corners of the globe is called—destroyed these wonderful products of human ingenuity and compassion without a single glance in their direction.' (Feyerabend, 1993: 3)

There is exaggeration here. Many early modern Europeans did express genuine admiration for the lives, values, and beliefs of global indigenous cultures and happily imported them into their home cultures, and such enthusiasm continues today.[95]

[94] Charles Taylor (1991: Chs9-10) argues that the predominance of scientific conceptions of 'the good life' have generated the social, political, and existential problems which, he and others allege, beset Western modernity.

[95] This is characteristic of the Romantics, eighteenth-century 'Orientalism', and European enthusiasm for the archaeological and cultural heritage of their colonial territories. Johann Gottfried Herder is arguably the first figure in the European tradition to make this point explicit; see Denby (2005).

However, the muted point that Western modernity has, across its history, generally tended to displace alternative conceptions of 'the good life' has been largely substantiated, especially by 'post-colonial studies' scholars, such as Frantz Fanon (1968), or the testimonial literature on and by oppressed indigenous peoples gathered by groups such as Survival International. Global cultural diversity provides us with a vastly greater range of epistemic and existential resources than Western modernity by itself can offer, and there is no good reason not to explore them.

Feyerabend seems to have two points in mind here. First, global cultural diversity may offer 'possibilities for human existence' that could then be seriously considered and perhaps chosen by the members of Western modernity. Not all indigenous cultures' ways of life will be intelligible or attractive to us, but there is no reason that they should be. Some may strike us as abhorrent, such as those which persist in sexist social structures, or rigid theocratic structures.[96] Others may neither invite nor sustain our interest or simply provide opportunities for 'cultural tourism' and nothing more. And of course, many 'Westerners' do choose to embrace the 'ways of life' of non-Western peoples, whether in part or in whole. Second, one may consult global cultural diversity as a means of gaining wider perspective upon Western modernity. That is, many Westerners may explore and delight in the diversity of languages, values, beliefs, practices, and 'forms of life' evident throughout world cultures and take from it, not an enhanced sense of their 'possibilities for existence', but simply of the richness and contingency of their own ways of life. Feyerabend, after all, praises choice, and so would want us only to make an informed choice regarding our own way of life. As Grazia Borrini-Feyerabend nicely puts it, Feyerabend's point is that, '[w]e can *choose* to live in a world that makes sense to us' (Borrini-Feyerabend, 2001: xi).

6.4 Cultural diversity and modernity.

Feyerabend maintains that human beings 'flourish' best by appeal to conceptions of 'the good life'. Following Mill and Kekes, a broad cultural pluralism is therefore preconditional to 'ethics' in the 'rich' sense outlined earlier. The fullest diversity of conceptions of 'the good life' can only be achieved if the possibilities offered include radical alternatives to one another, rather than being mere variants on some narrow set. Feyerabend also maintains that a primary role of philosophy, science, and the state to sustain and facilitate a diversity of conceptions of 'the good life'—this is the core of his claim to be practising 'ethics'. However, allied to these positive claims, there is also a

[96] An obvious worry which arises here is that Feyerabend's pluralistic conception of 'the good life' will commit him to embracing social systems which include, for instance, oppressive social, political or religious systems. Feyerabend's views on intercultural criticism vacillated in line with his changing conceptions of, and sympathies towards 'cultural relativism'. In his very late writings, he does in fact agree that intercultural criticism is quite legitimate and that intervention can be justified after sustained contact with a representative sample of the culture in question. See Feyerabend (2001: 34fn25).

negative, critical dimension, and one which concerns the role of the sciences within the modern world. Feyerabend maintained that certain powerful intellectual and cultural features of Western modernity are hostile to cultural diversity. My aim in this section is to examine and assess this claim in the light of Feyerabend's later philosophy.

An interesting historical story could be told about science, modernity, and cultural diversity and our success in understanding our contemporary situation may well rest upon the availability of such histories. Recent historians of science, culture, colonialism, and race are providing materials which will doubtless feature in such future histories (see Keal 2003). 'Until recently', write two historians of colonial science, 'the connections between early modern European science and Europe's increasing engagement with the rest of the world have been overlooked by historians' (Delbourgo and Dew, 2008: 7). These connections are now becoming clearer and are providing fertile ground for historians of science, economics, culture, and travel. Although summarising this large and growing literature is beyond the scope of this chapter, an emerging theme evident throughout much of it is the fact that the sciences were 'fostering new confidence in the universal validity' of European scientific knowledge (Delbourgo and Dew, 2008: 7). Two of the luminaries of Enlightenment science, Linnaeus and Newton, between them made ambitious claims to provide truly universal systematic explanations of the physical and biological worlds. Such scientific ambitions were coupled with European political and economic interests to generate a 'planetary consciousness' (Pratt 2008: 15-37ff) which encouraged a general perception that the ostensibly 'local' European sciences in fact enjoyed trans-cultural epistemic authority. Margaret C. Jacob concludes that '[t]he resulting knowledge, wealth, and political power laid the foundation for an unprecedented geopolitical hegemony' (Jacob, 2008: 333).[97] The historical story here is interesting, but my interest is with contemporary phenomena which indicate that cultural diversity is under threat. Evidence is not hard to come by; there is extensive documentation of the ongoing disappearance of indigenous cultures—including phenomena such as 'language death', urbanisation, the displacement of tribal populations, and so on (see Blaser, Harvey, and McRae 2004; Crystal 2002; Gray 2002).[98]

There are a vast range of reasons for these phenomena, across the spectrum of political, economic, social, and religious concerns, plus others, most cases involving the interaction of any number of these. Feyerabend, however, argues that the sciences have supplied specific epistemic reasons for hostility towards cultural diversity. The sciences are widely thought to provide descriptions of reality which are independent of cultural, linguistic, religious, or historical particularities; and since these are also judged to be

[97] Jacob (2008, 333) is, however, surely wrong to talk about 'the massive imbalance of power that once existed between the West and the rest' in the past tense. If anything, such imbalances have grown over time.

[98] See also the United Nation's Declaration on the Rights of Indigenous Peoples (2007). Of course, one could argue that such global declarations and the international political institutions associated with them are themselves impositions of Western value systems upon non-Western cultures.

uniquely veracious, any contradictory accounts must be corrected—this was the idea informing Mehta's account of British 'superintendence' in colonial India. As Feyerabend puts it:

> 'The assumption that there exist universally valid and binding standards of knowledge and action is a special case of a belief whose influence extends far beyond the domain of intellectual debate. This belief may be formulated by saying that there exists a right way of living and that the world must be made to accept it.' (Feyerabend, 1987: 10-11)

This is not just the claim that scientific practices enjoy superior practical and cognitive efficacy, but, at a deeper level, that they alone describe how the world is and so can—and perhaps must—act as arbiters for our beliefs and practices. Since reality is thus construed in the terms of epistemic monism, only one way of conceiving of and living within the world are legitimated. Alternative conceptions of 'the good life', for instance, are ruled out in advance because they require ontological commitments which are incompatible with a naturalised ontology—typical examples include gods, ancestor spirits, magical forces, or supernatural processes like transmigration of the soul or providence. These are all ontological commitments central to the religious and ethical thought and practice of the majority of the world's peoples, past and present, and yet they are certainly incompatible with even the most liberal thesis of naturalism.

Feyerabend rejects ontological naturalism on ethical grounds. The entities and processes disclosed by scientific inquiries reflect, as Dupré notes, a rather narrow set of cognitive and practical values; they certainly neglect the moral, aesthetic, teleological and other values which constitute a meaningful human life. Feyerabend argues that:

> 'The entities unearthed by science ... are important only if the resulting world is pleasant to live in, and if the gains of manipulation more than compensate for the losses entailed by the removal of the non-scientific layers. The objection that the entities and laws that connect them are "real" and that we must adapt to them, no matter how dismal the consequences, has no weight.' (Feyerabend, 2001: 12)

This passage clearly states Feyerabend's ethical criterion for the assessment of scientific conceptions of reality. It is non-epistemic moral, social, and political values which are made primary, not epistemic criteria, because the 'consequences' referred to are the implications for human wellbeing. At the least, Feyerabend urges us to take seriously what he calls the 'existential' consequences of the adoption of a scientific conception of reality. Of course, this is not a common view in the philosophy of science. The priority of epistemic values in assessing ontological commitments is described by Yvonne Raley (2005) in her account of ontological naturalism:

> 'We should take protons and electrons to be real if physics tells us they're real, and we should take numbers and sets as real if mathematical practice

> says so. Witches, elves, and phlogiston, on the other hand, are not to be taken as real; and this is simply because they do not play a role in science.' (Raley, 2005: 284)

There are many problems with ontological naturalism so described. An obvious objection, often raised by Feyerabend, is that the sciences, disunified and pluralistic as they are, do not offer us anything like a coherent or unified ontology (see Galison and Stump 1996). Another is that the ontological commitments of the sciences fluctuate over time, as the theoretical and empirical evidence for particular entities changes over time, sometimes dramatically (see Daston 2000a and 2000b). The ontological commitments of the sciences therefore vary across history, disciplines, and theories, and so to take our ontological cues from those entities which 'play a role in science' is a very shaky strategy. Feyerabend, however, presses a values-based objection: the main values upon which scientific knowledge and practices should be assessed are their capacity to contribute to 'the good life', to human wellbeing in the broadest sense—that is, 'humanitarian' values. The 'value-free ideal' of science is therefore illusory, insofar as the sciences are, in fact, informed by cognitive and practical values and, in most cases, further sets of moral and other values. Dupré argues that certain areas of the science, such as physics, may be largely free from non-epistemic values, but insists that many other areas of the sciences will not and, perhaps, cannot be. If ethics is primary, as Feyerabend argued it must be, then the sciences must have non-epistemic values built into them: otherwise the sciences will fail to provide a meaningful and intelligible world, in the way that the majority of 'non-scientific' indigenous belief-systems do.

Critics may dismiss the claim about the primacy of ethical criteria. Such objections may take the form of an insistence that scientific knowledge and practices simply provide the means for pursuing ends, rather than specifying ends in themselves. However, this argument surely serves the opposite end; rather than dismissing the primacy of the ethical, it sustains it, for the following reason. The very fact that the sciences are pursued within Western modernity and are afforded a considerable degree of prestige and authority means that they must hold some value for us. That is, the sciences are judged to be valuable, and this judgement must, in itself, invoke certain values—certain ideas about what matters, and why. Of course, the critic could reply that the sciences are directed towards broadly epistemic aims, such as 'Truth', rather than towards non-epistemic aims—moral, aesthetic, or whatever—which one may refer to as the 'Good'. The sciences could therefore be oriented towards Truth rather than the Good in a way that could secure the independence of science from ethics.

Persuasive as this argument may seem, it surely fails. Even if the distinction between Truth and the Good as broad aims of science can be sustained, the value of the former is surely dependent upon one's conception of the latter. That is, if the value of the sciences is judged to lie in their capacity to secure Truth, even if only in principle, then this must, in turn, imply that Truth itself is held to be valuable or important in some wider sense—and this wider sense is defined by one's conception of the Good. As David E. Cooper puts it, even if the aim of the sciences is construed as their capacity to generate 'propositional knowledge' or to fulfil 'some practical purpose', then these

must be 'already invested with an orientation towards the Good' (Cooper, 2009: 13).[99] Simply put, the claim that the sciences simply fulfil our epistemic interests requires that one has already invested such epistemic values—like 'truth' or 'knowledge'—with value, and that value cannot, in itself, be conferred by the epistemic values themselves. Rather, the value afforded to truth and knowledge is secured once those values are located within a wider, deeper conception of the Good, of 'the good life', one in which epistemic values—like scientific knowledge and understanding—are considered significant or salient.

It is worth recapping the pertinence of the foregoing remarks to Feyerabend. Feyerabend asked the question, 'What's so great about science?' Initially, this question was interpreted as a concern with the epistemological status of the sciences, especially regarding their efficacy *vis-a-vis* other, 'non-scientific' epistemic activities. Although this interpretation captures much of Feyerabend's meaning, it neglects the important 'humanitarian' aspect of his concerns about science: namely, do the sciences fulfil our 'ethical' needs, satisfying the host of 'non-epistemic' values which define our conception of a meaningful life? Feyerabend worried that the 'scientific ethos [is] simply too thin a foundation for a life worth living', and stated his desire to 'protect people from being corrupted by a narrow ideology that ... was incapable of sustaining a harmonious life' (Feyerabend, 1993: 131, 133).

The 'ideology' in question is the scientistic claim that science is 'omnicompetent' insofar as it can fulfil all human values and needs. It is one thing to claim that scientific knowledge and practices enjoy striking cognitive and practical efficacy, and quite another to claim that it should be the sole authority informing and structuring human life. A host of writers, including Kekes, Midgley, and Dupré, all express their concerns about such grossly exaggerated conceptions of the explanatory powers of the sciences—or, better, of 'the monster, Science' which Feyerabend directed much of his later work towards slaying. Feyerabend therefore calls for a thoroughgoing epistemic and cultural pluralism. The flourishing of human beings is best served through recourse to a wide range of beliefs, practices, traditions, and 'forms of life', only some of which will be recognisably 'scientific' or 'Western'. There is also an important role for disciplinary pluralism, since the arts and humanities and social and natural sciences all have a role to play in nourishing and sustaining the vigorous pluralism that Feyerabend has in mind.[100]

Unifying these diverse resources is, of course, a guiding ethical concern: namely, the project of identifying and facilitating the conditions under which human beings can best identify and pursue 'the good life', however that might be conceived. The major obstacle to this ambition is, however, the enormous cognitive and cultural authority of the Western sciences. Feyerabend and the other writers cited, plus others, of course, all concur that there are powerful intellectual and cultural trends within Western modernity

[99] See Kidd (forthcoming d) for a discussion of Cooper's claim here as it might apply to Feyerabend.

[100] See further Dupré (2002) and Midgley (2004) for similar calls for a vigorous epistemic pluralism, especially regarding our understanding of human beings.

which militate against epistemic and cultural pluralism. Epistemic monism strives to find 'the' single, efficacious set of epistemic practices and activities, which are usually expected to be coherent with the current sciences. Cultural monism similarly tries to identify a singular conception of 'the good life'—for instance, a secular way of life invested in a naturalistic outlook. In any case, whatever this monistic form of life may consist of it will owe its hegemony not to a progressive critical rejection of alternatives, but to the unwarranted exclusion of other possibilities. As Charles Taylor argues in his magisterial study, *A Secular Age* (2007), we are too often blind to:

> '[T]he possibility that Western modernity might be powered by its own positive visions of the good, that is, by one constellation of such visions among available others, rather than by the only viable set left after the old myths and legends have been exploded ... [The sciences] "naturalise" the features of the modern, liberal identity. They cannot see it as one, historically constructed understanding of human agency among others.' (Taylor, 2007: 571)

Feyerabend is resistant to the exclusion of other available 'visions of the good' and urges us to capture them, for instance, by a sympathetic engagement with historically and culturally distant 'forms of life'. The aim of such surveys is not to establish or identity any one 'definitive' conception of 'the good life'—Feyerabend has no interest in becoming an authority in this sense—but, rather, in affirming to us the fact that alternative ways of conceiving of and living within the world is possible. At the least, one ought to become aware that the recent history of Western modernity, from colonialism to contemporary 'globalisation', reflects a common phenomenon:

> 'What is being imposed, exported, and again imposed is a collection of uniform views and practices which have the intellectual and political support of powerful groups and institutions. By now Western forms of life are found in the most remote corners of the world and have changed the habits of people who only a few decades ago were unaware of their existence.' (Feyerabend, 1987: 3)

Now, this claim is not, in itself, distinctive. Similar complaints about the expansionist policies of European and, later, Western cultures have been made by many writers, philosophers, indigenous rights groups, and others from at least the fifteenth century onwards. Indeed, many 'postcolonial' scholars object that talk of 'post-coloniality' is mistaken, for at least two reasons. First, recognisably colonial or 'neo-colonial' policies and practices are still in place throughout many parts of the world, such that the suggestion that we have left them behind is misleading. Second, even during the earliest stages of colonialism, there was criticism of and resistance to them such that postcolonialism was born, as it were, with colonialism. 'Modernity', writes Sandra Harding, 'has been contested and "in crisis" in the West from the moment it emerged' (Harding, 2008: 176), a sentiment echoed in the title of Bruno Latour's *We Have Never*

Been Modern (Latour 1993).[101] Feyerabend concurred: his emphases upon the false claims about the unique and superlative practical and cognitive efficacy of the Western sciences, and their alleged beneficence to global cultures are explicit challenges to a key claim of modernity—namely, that the sciences are a privileged epistemic and humanitarian resource.

What is distinctive about Feyerabend's contribution is that he provides a philosophical account that exposes the complicity of the Western sciences in this process. The sciences lend intellectual legitimacy to colonialist and neo-colonialist projects because they implicitly or explicitly assert the inferiority of 'non-scientific' indigenous beliefs and practices. Of course, such assertions reply upon historically and philosophically suspect credentials, such as the existence of a distinctive 'scientific method'. Feyerabend challenged these false credentials, and traced their practical and political implications, especially their impact upon indigenous cultures. In so doing, he anticipated the later discipline of 'postcolonial science and technology studies', a field which, to date, has offered him little credit.

Mainstream philosophy of science has also been slow to warm to Feyerabend's political concerns with the impact of scientific knowledge and practices upon indigenous cultures. This is despite the fact that at the core of these political concerns are familiar issues in the epistemology of science (see Harding 2006: Chs7-9).[102] Fortunately, aside from the growing school of postcolonial philosophies of science, more mainstream philosophers of science have begun to discuss these concerns. Dupré, for instance, concurs with Feyerabend's judgements about the role of inflated conceptions of the efficacy of the sciences in eroding global cultural diversity:

> Though most people find the self-evident superiority assumed by the Victorian Englishman somewhat ludicrous nowadays, the superiority of Western culture is by no means a view that has disappeared. The most conspicuous contemporary variant emphasises the superiority of science to the systems of belief in all non-Western cultures, and might reasonably be referred to as 'Imperialist Science'. (Dupré, 2003: 112)

6.5 Conclusions.

Feyerabend's remarks on cultural diversity reflect his commitment to the priority of ethics. He offers many arguments for the value of cultural and epistemic diversity and these are unified by a commitment to the pluralistic nature of the good life, and the corresponding insistence upon the need for a diversity of 'forms of life' to accommodate such ethical pluralism. This cultural diversity in turn requires epistemic pluralism, since the values, practices, and institutions of many cultures reflect modes of

[101] See further Harding (2008: Ch7).

[102] As one writer notes, what makes Feyerabend 'relatively unique and provocative is the way he employs his conceptual insights from the history and philosophy of science to defend a view of human freedom and self-determination' (Tibbetts, 1976: 362).

inquiry and forms of knowledge very different to those of Western modernity and the sciences. Cultural and epistemic diversity are therefore interlinked—and this is why Feyerabend identified the cognitive and cultural authority of the Western sciences as a threat to cultural diversity. Commitment to the broad naturalistic framework of Western modernity will automatically undermine the epistemic practices upon which many cultures and communities rely—and, in the next chapter, I document the various policies and practices by which this epistemological claim is practically and politically manifested. Feyerabend can therefore legitimately claim to have an 'ethical' core to his later philosophy because his guiding concern is to identify and sustain the conditions under which human wellbeing is best served.

Chapter Seven

Ch7 Feyerabend's Political Philosophy of Science

7.1 Feyerabend's early political philosophy.
7.2 Science, choice, and hegemony.
7.3 Golems and 'the monster "science"'.
7.4 Feminist and postcolonial philosophies of science.
7.5 Conclusions.

There are two senses in which Feyerabend could be described as having a 'political philosophy of science'. The first is the idea that he developed a political philosophy intended to provide some tenable system for the social control of science within democratic societies. This is the most common interpretation of Feyerabend's various remarks upon the relationship between science, politics, and liberty and it is generally agreed to be unsuccessful (see Preston, 1996: 200-209 *passim*; also Koertge 1980; Yates 1984; Siegal 1989). The second is the suggestion that Feyerabend's philosophy of science was motivated, at least in part, by overtly political concerns about the authority of the sciences in the modern world. On this reading, Feyerabend was not trying to engage with political and policymaking issues regarding the sciences *per se*, but only to emphasise the presence and salience of such issues to the philosophy of science. In case the distinction between these two senses is unclear, it could be stated in the following way: the first sense identifies Feyerabend as trying (and failing) to produce a substantive political philosophy whereas the second sees him as trying to produce a philosophy of science which is sensitive to political issues and concerns. The scholarly consensus is that Feyerabend's ventures into political philosophy, such as his 'democratic relativism', are unsuccessful and best left ignored (which is presumably why so few philosophers, of science or of politics, talk about them). However that charge only applies if one understands Feyerabend's political philosophy of science in the first sense—and that is, I will argue, mistaken, since he is best understood in the second sense as someone trying to introduce political concerns into the agenda of philosophy of science. My aim in this chapter, then, is to argue that Feyerabend's aim was to provide a philosophy of science which was sensitive to political issues. This is an important component of the later philosophy because such political concerns relate to Feyerabend's emphasis on protecting global cultural and epistemic diversity.

7.1 Feyerabend's early political philosophy.

My aim in this section is to outline Feyerabend's political philosophy, such as it is, and assess the judgement that it is unsuccessful. I present Feyerabend's account of the 'free society' and then offer four criticisms of it. Feyerabend began to venture into political philosophy in the mid-1970s. There was always an implicit political dimension to his work from an early point; this is evident in the regular appeals to John Stuart Mill's

political liberalism and the more general affirmation of the value of political freedom and self-determination. Such sentiments do not in themselves justify talk of a political philosophy in any developed sense, nor did Feyerabend at this stage make any concrete political proposals.

This began to change with the publication of *Against Method* and *Science in a Free Society*.[103] *Science in a Free Society* issues the notorious call for a separation of science and the state, mirroring the separation of church and state in the United States. Feyerabend here 'pays increasing attention to the problem of the proper role of scientific experts in a democratic society' (Koertge, 1980: 385) and this included an earnest effort to ensure individual freedom of choice in a society with certain predominant values and institutions. Feyerabend perceived the cognitive and cultural hegemony of the sciences as a threat to our political freedom, a point indicated in the title of his paper, 'How to Defend Society against Science' (Feyerabend, 1975c).[104] Into his later period, Feyerabend preserved his interest in political control of the sciences and continued to explore the claim that the hegemony of the sciences posed a threat to human freedom.

Unfortunately, scholars concur that Feyerabend's political philosophy of science is generally unsuccessful and that there is, as Oberheim puts it, 'a general consensus that Feyerabend's contributions to political philosophy were of far less worth than his contributions to epistemology and the philosophy of science' (Oberheim, 2006: 22). Certainly it needs more careful articulation, and of course it has suffered both for its perceived lack of argumentative rigour and its association with cultural relativism and various 'New Age' movements. C. Fred Alford notes that Feyerabend's solution to the problem of the public control of science—namely, 'citizens committees'—'hardly seems consonant with its magnitude', even if there is 'a certain virtue in [its] naiveté' (Alford, 1985: 206). And perhaps there is something to Joseph Agassi's (1995: 160) double-edged remark that 'Feyerabend is an ally of democracy who is more of a liability than an asset to its cause'.

Feyerabend was a liberal and championed freedom, autonomy, and choice. A central feature of his early political philosophy was the idea of a 'free society' (see Feyerabend, 1978a: 73-107 *passim*). This was presented as a society in which individuals are free to choose and control the values and institutions which structure and organise their lives.

[103] The former, of course, has the pregnant subtitle 'an anarchistic theory of knowledge' and its opening pages include long quotations from Lenin and Marx. Interestingly, Rom Harré (1977, 294) described *Against Method* as 'an attack on "Puritanism" in thought, word, and deed in favour of an ostensibly libertarian ideology'.

[104] It is interesting to compare Feyerabend's title with that of Michel Foucault's 1975-1976 Collège de France lectures, 'Society Must Be Defended' (Foucault 2003). Hattiangadi (2000) argues that the ebb in the authority of the sciences after the Second World War was partly due to Popper (1962), Feyerabend (1978a), and Foucault's (1966) 'anti-intellectualist critiques' and their 'rediscovery of the close connection between epistemology and political theory' (Hattiangadi, 2000: 126f).

Feyerabend's account of an open society is clearly influenced by Popper's own (Popper 1945).[105] A free society should therefore be structured to facilitate and maximise our capacity to choose between a wide range of options—in education, say, or medical care. There is a parallel here with Feyerabend's account of methodological and theoretical pluralism in the sciences: the guiding principle is that human beings should have recourse to a plurality of options when engaged in diverse (scientific, political) activities. Indeed, this pluralism is the dominant theme throughout Feyerabend's work—and, as Oberheim (2006) argues, constitutes 'Feyerabend's philosophy'. Alford was therefore only half-right when he remarked that 'Feyerabend's political theory is presented largely as a series of asides to his epistemological argument' (Alford, 1985: 209fn13). It is truer to say that both Feyerabend's political theory and his epistemology of science reflect a deeper commitment to pluralism.

Feyerabend initially argued that a free society would be one in which no one tradition or 'ideology' enjoyed a privileged place. Such hegemony would jeopardise the authority and integrity of other traditions and thus hamper our capacity for free choice. *Science in a Free Society* includes the proposal that 'a free society is a society in which all traditions have equal rights and equal access to the centres of power' (Feyerabend, 1978a: 106). This would entail all traditions being granted equal rights to financial and bureaucratic resources, social prestige, and state educational services. The free society should subsidise the whole range of traditions which its citizens demonstrate an interest in, such as forms of alternative medicine, or the teaching of religious doctrines in schools. Underlying Feyerabend's account of a free society is the idea that the predominance of any one tradition necessarily constitutes hegemony—and the corresponding idea that 'liberation' necessarily entails the presence of a plurality of well-developed, competing alternatives. The parallel with Feyerabend's arguments for pluralism in the sciences should be obvious here.

Feyerabend clearly thought that modern Western societies were not free societies because the sciences enjoyed a hegemonic cognitive and cultural authority which grants them special access to state resources and institutions, across education, environmental management, and healthcare (see Feyerabend, 1978a: 76-91). Feyerabend's political philosophy can be seen as an attempt to expose and counteract what he sees as the anti-democratic influence of what he liked to call 'the monster, Science' within modern Western cultures—and, by extension, upon the non-Western cultures affected by the sciences through international development programmes.[106]

Clearly there is much wrong with Feyerabend's political philosophy as outlined above. An obvious problem is the ideal of the 'free society' that he outlines, within which autonomous citizens seem to float free of the practices and institutions of their society. There are two problems with this. The first is that Feyerabend never provides a

[105] There is a surprising lack of literature on the relationship between Popper and Feyerabend's political philosophies; studies on this topic would be a fruitful future area of research.

[106] Feyerabend (2001) uses the term 'monster' to refer to science (53, 243, 264) and Xenophanes's one God (54).

persuasive argument for his presumption that an individual's capacity for unprejudiced reflection and choice is necessarily compromised by their belonging to a particular culture. There are good empirical reasons to doubt this presumption; for instance, the very fact of political dissent and diversity indicates that people are not indoctrinated by the political or cultural systems to which they belong. The second is that individuals must appeal to certain values and processes in order to enable them to articulate, critically reflect upon, and make decisions regarding the social and political form of their society. In the case of developed world societies, these enabling values and processes could include a commitment to democratic process, personal autonomy, and the value of education and 'political literacy'. Feyerabend's presumption that individuals must be isolated from any tradition is therefore false: firstly, such isolation is not possible—unless one were to remove oneself to a state of radical solitude—and, secondly, many traditions do in fact encourage and enable the sort of critical political awareness that Feyerabend wants to safeguard. Indeed, the 'free society' that Feyerabend envisions owes a lot to the Western liberal political tradition, most obviously to John Stuart Mill.

These foregoing remarks are general political points and Feyerabend runs into further difficulties when he suggests that the alleged hegemony of the sciences poses a more substantive threat to our political freedom. Feyerabend thinks that one must 'defend society against science' because the sciences have, he alleges, come to assume a degree of cultural and cognitive authority which is incompatible with the democratic principles of Western cultures. [107] The premier authority of the sciences ensures that 'equal rights of access to positions [are] defined by a special tradition—the tradition of Western Science and Rationalism' (Feyerabend 1978a: 9). As Theodore Brown (2009: 23) recently put it, the sciences enjoy both 'epistemic' and 'moral' authority insofar as within Western societies they have an unrivalled capacity 'to convince others of how the world is' and also 'how the world *should be*'. Brown's distinction between these two forms of authority helps us to understand Feyerabend's political philosophy of science: Feyerabend thinks that the moral and epistemic authority of the sciences is intimately entwined; however, he also maintains that too often people fail to appreciate that science has moral authority—and, if they do, that they are uncritical of it, because they are, by and large, persuaded of the epistemic authority of the sciences. Feyerabend's political challenges to the authority of the sciences are, therefore, attempts to explore the implications of his rejection of the various false ideas of science, such as the 'myth of method'. This much is plausible, but Feyerabend errs by presuming that free societies—in this case, Western societies—can and should be liberated from the sciences.

There are four main arguments against Feyerabend's claim that Western societies will become 'free societies' once they are 'liberated' from the hegemony of the

[107] This is a complex claim and Feyerabend does not do enough to develop it, although later writers such as Kitcher (2001), Douglas (2009), and Brown (2009) have done excellent work addressing the mass of political and policymaking issues Feyerabend raises.

sciences. The first is that the sciences are nowhere near as controlling as Feyerabend suggests: the 'monster, Science' which he suggests is running rampant throughout Western cultures is a chimera, albeit one with great rhetorical and polemical power. Although it is true that the sciences have considerable influence upon many aspects of our culture—ranging from healthcare to agriculture to cosmology—it is hardly the case that they exert the sort of 'antidemocratic' authority Feyerabend suggests. The second is that the sciences are subject to enormous moral, regulatory, and political control, whether they are state-sponsored, or commercial and independent. Scientific knowledge and practices are monitored and controlled by a whole variety of regulative mechanisms, ranging from government select committees, ethics panels, international legislation, and licensing by professional organisations. Imperfect as these may be, they do provide multiple levels of control over the sciences and they reflect a variety of moral, social, and political concerns and interests.

The third is that the sciences are a definitive and valued feature of Western cultures. The enormous presence and prestige of the sciences within modern Western societies is, as David E. Cooper (2002: 186) points out, 'not an accident' for the good reason that the sciences 'extend and lend sophistication' to prevailing beliefs about what the world is like and because they 'visibly engage with central 'projects' of modernity, such as the amelioration of life through technological intervention'. The entrenchment of the sciences within our societies is a reflection of their capacity to respond to our practical and cognitive needs in ways consonant with our guiding values and concerns. As C. Fred Alford remarks, 'were one to count all institutions in society which benefit from what Feyerabend regards as the unjustified prestige of science, the list would be virtually coextensive with the institutions of modern industrial society itself' (Alford, 1985: 206). The reason, of course, is that the scientific knowledge and products provide the material and cognitive resources which are essential to the projects of modern Western cultures. Feyerabend is therefore wrong to suppose that the special status of the sciences is a sign of totalitarian conspiracy or take-over; rather, the sciences are central features of our societies because we have chosen to pursue them and elected to make them central to our practices and policies.

The fourth, and final, objection is that the dislocation of the sciences from their privileged place within Western cultures would arguably not contribute to our freedom, but would, rather, incapacitate us. For instance, Feyerabend argued in the early 1980s that a citizen of a free society '*will use the standards of the tradition to which (s)he belongs*' (Feyerabend, 1981b: 27). However, in the case of Western societies the 'tradition' in question would of course be heavily influenced by the sciences. Feyerabend's project of freeing society from science of course rests upon the idea that the sciences are separable from the wider structures and values of Western cultures. However, to suggest that our decisions—about educational curricula, say—should be uninfluenced by the dominant scientific theories of the day is, if not impossible, then surely bizarre. Since the sciences are, by common consent, our most successful and efficacious cognitive and practical resources it would require very good reasons indeed for us not to consult them and, indeed, not to make them central in questions of politics and policy. Feyerabend seems to suggest that political deliberation and decision-making

in Western societies can be successfully decoupled from scientific knowledge; however, if this were to happen, then Feyerabend owes us an account of which epistemic authorities we should turn to in order to make our decisions. Every society and culture needs certain authorities which can provide at least a loose framework within which reflections on and judgements about the natural world can proceed. The sciences fulfil this function in modern Western societies and to make plausible the suggestion that they should not would require a far more persuasive case than Feyerabend offers.

It is worth dwelling on the fourth objection. The definition of a free society is one whose citizens are not rigidly committed to any one tradition or epistemic authority—such as the sciences. However, if Feyerabend is to be consistent in his defence of a free society then he should apply the same principle to the global indigenous cultures which his later philosophy is, I argued, committed to the defence of. Applied in practice, this would mean that Feyerabend should be committed to challenging the privileged cognitive and cultural authority of the dominant traditions evident in global cultural diversity: yet one can hardly envision Feyerabend accepting the proposal that he must therefore challenge the political and social values, moral norms, religious beliefs and institutions, sacred texts, ancestral authorities, tribal councils and other traditions which structure and organise the lives of the overwhelming majority of the world's people.

A schism thus opens in Feyerabend's political philosophy: he is very keen to displace our dominant epistemic authority—the sciences—in order to liberate us and make ours a free society, and yet he is utterly unwilling to apply the same, presumably beneficial programme to the world's indigenous peoples. Indeed, Feyerabend makes it abundantly clear that he is utterly opposed to the 'conceited assurance with which some intellectuals interfere with the lives of people' (Feyerabend, 1993: 252).[108] Preston notes that this asymmetry persists into Feyerabend's political thinking as far as *Conquest of Abundance*:

> 'Why is it only the intellectuals, specialists, experts, whose views are wrong? … Don't intellectuals comprise one of the more 'successful' (sub-) cultures ever known? Why is it that one can always disagree with the ontological views of a philosopher, or a scientist, but never with those of a layperson? Is Feyerabend's attempt at populism merely the latest form of the *trahison des clercs*: agree with the laypeople just because they are laypeople, and we (parasites?) ought not to offend them?' (Preston, 2000: 621)

Preston is right to accuse Feyerabend of nourishing an undue hostility towards intellectuals, academics, and 'Western science'. [109]The theme of anti-intellectualism

[108] This is an enduring theme throughout his works; see Feyerabend (1994a) and (1998).
[109] Preston also suggests that Feyerabend's later philosophy 'might profitably be seen as an expression of 'reactionary romanticism', the desire to return to (what he thinks of as) a prior stage of culture, a golden age in which people got on with their lives untroubled

and populism is certainly a consistent one throughout Feyerabend's career and it grew more explicit over time. Feyerabend had a temperamental preference for dramatic juxtapositions of oppressed groups on one side (indigenous peoples, say, or 'heroic scientists') and oppressive, hegemonic authorities on the other ('Western Science', for instance). Such polarisations often led to unfair demonization and uncritical praise and defence and these of course fuelled the criticisms of Feyerabend's 'relativism'.

Feyerabend's political philosophy therefore runs into difficulties. However this does not mean that his political proposals are without merit. Preston (2000: 621) is correct that it is 'not well thought out', but this of course preserves the possibility that it can be articulated in a tenable form. The core political concern is that the privileged place of the sciences within Western cultures may be a threat to human freedom. This claim, as Feyerabend presents it, is not persuasive but it has been the topic of intense concern for contemporary political philosophers of science such as Kitcher (2001; 2008; forthcoming) and Theodore Brown (2009). There is, therefore, good reason to suppose that it can be articulated in a plausible form and, if this is the case, then Feyerabend's political philosophy of science could be rehabilitated.

In the next section, then, my aim is to see what can be recovered from his ventures into political philosophy. I take a more sympathetic look at Feyerabend's political philosophy and suggest that a positive account can be given of it, one which honours his guiding concern with human freedom and the authority of the sciences, but which gives a more useful account of the relationship between the two.

7.2 Science, choice, and hegemony.

Feyerabend valued both science and human freedom. Much of his later philosophy can be understood as an oscillation between these two commitments which, as the last section demonstrated, Feyerabend thought were in conflict with one another. Too often, he seemed committed to the simplistic claim that modern Western cultures were faced with a tragic choice between either retaining their commitment to the sciences or exercising their freedom.[110] It is striking that Feyerabend was blind to the obvious fact that many Westerners in fact did and do exercise their freedom by choosing to accept

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by intellectuals and their tendency to universalize concepts and forms of thought' (Preston, 2000: 621-622). Exploring the Romantic themes in Feyerabend's thought would make for an engaging future project—certainly he shares many themes in common with 'Counter-Enlightenment' thinkers like Hamann and Herder. A useful starting point for such a study would be Berlin (1999).

[110] I mean 'tragic' here in the sense articulated by Isaiah Berlin. In his classic paper 'Two Concepts of Liberty' (Berlin 1958), Berlin argued that '[i]f … the ends of men are many, and not all of them are in principle compatible with each other, then the possibility of conflict—and of tragedy—can never wholly be eliminated from human life, either personal or social' (Berlin, 1958: 54). The idea of 'tragedy' here could perhaps be employed within contemporary debates over the tenability of scientific pluralism.

scientific knowledge and practices. Or perhaps better, Feyerabend was quite aware of the fact that science is not nearly as totalitarian as his presentation of the issues implied but continued to describe it as such because it suited his polemical tendencies (this is another instance of the 'sincerity charge' discussed in Chapter one). Many commentators and critics have noted that Feyerabend is not nearly as hostile to the sciences as many of his writings suggest and they invariably raise the question of why he chose to present it thus. Answering this question is, I suggest, the key to understanding Feyerabend's ventures into political philosophy because it should dissolve the false tension that he thinks arises between our commitments to science and human freedom.

Feyerabend emphasised the priority of humanitarian values, such as freedom and liberty. This point was emphasised in the letters to Kuhn and in the various papers which affirm the primacy of ethics: above all else, Feyerabend was committed to the principle that human beings should be free and able to exercise their freedom. This principle was often expressed as a loose cluster of values, such as 'liberty', 'freedom', and 'autonomy'. The principle of liberty maintains that human beings should be free to live as they wish, but of course also entails an accompanying emphasis on the importance of one's making sensible, informed decisions. Liberty has moral and rational conditions, a point that one can find, with variations, in the work of liberal thinkers including Locke, Mill, and Rawls (see Gaus 2010). An individual should engage in the processes of thought and reflection which ensure that their liberty is exercised sensibly and intelligently. Otherwise, people would otherwise be free to exercise their liberty in any manner of selfish, wanton, or arbitrary ways—'anything goes', indeed!

Feyerabend is certainly committed to the principle of liberty but lacks an emphasis upon the corresponding need for individuals to make informed decisions. This is evident in his presumption that one can exercise freedom independently of appeal to any particular traditions, and in his hostility towards epistemic authorities, like science or academic philosophy. This indicates a curious tension in Feyerabend's philosophy: although much of his philosophy is devoted to the claim that people should critically assess the traditions which shape one's life, he is hostile to those traditions—like science and philosophy—which enable such critical activities. As Preston remarks, had Feyerabend suspended his temperamental (and perhaps insincere) hostility towards 'intellectuals', 'he might have seen that science and 'rationalism' may be coped with and exploited in ways other than eradicating them, or confining them to ghettos' (Preston, 2000: 621-622).[111]

Feyerabend affirms our liberty but fails to acknowledge that it comes with certain conditions (and in Chapter six, I argued that he failed to notice or acknowledge this point despite his enthusiasm for Mill). Within modern Western societies, many of these

[111] Feyerabend seems to be committed to so-called 'liberal optimism', the presumption that liberal persons will make decisions that are morally and rationally respectable without any need for external supervision or assessment. This is why Feyerabend is indeed 'a naive democrat' (Freese, 1980: 412).

responsibilities will be defined by our scientific and political commitments (see Kitcher 2008). Feyerabend's proposal that citizens should be free to choose the values and institutions upon which their lives are organised fails because it would deprive us of any basis upon which to make any such decisions. It is either 'utterly trivial or false' (Preston 1996: 207). Within contemporary Western cultures, many of these values and institutions will betray a secular bias and will doubtlessly afford cognitive authority to scientific knowledge and institutions. The obvious exceptions here are the ongoing disputes between science and religion which, as Thomas Dixon argues, 'virtually always involve disagreements about the relative authority of different sources of knowledge' (Dixon, 2008: 22).[112] Either way, it is clear that political decisions require us to appeal to some values and institutions—religious, scientific, or otherwise—because without these one cannot identify and assess options, nor assign to them degrees of preference and worth.

A better proposal could be that citizens are encouraged to reflect critically upon the values and institutions that structure and organise their lives (including their political deliberations) and that adequate educational and legislative mechanisms are put in place to ensure this. Attractive as that proposal may be, it is hardly radical and is itself fraught with complex issues which Feyerabend neither raises nor addresses. What, then, can be saved from Feyerabend's political philosophy? I suggest that the answer is this: Feyerabend is less interested in telling us what 'the good life' is, or what the value of science is, or how society should be structured, and more interested in the deliberations and decisions by which people answer these questions.

Throughout his philosophy, Feyerabend does of course offer a whole host of answers to these questions, some of them good, many of them quite bad, and often he seems surprisingly reticent about them. This has lent his political discussions a frustrating character which has no doubt compounded the critical judgements made of them. However, these frustrations disappear when Feyerabend's ventures into political philosophy are interpreted as Socratic exercises. Feyerabend is not interested in providing definitive answers to the questions that he raises but, rather, in the whole process of challenging both the answers often given and the means by which they were derived. This is consonant with a long and venerable conception of philosophy as a means of challenging received wisdom, dominant views, and the intellectual and political status quo. It also locates Feyerabend's political philosophy of science within his broader commitment to progress through criticism (see Oberheim, 2006: 215-220).

Feyerabend is not primarily interested in the question of the value of the sciences in the modern world, nor in the problem of the political control of science. These questions and problems all have a value only insofar as they reflect features of modern life which have a profound capacity to affect human wellbeing. Feyerabend therefore engages with them because they resonate with his humanitarian values and with his commitment to the primacy of ethics. Feyerabend himself makes the Socratic functions of his political philosophy clear throughout his writings; indeed, this is arguably the function of his entire philosophy. Consider *Against Method*, which opens with an

[112] Kitcher (2008) discusses this issue at length.

emphasis upon 'the need for a far more complex account of scientific knowledge than that which had emerged from positivism and similar philosophies' (Feyerabend, 1993: x). Feyerabend emphasises the complexity of the sciences and affirms the need for histories, philosophies, and sociologies of science to document and articulate it. There is no hostility to these disciplines here, and in fact they are essential in contributing to a long-term concern of Feyerabend's, namely, challenging those groups and institutions who use 'a frozen image of science to terrorise people unfamiliar with its practice' (Feyerabend, 1993: 3). It is this false image—which Feyerabend calls the 'monster "science"'—rather than the sciences *per se*, which 'contains a totalitarian element' and it includes the claims that science is a 'universally accepted [and] single uniform entity' whose successes are attributable to its special methodological and rational credentials (Feyerabend, 2001: 243, 264). Using the resources of the history, philosophy, and sociology of science one can provide a more accurate image of the sciences which will have implications for our judgements about its value and efficacy. 'Consolations for the Specialist' makes similar points, as it opens with the question:

> '[Is] the pursuit of science worthwhile? Is the presence of such a discipline, the fact that we have to live with it, study it, understand it, beneficial to us, or it is perhaps liable to corrupt our understanding and diminish our pleasure?' (Feyerabend, 1970d/1981b: 141)

The purpose of these questions is neither to undermine the authority of the sciences, nor to propose that they be dismantled and abandoned. This becomes clear enough a few sentences later when Feyerabend complains that:

> 'It is very difficult nowadays to approach such questions in the right spirit. What is worthwhile and what is not are to such a large extent determined by the existing institutions and forms of life that we hardly ever arrive at a proper evaluation of these institutions themselves' (Feyerabend, 1970d/1981b: 142-143)

Feyerabend calls for us to challenge the 'aura of excellence' which he thinks 'checks any inquiry' into the beneficence of the sciences. Although he suspects that the reassessments he calls for will dissolve some of the esteem which the sciences enjoy Feyerabend certainly does not think that the sciences will lose all credibility, nor that they will or should be abandoned. I suggest that the purpose of Feyerabend's philosophy is to encourage and enable us to critically assess the political authority of the sciences. This reflects his criticisms of false images of the sciences, such as the presumption of the omnicompetence of science, and those political and cultural groups which exploit them in order to remove science 'from the domain of critical discussion' (Feyerabend, 1970d/1981b:142-143). A reassessment of the nature and excellence of the sciences should provide us with a more truthful image of the sciences which can then be used as a proper basis for judging the value and efficacy of scientific knowledge and practices within modern Western societies. This is not 'anti-science' but, on the contrary, is

powerfully pro-scientific insofar as the purpose of such a reassessment is to provide us with a truthful image of the sciences which can then enable us to fully realise their humanitarian (and epistemic) potential.

7.3 Golems and 'the monster "science"'.

Feyerabend's calls for a reassessment of the excellence of the sciences have found wide resonance within the philosophy of science. Dupré (1993) is one such example, and it is worth briefly discussing another, namely Harry Collins and Trevor Pinch's (1998) famous metaphor of science as a 'golem', the powerful but clumsy creature of Jewish mythology. Science is a 'golem' because it is '[n]either all good or bad' but something 'powerful ... clumsy and dangerous', especially when allowed to work '[w]ithout control'—and, since science the golem is a 'creature of our art and our craft', it is 'not to be blamed for mistakes; they are our mistakes' (Collins and Pinch, 1998: 1-2 *passim*). The golem metaphor is apt for Feyerabend because it reflects his point that the sciences can best realise their beneficent potential only if those who perform and control the sciences have a proper and accurate understanding of its nature and possibilities.

The paper 'How to Defend Society against Science' (Feyerabend 1975c) reflects this very concern. Feyerabend argued that there is 'nothing inherent in science or in any other ideology that makes it essentially liberating'—which is true enough—and that ensuring the emancipatory and beneficent possibilities of science requires us to understand and use it properly (Feyerabend, 1999a: 182). This is a key function of the philosophy of science, and one which Feyerabend strongly felt it had failed in. Science can therefore contribute to human wellbeing but only insofar as those affected by it understand its limits and possibilities. Its 'humane' potential is contingent, not inevitable. Recall that Feyerabend's criticisms of logical positivism and Kuhn's model of science reflected his humanitarian concern that they promoted misleading images of the structure of science; they fail to help us understand and control the golem. Feyerabend's philosophy of science is an attempt to help us challenge false and misleading images of the sciences by affirming its pluralistic, disunified, and value-laden character. An urgent political function for philosophers of science is therefore to contribute to a comprehensive reassessment of science's limits and to help assert control over them.

David J. Stump (2002) recently affirmed Feyerabend's remarks on the political possibilities of the philosophy of science. Stump notes that since at least the early nineteenth century philosophers of science invariably had a much wider agenda informing their philosophical reflections on scientific thought and practice. The reason was that these politically-concerned philosophers of science appreciated that there was 'no guarantee that adopting a scientific world conception will lead to political progress, unless these politically progressive values can somehow be built into this conception' (Stump, 2002: 156). The ideal of 'value-free science' would therefore be seen as either incomprehensible or irresponsible, on the grounds that it indicates an abrogation of a

key political goal of philosophy of science—namely, to ensure the beneficence of the sciences.[113] In a rousing remark, Stump writes that:

> '[B]y taking science as the object of philosophical reflection, philosophers of science are engaging an institution that plays a major role in contemporary life and are therefore dealing with issues that are often directly related to issues of public concern. Philosophers of science therefore retain their potential to affect public discourse by performing their role as interpreters of science and judges of scientific practice.' (Stump, 2002: 157)

Stump's remark here indicates the tension in Feyerabend's own political thought. Feyerabend by his own account affirms that philosophers of science should engage with contemporary political issues. This is why he celebrates politically engaged philosopher-scientists like Aristotle, Mach, and Bohr, and why he castigates politically-indifferent philosophers for their 'abstract' and 'detached' approach to social and political issues in the philosophy of science. Feyerabend would therefore applaud Stump's description of the philosophy of science as 'engaging an institution that plays a major role in contemporary life'—and yet at the same time he would surely blanch at the obvious consequence that philosophers of science can and should 'affect public discourse'. Clearly, Feyerabend cannot have it both ways, and, if pushed, he should concede that philosophers of science can contribute usefully to public discourse about the sciences.

Why did Feyerabend fail to follow through his conviction about the political functions of the philosophy of science? I suspect that the reason lies with Feyerabend's temperamental resistance to being perceived as an authority. Throughout much of his work one finds him denying his credentials as a professional philosopher and insisting—only half-sincerely—that he just 'told stories' and had 'opinions ... not a philosophy' (Feyerabend, 2000a: 162).[114] Such remarks may seem insincere because Feyerabend did indeed have many developed views on the sciences which he thought should inform our understanding of the value of the sciences in the modern world. (Otherwise it is hard to make sense of his fulminations against misleading images of the sciences and the environmental, social, and intellectual destruction that they have generated, or against the plight of global indigenous peoples, or against the wilful disengagement of philosophers of science from social and political issues.) However, the Socratic interpretation of Feyerabend's political philosophy of science should assuage the charge of insincerity. Feyerabend does want philosophers of science to respond to what he sees as urgent social and political issues and he saw himself as

[113] See Douglas (2009) for a sustained historical and philosophical discussion of the emergence of the 'value-free ideal' in twentieth century philosophy of science.

[114] The title of one of Feyerabend's later autobiographical essays is 'Not a Philosopher' (Feyerabend 1994c). I discuss these remarks, and others like them, in Kidd (forthcoming a), where I trace them to the influence of Kierkegaard upon Feyerabend.

trying to encourage them to do so. I suggest that his apparent failure to pursue more work in this area was due to his own temperamental aversion to becoming an authority (or, at the least, of being perceived as one).[115] Fortunately, of course, other philosophers of science have been far more willing to apply their philosophical resources to addressing the sort of political issues arising from reflection on scientific knowledge, practices, and institutions, including Dupré, Kitcher, Douglas, feminist philosophers of science such as Longino and Keller, and the whole school of 'postcolonial science and technology studies', especially as represented by Sandra Harding.

In the final section, my aim is to demonstrate how Feyerabend's political concerns can and have been realised within contemporary feminist and postcolonial philosophies of science. Hopefully this will demonstrate the viability of his conception of a politically-engaged philosophy of science and locate him within an area of contemporary philosophy of science which has so far neglected his work.

7.4 Feminist and postcolonial philosophies of science.

There are two important exceptions to the neglect of social and political issues within the philosophy of science, namely feminist and postcolonial philosophies of science. An obvious and important reason for this is that both women and non-Western peoples have tended to be excluded from participation in the sciences and have also failed to benefit from the products of scientific knowledge and practices. Sandra Harding (forthcoming) emphasises that the agendas of feminist and postcolonial philosophies of science are complementary to one another because their respective constituencies overlap. Women and non-Western peoples are disenfranchised by Western economic and political projects, including areas, like the sciences, structured by them (Harding 2008, Part II). Women and non-Western peoples are generally absent from the practices, policies, and philosophies of the modern Western sciences at every level. Despite some positive action to redress this imbalance, the complaints stand, especially in the case of non-Western peoples.

There are three features of feminist and postcolonial philosophies of science to which I wish to draw attention. My account of these features will be deliberately schematic since my aim is simply to indicate that Feyerabend's later philosophy is consonant with feminist and postcolonial philosophies of science; the references should serve as a basis for substantive studies in the future. First, both feminist and postcolonial philosophies of science have therefore responded to the cognitive and cultural hegemony of the Western sciences and the deleterious environmental, social, and political policies it has sustained. Londa Scheibinger writes that feminist philosophies of science began with a suspicion of the ideal of science as a '"neutral"

[115] At least Feyerabend did show signs of changing his attitudes; in one of his last essays, one finds him arguing that philosophy must become a 'moral and political force that must be taken into account' (Feyerabend 1994a). This is a radical change from his earlier declarations that philosophy was 'boring' and that academia was filled with 'illiterates'! See Feyerabend (1978a, Part III).

and privileged vantage point, above the rough and tumble of political life' (Schiebinger, 2001: 107). Feyerabend challenged this same presumption. Feminist and postcolonial philosophers of science are suspicious of claims about the value-neutrality of the sciences and they look to those individuals, groups, and communities on their periphery to substantiate their concerns, especially women and non-Western peoples. This does not constitute a denial of the claim that science enjoys such honorifics; instead, it reflects the worry that the conceptions of rationality and objectivity which science and the philosophy of science has tended to employ has contained androcentric and other biases (see Keller and Longino 1996). There is therefore an avowedly political as well as philosophical motivation to these critical philosophies of science, which accordingly aspires to use the resources of the history and philosophy of science to respond to political issues, such as the marginalisation of women and non-Western peoples.

Second, both share a common conception of the nature of the Western sciences, namely, as pluralistic, value-laden and culturally and historically situated or 'local'. The cognitive and practical successes of the Western sciences reflect the particularities of the values and interests of the European cultures which generated them and so cannot pretend to enjoy trans-cultural validity. The Western sciences have also profited from colonial and neo-colonial exploitation of women and non-Western peoples, cultures, and environments—a point well documented by recent literature in the history of colonial science (see Delbourgo and Dew 2008, Jacob 2008, and Schiebinger and Swan 2007).

Third, both feminist and postcolonial philosophies of science emphasise the need for critical metaphilosophical reflection on the aims and concerns of the philosophy of science. Although neither rejects the need for abstract studies of, say, epistemological and metaphysical issues—like causation, laws, or theory choice—they maintain that there is an important place for practical and political concerns. Indeed, the 'philosophical' and 'political' aspects of the philosophy of science arguably cannot be separated because our understanding of the nature and structure of the sciences necessarily affects our ideas about how the sciences are practiced and organised.[116] I suggest that feminist and postcolonial philosophies of science can therefore be understood, if only for my purposes here, as reflecting a broad set of philosophical and political concerns about the nature of the Western sciences and their impact upon marginalised groups, primarily women and non-Western peoples.

Can Feyerabend be located relative to feminist and postcolonial philosophies of science? I suggest that he can, since his later philosophy shares all of the features of such philosophies. From the early 1960s, Feyerabend argued that both science and the philosophy of science should be guided by a cluster of humanitarian values which promoted 'human wellbeing'. During this period, much of Feyerabend's work was devoted to emphasising the pluralistic nature of the sciences and with tracing out the implications of this for our understanding of the nature of science. These concerns came

[116] Feminist philosophers of science in particular have defended this point at length using examples from the biomedical sciences. See the essays in Keller and Longino (1996).

to fruition in *Against Method*, where Feyerabend rejected methodological monism—the ideal of a singular 'scientific method' which confers special epistemic prestige on the sciences—and he argued that this should prompt us to reassess the special cognitive and cultural authority which the sciences enjoy in modern Western cultures. Throughout the late 1970s and into the 1980s, one can see growing concern with the destructive effects of the Western sciences upon non-Western environments and cultures. Such 'imperialist scientism' arose because of mistakenly bloated conceptions of the cognitive and practical efficacy of the sciences which encourage a general hostility towards 'non-scientific' knowledge and practices. Chapters three and four addressed these features of Feyerabend's later work.

Feyerabend described the motivation for his later work as 'humanitarian, not intellectual' since he was responding to the fact that many non-Western cultures had 'developed ways of surviving in partly dangerous, partly agreeable surroundings' which had been 'destroyed' by Western policies and practices (Feyerabend, 1993: 3). The antidote to such deleterious practices was a reaffirmation of the value of global cultural and epistemic diversity, which respected both the diversity of values and 'forms of life' developed by diverse human populations and the complexity of the natural world itself. The title of Feyerabend's final book, *Conquest of Abundance*, refers to the dissolution of global cultural and epistemic diversity which he identifies as resulting from inflated estimations of superiority of Western scientific and cultural practices and institutions.

The later Feyerabend therefore shares many of the political and philosophical concerns of feminist and postcolonial philosophies of science. From *Against Method* onwards, Feyerabend began to appreciate the political implications which followed from his criticisms of false images of science. One example of particular interest to him was role of the presumption of the omnicompetence of science in legitimating the disenfranchisement of indigenous peoples (one of the earliest explicit statements of this is Feyerabend, 1978a: 135-138). In this sense, Feyerabend's later work is more closely allied to postcolonial philosophies of science; it is therefore regrettable that his work does not enjoy more of a presence within contemporary literature on postcolonial science and technology studies. PSTS scholars invariably group Feyerabend amongst a broad group of 'post-positivist' philosophers of science, such as Kuhn, Lakatos, Shapere, and Toulmin.[117] This is understandable given Feyerabend's position within the history of the philosophy of science but also misleading, because into his later period Feyerabend's work began to broach a much wider set of concerns than 'mainstream' philosophy of science tolerated and continues to tolerate. Most pertinently to my concerns here, the later Feyerabend indicated an explicit concern with moral and political issues concerning the cognitive and cultural authority of the Western sciences. This is an important example of one way in which Feyerabend's work diverged from those of his contemporaries, and indeed most contemporary postcolonial philosophers of science emphasise the lack of mainstream presence their sub-discipline currently suffers.

[117] See, for instance, Ashman and Baringer (2000: 126); Harding (1998: 216n23 and 218n48) and (2006: 135) and Spivak, (1999: 365).

Both in the late-1970s, when Feyerabend first broached his wider concerns, and today, political and philosophical concern with those groups and communities who are being minoritised by the scientific and cultural agencies of Western modernity is still far from being a core concern of the philosophy of science. The recent emergence of postcolonial science and technology studies is a welcome counterexample to such neglect as are the feminist philosophies of science which preceded it; however, there is a good case to be made for the claim that Feyerabend's later work represents an early and important contribution to postcolonial philosophies of science, and one which can indeed inform ongoing debates about the value and beneficence of the Western sciences.

7.5 Conclusions.

Feyerabend had political as well as philosophical interest in the sciences. A consistent theme of his work throughout both its 'early' and 'later' periods was the claim that the sciences could only fulfil their beneficent and liberating potential if they were properly understood. This is consonant with Feyerabend's insistence upon the primacy of the ethical and his criticisms of philosophies of science which promote misleading images of the sciences; or of 'the monster "science"'.[118] Feyerabend's ventures into political philosophy were intended to contribute to his project of ensuring the beneficence of science by introducing measures for the public control of science. Unfortunately, they failed to do so, mainly because of their lack of sophistication and the naive form of liberal democracy which Feyerabend relied upon. I then suggested that Feyerabend's political concerns can be preserved if one interprets his later work as committed to the Socratic project of challenging us to account for the value and nature of the sciences.

Feyerabend does not ask us to abandon science, but only to be able to account for what it is and why it matters. Indeed, these are the two questions that open his paper 'On the Critique of Scientific Reason': 'what is science' and 'what's so great about science?' The former question has of course exercised philosophers of science for a long time, but the latter question has arguably been less well-served, except for the notable exception of feminist and postcolonial philosophers of science who are sensitive to the sorts of moral and political concerns which motivated Feyerabend. These two questions are political insofar as they relate to the authority of the sciences in modern societies and philosophical because they necessarily invoke epistemological

[118] Feyerabend tended to criticise philosophers of science for promoting damaging myths about the sciences, but one should point out, as Robert Nola (2001: 814, my emphasis) does, that his challenges were directed at 'a number of the prevailing images of science advocated … by *scientists and* philosophers'. And of course, many scientists themselves promote philosophical models of the sciences in popular science writings. Popular scientific literature and scientific textbooks often promote ridiculously out-dated images of the sciences (for instance, much of it fails to recognise that falsificationism has been shown by philosophers of science to be overly simplistic. For a critical discussion, see Rowbottom and Aiston (2006).

issues about the structure and efficacy of scientific knowledge and practices. And true to his commitment to our liberty, Feyerabend does not want to answer these questions for us, although of course he certainly has opinions on both of them. Instead, what the later Feyerabend wanted was to ensure that the citizens of societies within which the sciences play a role have a proper and informed view on the what the sciences are and why they are valuable, that is, that they can answer his two questions: 'what is science' and 'what's so great about science?' The aim of Feyerabend's political philosophy of science is not to answer these questions but to introduce and affirm their importance and to provide us with the resources and the motivation to address them.

With this interpretation in mind, I conclude that Feyerabend's political philosophy is not a failure, since it was not intended to provide applicable policy proposals, but that is successful insofar as it challenges us to take seriously the very question of the value of science—a question which is as important as it is neglected. Therefore when Feyerabend (1976: 228) remarks that 'science as we know it today is not inescapable, and ... we can construct a world in which it plays no role whatever', he is not proposing the abandonment of science but simply asking us to account for its presence and prestige within our society. As Alford neatly puts it, 'Feyerabend's substantive argument is that a pluralistic way of life is conducive to self-development'; therefore, we 'should not … overlook the fact that he is indeed concerned with the good life' (Alford, 1985: 208-209).

The last three Chapters, numbers five to seven, have detailed Feyerabend's discussion of the value of cultural diversity. This is, of course, connected with his defence of epistemic pluralism. In the next two Chapters, therefore, I consider the arguments for epistemic pluralism that Feyerabend provided in his final works, especially *Conquest of Abundance*.

Chapter Eight

Ch8 The Later Feyerabend's Metaphysics and Epistemology

8.1 The aims of the later Feyerabend's metaphysics.
8.2 A reconstruction of the later Feyerabend's metaphysics.
8.3 Criticisms and problems.
8.4 Incommensurability and perspectivism.
8.5 Conclusions.

This Chapter describes the metaphysics developed in the later work of Paul Feyerabend. I argue that his later metaphysics is best understood as an attempt to provide foundations for a radical epistemic pluralism. Section one describes the aims and motivations informing Feyerabend's decision to develop a metaphysics because these are essential to helping us understand it. Section two provides a reconstruction of the metaphysics from Feyerabend's own scattered (and not always consistent) accounts. Section three identifies some of the problems of the later metaphysics and rebuts Preston's charge that it is a form of social constructionism. In section four, I suggest that the most sophisticated interpretation of Feyerabend's later metaphysics is as a form of pluralistic perspectival realism. Here I draw upon the recent work of Giere (2006a; 2006b), and Brown's (2009) application of it to Feyerabend. Finally in section five, I offer some conclusions and point the way to Chapter nine.

8.1 The aims of the later Feyerabend's metaphysics.

The aim of the later Feyerabend's metaphysics was to provide the foundations for a radical epistemic pluralism. Consonant with his practical, historical, and philosophical arguments for epistemic pluralism, Feyerabend felt the need to provide a metaphysics as well. Many of his very late writings, were devoted to developing this metaphysics. The mature expression of Feyerabend's metaphysics is, *Conquest of Abundance*. Throughout that book, one finds emphases upon the 'abundance' and 'richness of Being' and long discussions of human epistemic efforts to expose and explore it. A key focus of that book is what Feyerabend calls the 'problem of reality', namely, how are we to make sense of the fact that there are multiple, mutually-incompatible descriptions of the world which, despite their incompatibilities, enjoy cognitive and practical efficacy? Such 'problems of reality' relate to Feyerabend's defence of epistemic pluralism. Many scientists and philosophers sympathetic to epistemic monism see such pluralism as problematic. Often such monism is cast in ontological terms; for instance by appeal to the argument that if reality has an objectively real structure then it should

admit of only one true description.[119] Kellert, Longino, and Waters (2006b, x) recently characterised the scientific monism that Feyerabend opposes:

> 1. The ultimate aim of science is to establish a single, complete, and comprehensive account of the natural world based on a single set of fundamental principles
> 2. The nature of the world is such that it can, at least in principle, be completely described or explained by such an account

Feyerabend rejected both of these claims, which help us to clarify the aims informing his metaphysics. Clearly, Feyerabend wants to deny that scientific monism should be a plausible aim of science. This does not mean that we could not find ourselves in a situation in which some one theory, or set of theories, predominated; indeed, that claim is partly what the 'conquest of abundance' refers to. Feyerabend certainly thinks that it is an active possibility that some one scientific theory could become established; however, this fact would not entail that that theory was a 'single, complete, and comprehensive account of the natural world'. The reason is that reality is not susceptible to successful description by any single theory or set of theories. Although reality has an objective structure and properties, these cannot be captured by any single theory, however well-articulated it may be. This is because our epistemic activities reflect particular explanatory goals, theoretical commitments, social and material conditions, and so on. These are necessarily and irreducibly pluralistic because the adoption of certain explanatory goals, for instance, precludes the adoption of others. Therefore the plurality of epistemic activities is necessarily diverse and they can be interpreted as mutually incompatible insofar as they cannot be unified or harmonised with one another. Reality may be unitary, but our descriptions of it cannot be, since they reflect a plurality of incompatible explanatory goals and other contingent factors. Feyerabend emphasises that the 'abundance' of reality arises from the interaction of human epistemic activities with reality itself.[120] Since many of these epistemic activities may be mutually incompatible, owing to the diversity of goals and conditions informing them, the conceptions of reality they generate may be likewise incompatible.

Feyerabend's later metaphysics was an attempt to explain how metaphysical realism can be reconciled with radical epistemic pluralism. The historical record indicates the success of a wide range of epistemic activities, many of which are mutually incompatible. This is a metaphysical problem because many of these epistemic activities invoke ontological commitments—that is, descriptions of reality—which are incompatible with one another. Therefore, the success of our many epistemic activities

[119] The 'metaphysical realism' of Hilary Putnam is perhaps the most famous statement of this position.

[120] Jonathan Lowe suggests to me that our epistemic activities simply *are* a part of reality, albeit a small one. Therefore, the distinction between epistemic activities and reality is a spurious one, which Lowe suggests indicates the influence of Neo-Kantianism upon twentieth century philosophy of science.

generates incompatible conceptions of reality which, a monist supposes, cannot all be correct descriptions of reality itself. The 'problems of reality' that Feyerabend addresses in his later philosophy reflect the puzzle of reconciling epistemic pluralism and some workable form of metaphysical realism.

Feyerabend began to develop a metaphysics only at the very end of his career. There is little certainly little explicit metaphysical theorising in his earlier work, even if there are many discussions of the ontological implications of scientific theories. Feyerabend was clearly engaging with metaphysical issues throughout his career and yet never advanced anything like a metaphysical system of his own until the late 1980s. The first sign of this is the paper 'Realism and the Historicity of Knowledge' (Feyerabend 1989) which opens with a good statement of Feyerabend's metaphysical interests: namely, how can knowledge which is generated through historically contingent epistemic activities be understood to describe a mind-independent reality? Feyerabend began with the fact that our epistemic activities were the results of historically and socially contingent developments. This fact implied that if those historical and social conditions had been otherwise, then our current set of epistemic activities could have been radically different. And if this is the case, then our very conception of reality is itself potentially contingent, since the contingencies of history could have endowed us with alternative epistemic activities which would have generated conceptions of reality which may be radically divergent from those we currently enjoy.[121]

This aligns Feyerabend with the contemporary 'contingentism-inevitabilism' debate within history and philosophy of science. The historical contingency of the sciences is a current topic of debate for contemporary historians and philosophers of science. The discussions so far have focused on the question of whether our modern sciences were 'inevitable' or 'contingent'.[122] Howard Sankey outlines the two positions: '[t]he inevitabilist holds that science, properly conducted, will tend to converge on a single unified theory of the world' whilst the contingentist 'holds that science, properly conducted, might well have led to a completely different theory of the world from that of contemporary science' (2008: 259). Feyerabend was well aware of the contingentism debate. In 'Realism and the Historicity of Knowledge' he cites Pickering's *Constructing*

[121] As a caveat, whileour epistemic activities and the conceptions of reality they generate may be contingent, reality itself, of course, is not. I discuss this issue at length in section 8.3. Feyerabend's claims here were arguably undermined by Davidson (1974). Davidson argues that the 'retention' of certain concepts or vocabularies across different theories and languages 'in itself provides no basis for judging the new scheme to be the same as, or different from, the old' (Davidson, 1974: 10-11). We should, Davidson urges, abandon the 'dualism of scheme and world', and he goes on to argue that 'we do not give up the world, but re-establish unmediated touch with the familiar objects whose antics make our sentences and opinions true or false' (Davidson, 1974: 20). Interestingly, Davidson also cites Feyerabend (1962) as providing a 'formula for generating distinct conceptual schemes' (Davidson, 1974: 9).

[122] Both of these terms were introduced by Hacking (1999). An important early work in the contingentism debate is Pickering (1984).

Quarks (Pickering 1984) and Galison's *How Experiments End* (Galison 1987), two influential early works in the contingentism debate (Feyerabend 1989; 2001: 132fn4). In that paper he emphasises the role played by compromises, financial and institutional mechanisms, political and professional manoeuvring and competing theoretical and philosophical commitments in the formation of scientific knowledge. Such remarks are consonant with Feyerabend's earlier arguments, for instance in *Against Method*, that Galileo and Newton's scientific success relied upon rhetoric, political machinations, and so on.

Feyerabend suggested that since scientific knowledge is so affected by contingent material, social, and intellectual factors, one must critically reassess what he calls the 'separability assumption'. The separability assumption maintains that: 'what *has been found* in this idiosyncratic and culture-dependent way (and is therefore formulated and explained in idiosyncratic and culture-dependent terms) *exists* independently of the circumstances of its discovery, in other words, we can cut the way from the result without losing the result' (2001, 133). Feyerabend rejects the separability assumption: our knowledge of the world cannot be detached from the modes of inquiry and forms of knowledge employed to generate it. Our knowledge of the world therefore relies upon a careful interaction of human epistemic activities on the one hand and reality on the other. In the following section I provide a developed account of the metaphysics and epistemology that Feyerabend develops to account for this interactive model of human knowledge.

8.2 A reconstruction of the later Feyerabend's metaphysics.

The core component of Feyerabend's later metaphysics is 'Being'. 'Being' is his term for reality, and he often used it interchangeably with related terms such as 'ultimate reality', 'basic reality', 'Nature', and with superlatives such as 'Majestic Being'.[123] Being refers to objective reality, the world as it exists independently of human concepts and theories. Feyerabend emphasises the 'ineffability' of Being. One cannot have positive knowledge of what Being is like in itself, because our knowledge of it relies upon our imposition of concepts and theories and our engaging in certain epistemic activities.[124] This reflects the neo-Kantian strain in Feyerabend's philosophical thought. Oberheim (2006: 74 *passim*) argues that Feyerabend had a longstanding commitment to the Kantian idea that concepts organise and co-constitute our experiences; however, Feyerabend rejected the ahistorical nature of Kant's account and instead embraced the position which Lipton (2001) described as 'Kant-on-wheels'. The interaction of our

[123] For examples, see Feyerabend (2001: 196, 214-215, 238-239, 240).

[124] It is worth restating Lowe's objection (fn119) that Feyerabend is attempting to maintain a untenable distinction between our epistemic activities and reality. As Lowe (per. comm.) puts it, Feyerabend is 'happy to talk in detail about … our epistemic activities, which are themselves just parts of 'reality' if they are anything at all.' Therefore the claim that we can have no 'positive knowledge' of Being is incoherent. This criticism is discussed at length in Chapter nine.

concepts with reality generates experience, but since our concepts can and do change over time, so too do our experiences. Therefore our knowledge is not of how the world is 'in itself', but how the world discloses itself according to the concepts and theories that we happen to employ.[125]

Feyerabend emphasises that our experiences are shaped by a wide variety of factors. These include the concepts and theories that we employ, but also our perceptual and cognitive capacities, language, moods, social and cultural institutions and norms, and our wider philosophical or religious commitments. These factors all shape and delimit our experience of the world. However, *pace* Kant, these conditioning factors are not fixed; our biological capacities change over our lifetimes, as does language, social structures, and so on. Feyerabend suggests that these contingent and variable conditions collectively constitute certain 'approaches' towards Being which is then disclosed in the terms set by those conditions. The 'fit' between Being and our approaches is often imperfect, since our concepts and other conditions of experiences do not necessarily correspond to actual structures or properties of Being itself. This is why Feyerabend emphasised the 'ambiguity' of our experience and, therefore, of our knowledge. The 'ambiguity' arises from the contingency and variability of our 'approaches', on the one hand, and the imperfect fit between those approaches and Being on the other. However, the fit is often more than adequate for coherent and meaningful experiences to occur, even if confusions and inconsistencies cannot be wholly insured against or avoided.

The successful interaction of our approaches with Being generates 'manifest realities'. A manifest reality is a sustained, quasi-stable mode of experiencing Being according to the particular conceptual, social, and other conditions that constitute a certain 'form of life'. Feyerabend deliberately introduces an anthropological component into his account. The conditions of experience are of course historically variable, but they are also culturally diverse. Other cultures are likely to invoke conceptual, social, and linguistic conditions which diverge from ours and so can generate novel approaches to Being. Manifest realities are therefore historically as well as culturally variable and this is one reason why Feyerabend thinks that cultural diversity has, at least in principle, epistemic value. The historical and anthropological record indicates that human beings have conceived of and lived within the world in a startling diversity of ways. Therefore it is a sensible pragmatic policy to pluralise the 'approaches' we make to Being in an attempt to maximise our epistemic engagement with it. Feyerabend's later metaphysics continues the commitment to the principles of proliferation and pluralism that animated his earlier philosophy.

The interaction between our epistemic activities and Being generates what Feyerabend calls 'resistance'. Being 'responds' to the various approaches made by human inquirers, 'yielding' and 'resisting' in different measure. The nature of this resistance varies according to the epistemic activities in question since the standards for

[125] Oberheim (2006: 75) stresses that this nominalism remained constant throughout Feyerabend's philosophical development: it is 'not only a fundamental aspect of his early philosophy of science. It also underwrites one of his last major works, *Conquest of Abundance*'.

judging it are, to borrow Bernard Williams' term, 'internal to practice'. Certain epistemic activities find no purchase upon Being and falter, whereas others can be stabilised but only to a certain degree, whilst others still are immensely successful. The differing degrees of success of our epistemic activities are explained by their capacity to engage with certain aspects of Being. Feyerabend sometimes uses an activist rhetoric which describes Being as 'responding to' our epistemic activities; however this is surely misleading, since the differing degrees of success accompanying our epistemic activities can be explained without any need for Being to 'respond' or 'react' to them. A particular epistemic activity could meet with great resistance because its component concepts are particularly ill-suited to representing the aspects of the world that it is directed against. Another epistemic activity could be successful because the aspects of the world it is intended to represent are more stable than other phenomena—planetary orbits, for instance. Being is passive in all of these cases, and the variation arises simply from the discordance between naturally-variable aspects of the world, on the one hand, and the mutable nature of our epistemic activities, on the other.[126]

The resistance generated by the interaction of epistemic activities and Being imposes limits upon the range of manifest realities that one can generate. Feyerabend emphasises that Being is not limitlessly malleable. Since it 'resists' our epistemic activities, to greater or lesser extents, it cannot be 'something formless' but, instead, something which 'by its resistance reveals its properties and laws' (Feyerabend, 2001, 238). Being has some structure and properties and is 'malleable but not entirely yielding' and therefore 'more pliable than is commonly assumed' (Feyerabend, 2010, 234; 2001, 145). However, since Being '*offers resistance*', it sometimes happens that certain approaches 'simply collapse', or, perhaps, they meet with only limited 'response', 'linger for a while … and then disappear' (Feyerabend, 2001, 145, 215). The fact of the variable resistance of Being preserves a commitment to metaphysical realism. Being has some objective structure and properties, as evidenced by the fact of its resistance to certain epistemic activities. However even though Being is far more malleable than is commonly supposed—by scientific monists, for instance—it is not able to sustain any and all epistemic activities. Feyerabend stresses that the question of the receptivity of Being to epistemic pluralism has not yet been established and that we must pursue a vigorous programme of proliferation in order to determine this.

The interaction of epistemic activities with Being generates manifest realities. Since our epistemic activities can be modified, through innovation or changes in the conditions underlying them, our manifest realities are similarly mutable. The instability and variability of our epistemic activities and manifest realities can be extended to encompass our explanatory values, languages, social conditions, and so on. This is why Feyerabend emphasised that social and cultural developments could prompt major epistemological changes, such as the emergence of Greek philosophy during the Archaic period or the 'scientific revolution' of early modern Europe. These were both episodes in which changing social and intellectual conditions resulted in new conceptions of reality and associated values, practices, and institutions. Because social

[126] Pickering (1995) refers to this process as 'interactive stabilisation'.

and cultural factors can prompt major epistemological changes, they can also incite fundamental revisions in our conception of reality; for instance, Feyerabend argued that the emergence of the philosophical cosmologies of the Presocratics was intended to help introduce a new conception of reality to challenge traditional Greek religion. This is another example of Feyerabend's connection of abstract epistemological and metaphysical issues with concrete social and political concerns.

Feyerabend's later metaphysics can now be reconstructed. Being can sustain a plurality of epistemic activities. The successful and stabilised interaction of our epistemic activities with Being generates quasi-stable manifest realities. These can be modified in response to changing social and intellectual conditions and so our manifest realities are directly related to human explanatory interests. The interaction of epistemic activities with Being generates 'resistance' because of the imperfect fit between the commitments which constitute those activities and Being itself. Feyerabend remarked that 'there is no way of finding out the limit to which the world permits relativism because *Being itself cannot* be known' (quoted in Ben-Israel, 2001: 98) and that the nature of its 'resistance' cannot be known because the 'conditions of its acting' remain 'shrouded in darkness' (Feyerabend, 2001: 213). Some epistemic activities generate very little resistance, whilst others generate more, and this variable resistance reflects the objective structure and properties of Being.

Feyerabend emphasises, however, that Being itself cannot be known. The structure or nature of Being cannot be directly known to us because our knowledge of it is always mediated by the particular epistemic activities we are employing. Our positive knowledge of Being is limited to the empirical fact that it can sustain a radical plurality of epistemic activities. The 'abundance' that Feyerabend praises therefore arises from the interaction of diverse human epistemic activities, on the one hand, with the 'richness of Being' on the other. Abundance, so conceived, also makes clear the epistemic value of cultural diversity, since the diverse explanatory goals, modes of inquiry, and forms of knowledge that exist across both Western and non-Western cultures provide multiple 'approaches' to Being that maximise our epistemic engagement with multiple aspects of the ontological richness of reality whilst also fulfilling diverse human explanatory needs.

The foregoing account is my reconstruction of Feyerabend's later metaphysics. It provides an account of the major components of his metaphysics and their relationships to one another. Aside from a few footnoted remarks, I have not raised major criticisms of it yet, but in the next section I address some criticisms of the metaphysics and identify some problems with it. These mainly concern the charge that it is a form of social constructionism and the question of whether it is a form of realism or not.

8.3 Criticisms and problems.

Feyerabend did not provide a complete account of his metaphysics. The reconstruction given in the last section draws upon various remarks and descriptions scattered throughout the later writings. Feyerabend himself provided no systematic account and often experimented with his metaphysical ideas, playing with different interpretations

and ideas. This means that there are ambiguities and gaps in his account which suggest many different problems. My focus here is on Preston's charge (1997; 2009) that Feyerabend's later metaphysics is a form of social constructionism. This criticism aligns Feyerabend with various constructionist and relativist camps within the philosophy of science. It also reflects various complaints that Feyerabend defends an intolerable ontological pluralism, whereby Being includes various exotic entities like gods and demons. I outline Preston's charge and then discuss Farrell's objections to it.

Preston has argued that Feyerabend's metaphysics is a form of social constructionism. Social constructionists maintain that the theoretical entities of the sciences are 'constructed' by the social and material practices of scientific research. Preston argues that Feyerabend's apparent social constructionism is 'perhaps the weakest part' of Feyerabend's later philosophy and suggests that 'more plausible view[s]' are offered by Cartwright (1999) and Dupré (1993) (Preston, 2000: 620). Later in this section I suggest that Feyerabend's metaphysics is in fact very close to that of Cartwright and Dupré. Preston notes Feyerabend's enthusiasm for asserting the ontological authority of non-scientific epistemic activities, such as those of global indigenous cultures. For instance, Feyerabend writes that when Being is 'approached … in one way, we get elementary particles' and that 'proceeding in another, we get a nature that is alive and full of gods'. The consequence is that '[s]cience is certainly not the only source of reliable ontological information' (Feyerabend, 2001: 145).

Preston argues that this is a form of social constructionism because Feyerabend seems to admit into his ontology any entities and processes which have featured within human cultures. This leads to a radical ontological pluralism—indeed, to a pluralism so radical as to seem almost absurd. For instance, Feyerabend opens *Conquest of Abundance* with the cheerful remark that reality is 'abundant beyond our wildest imagination' because it includes 'trees, dreams, sunrises … thunderstorms, shadows, rivers [and] the lives of people, Gods, entire galaxies' (Feyerabend, 2001: 3). The list of entities and processes that Feyerabend seems willing to admit into his 'abundant' ontology therefore include concrete and abstract entities, natural and supernatural objects, and whole domains of reality (such as transcendental realities).

Preston objects that:

> 'Feyerabend never does anything to support his willingness to say that things that some people believe in, such as gods, exist (not merely that they exist 'for' those who believe in them, whatever that means). One gets the impression that he thought that merely pointing out that some people believe in them, or that enough people believe in them, was enough.' (Preston, 2000: 621)

On this account, Feyerabend lapses into social constructionism because the only condition that he imposes upon ontological realism is the existence of a culture or community who recognised such entities. As Preston neatly puts it, Feyerabend suffers from a 'reluctance to take sides' between groups with competing ontologies, and so reverts to the position that 'everything believed in by anyone from a 'successful' culture

exists' (Preston, 2000, 621). Feyerabend's radical ontological pluralism arises from his deep-seated reluctance to criticise the ontologies of the diverse cultures to whose protection he is committed. Instead of asserting some form of ontological realism and insisting that certain entities do not exist, Feyerabend lapses into the social constructionist view that, ontologically speaking, 'anything goes'. Feyerabend wants to embrace ontological pluralism without any ontological realism, and to allow that 'our world contains particles and [electromagetic] fields side by side with demons and Gods' (Feyerabend, 2001: 134).

Is Preston's charge of social constructionism justified? Certainly there are many passages throughout the later writings which would seem to support it. Feyerabend often embraces radical ontological pluralism, as evidenced by his various paeans to the 'richness of Being'. Furthermore, Feyerabend does sometimes seem to suggest that a culture needs only to engage in certain practices for them to produce (or construct) certain entities. 'Cultures', he writes, 'call forth a certain reality' by engaging in certain practices (Feyerabend, 1993: 272). One could read the later writings and conclude that Feyerabend did indeed hold to the social constructionist view that ontology is simply a by-product of various human social and material practices.

Feyerabend can certainly be read as a social constructionist. There are many passages which could sustain a social constructionist interpretation of his later metaphysics. However I suggest that there are two reasons why, in fact, he is not guilty of social constructionism. The first is that many of the social constructionist passages are best read as rhetorical or experimental, insofar as Feyerabend was playing with certain formulations of his ideas, rather than stating his established views. Such passages could also be simply due to ambiguous phrasing, especially since into his late period Feyerabend's writing because much less intellectually rigorous. The second is that there is a feature of Feyerabend's metaphysics which arguably insures him against social constructionism. Farrell notes this feature and Preston's omission of it:

> 'The important clauses which Preston does not take into his account are the ones which proclaim that reality "offers resistance" and that reality is simply "more pliable than is commonly assumed." If we look at the idea that reality "offers resistance" such that "some constructions find no point of attack in it and simply collapse," then we must conclude that … if reality offers resistance and unequivocally says 'no' to some constructions, then reality must, in some manner, be independent of the constructions.' (Farrell, 2001: 363)

Farrell proposes that the fact that Being 'resists' certain approaches means that it must have some objective structure and properties. Reality is not limitlessly malleable, even if it is more malleable than most forms of metaphysical realism maintain. There are therefore objective metaphysical limitations on the sorts of epistemic activities that one can successfully engage in and therefore limits on the type and range of manifest realities that we can generate. As Feyerabend himself remarks, 'the interference [generated by our epistemic activities] has its limits. Nature is not something formless

that can be turned into any shape; it resists and by its resistance reveals its properties and laws' (Feyerabend, 2001: 238). This remark makes clear the fact that Being has some objective structure and properties and that these provide limitations on the sorts of successfully epistemic activities human beings can engage in. Being does not afford us the metaphysical licence to construct whatever kind of world we desire, and certainly Feyerabend affirms that certain approaches 'simply collapse', or, perhaps, they meet with only limited 'response', 'linger for a while … and then disappear' (Feyerabend, 2001: 145, 215). The point being made here is that reality can sustain multiple different epistemic activities, more than has generally been supposed by monists, but that it is not able to sustain an unlimited number of such activities.

Farrell concludes that the fact of Being's resistance protects Feyerabend against the charge of social constructionism. Although our socially, materially, and intellectually-conditioned epistemic activities do play a constitutive role in the sort of manifest reality we generate, reality itself makes a decisive contribution. Farrell suggests that Feyerabend's point is that our knowledge of the world is generated by the interaction of our contingent and variable epistemic activities, on the one hand, and Being on the other. This preserves a role for human activities but preserves a commitment to metaphysical realism. Farrell illustrates this with the example of elementary particles. Feyerabend writes that physical scientific experiments ' show how certain sections of the world respond to [our] approaches' and states that molecules, for instance, 'do not simply *exist*—period—they *appear* only under well-defined and rather complex conditions' (Feyerabend, 2001: 142). Farrell suggests that Feyerabend's remarks here reflect his earlier studies in the philosophy of quantum theory, whereby our experimental results reflect the particular experimental arrangements we employ. Commenting on the example of elementary particles, Farrell argues that:

> 'There is here no question as to the reality of elementary particles: given the experimental arrangement, as specified in sub-atomic experiments, and given the conceptual-semantic system of quantum physics, elementary particles can be justifiably posited. The world is manipulated so as to give specific responses.' (Farrell, 2001: 362)

Feyerabend is not a social constructionist. The role of social factors is confined to providing the theoretical and practical conditions within which certain epistemic activities can be engaged in (for instance, particular experimental arrangements). These provide our 'approaches' to Being and they can be modified to minimise the 'resistance' they meet with. Farrell suggests that Feyerabend's later metaphysics was an extension of his earlier studies in the philosophy of quantum theory. The guiding idea is that our epistemic activities are complex and contingent and that their interaction with reality generates resistance. This resistance can be minimised, for instance by theoretical refinement and instrumental modification, or even by large-scale social and intellectual changes. Reality responds to very many of these epistemic activities but by no means all of them.

Farrell makes a further point about Feyerabend's later metaphysics which is pertinent. Feyerabend's later metaphysics is intended to provide foundations for epistemic pluralism. This of course includes an appeal to the epistemic activities of non-scientific cultures. This point fuels the social constructionism charge, because it encourages the view that Feyerabend wants to admit all manner of exotic entities—gods and demons, say—into his ontology. Farrell suggests that Feyerabend's remarks about culturally diverse ontologies reflect a commitment to proliferation and pluralism. The discussions of the Homeric gods, for instance, should be interpreted rhetorically and not literally. Feyerabend's purpose is to provoke us to take seriously both proliferation and the idea of a pluralistic reality. The appeals to non-scientific epistemic activities and ontologies is, 'at its strongest, a claim as to the possibility and as yet unfalsified status of schemes of reality incompatible with science; dismissed too swiftly by science' (Farrell, 2001: 365). Feyerabend's rhetorical statements are therefore motivated by a desire to promote the principle of proliferation; as Farrell puts it:

> 'The questions Feyerabend asks are, what other phenomena and laws can we find under other differing circumstances and conditions? And, what is the limit to the range of possible unique circumstances and conditions?' (Farrell, 2001: 362)

The 'doctrine of abundance', as I will dub it, is therefore a methodological principle. Feyerabend urges us to adopt a metaphysical picture of the world which is maximally amenable to epistemic pluralism, but which avoids lapsing into social constructionism. The doctrine of abundance functions as a form of normative realism because it assures us that reality does have objective structure and properties, thus encouraging us to continue to refine our theories and epistemic practices. It also gives us great scope to engage in a wide variety of epistemic activities and to proliferate and pluralise, giving us enormous scope to innovate and develop new modes of inquiry and forms of knowledge. However the inclusion of the idea of 'resistance' provides an essential check on the degree of epistemic pluralism that reality can tolerate. Because reality is not able to sustain *any* form of epistemic activity, there is still an onus on us to refine and modify our epistemic activities; furthermore, some epistemic activities simply will not succeed, despite any desires we may have that they will.

It is worth remarking that Feyerabend locates his metaphysics within the historical narrative of the 'conquest of abundance'. The key claim of this quasi-historical thesis is that there is a longstanding tendency within the histories of Western philosophy and science to underestimate the capacity of reality to sustain epistemic pluralism. The problems of reality that Feyerabend is concerned with arise when certain philosophical or scientific communities begin to deny the 'abundance' of reality and militate against pluralism. Feyerabend concedes that certain epistemic activities and manifest realities are inefficacious, even if he usually stops short of proposing that they should be abandoned. However, his complaint is that, too often, judgements about the inefficacy of certain epistemic activities are made without proper examination of them (a point developed at length in Chapter four). As Feyerabend puts it, '[t]he point is that there is

not only one successful culture, there are many, and that their success is a matter of empirical record, not of philosophical definitions' (Feyerabend, 2001: 240). No doubt Feyerabend thinks that very many of the epistemic activities we engage in—and many of the manifest realities they sustain—are inefficacious, in the sense that they fail to fulfil the explanatory aims that motivated them, or by their own internal standards, or in the sense that alternatives exist which would fulfil their aims superlatively well. The political issues that Feyerabend addressed invariably concern the question of how and when one culture is justified in criticising and replacing the epistemic activities of another culture. Such concerns would seem to be a replay of his dalliance with cultural relativism, but in the later philosophy they reflect a new position: the epistemic practices of one culture can be judged legitimately by another because there is a standard of judgement. An epistemic activity that meets with enormous resistance from reality will not fulfil its aims as well as one, perhaps from another community, which shares its aims; in that case, one can make a good case for the replacement of the less effective epistemic activity.

I conclude that Feyerabend's later metaphysics is a form of metaphysical realism. It successfully sustains and encourages epistemic pluralism and so also functions as a form of normative realism. The later metaphysics is not a form of social construction because Feyerabend included the clause that reality resists certain epistemic activities. There are objective features of reality that impose limits upon the kind and range of manifest realities that reality can sustain. I concur with Farrell that 'Feyerabend emerges as an, albeit idiosyncratic, but nonetheless unmistakable, realist' (Farrell, 2001: 363). The later Feyerabend therefore succeeds in providing a thesis of metaphysical realism which fulfils his aim of sustaining a radical epistemic pluralism. In the next section, I connect this interpretation with Feyerabend's earlier work on incommensurability and proliferation and suggest that one could identify Feyerabend as defending a sort of 'perspectival realism', of the sort recently defended by Ron Giere.

As a caveat, my aims in this Chapter are not to defend the later Feyerabend's metaphysics and epistemology, but only to provide the most charitable interpretation of them. There are many problems with these aspects of the later Feyerabend, some of which have been noted; however, in Chapter nine I suggest that many of these problems can be sidestepped if one interprets the 'metaphysics' as a methodological device.

8.4 Incommensurability and perspectivism.

In earlier sections of this Chapter, I argued that Feyerabend's later metaphysics was intended to support a radical epistemic pluralism. The key feature of the metaphysics is that reality is responsive to a diversity of epistemic activities, far more so than many philosophers of science have tended to suppose. Feyerabend concluded that reality is therefore metaphysically capable of sustaining epistemic pluralism. Epistemic pluralism not only maximises our epistemic engagement with reality but also enables us to fulfil diverse human explanatory aims, including the values and concerns of diverse human cultures. In this section, I summarise my account of Feyerabend's later metaphysics and the value of cultural and epistemic diversity by providing an account of what Feyerabend means by the 'abundance' of reality.

Feyerabend's metaphysical theorising began with an emphasis upon the 'abundance' of reality. This theme is first visible in *Farewell to Reason*, although it is clearly continuous with the pluralistic themes of the earlier philosophy. Oberheim makes the strong and plausible claim that all throughout his career Feyerabend's had 'no allegiance to any philosophical *isms* other than pluralism' and that his philosophy consisted in 'a pluralistic philosophical method that calls for pluralism in science and philosophy in the pursuit of progress' (Oberheim, 2006: 277, 287). The idea of 'abundance' is Feyerabend's attempt to provide an account of how epistemic pluralism can be accommodated within a metaphysical picture of the world. This interest in the metaphysics of epistemic pluralism reflects another longstanding theme in Feyerabend's philosophy, namely, incommensurability. Feyerabend's account of incommensurability progressed throughout his career as he applied it to different problems, for instance, the relation between scientific theories and, later, between human cultures. The core issue motivating his various forms of incommensurability was the question of how multiple accounts can be legitimately be given of a single phenomenon. Feyerabend asked 'why should it not be possible to say conflicting things about the same situation and not yet be right?' (Feyerabend, 1987: 81). Incommensurability arises between conceptual perspectives based upon incompatible theoretical principles, the standard example from the history of science being Newtonian and relativistic conceptions of space.

Feyerabend argued that incommensurability primarily arises between 'universal theories'. A universal theory is one which makes fundamental claims about the nature of reality. Feyerabend thought that all theories have ontological implications and this of course becomes problematic when one employs two alternative theories with competing ontological commitments. Such ontological problems may arise sequentially, when one theory replaces another (for instance, in a 'paradigm shift'), or simultaneously, when two conceptually incompatible theories are employed at the same time (for instance, when a physicist shifts between relativistic and Newtonian physics—they cannot both be true, but, then, they do not need to be for most scientific purposes). Feyerabend was always intrigued by the fact that 'when fundamental theories change, meanings change, which can result in a new conception of the nature of reality' (Oberheim, 2006: 123).

The success of a plurality of scientific theories leads to the puzzling metaphysical problem of how one is to account for the vindication of the mutually inconsistent ontologies those theories embody. This puzzle eventually came to motivate the later metaphysics and resulted in the account of 'abundance'. Oberheim explains the relationship between incommensurability and the metaphysics of epistemic pluralism:

> 'Feyerabend used the notion of incommensurability to characterise the relation between two successive 'fundamental', 'universal', or 'comprehensive' scientific theories. By these he meant non-instantial theories that talk about everything that there is … By restricting his notion to transitions involving such comprehensive theories, Feyerabend intended to stipulate those that have ontological implications; i.e., those that have implications about the very nature of reality.' (Oberheim, 2006: 157)

Feyerabend argued that incommensurability arises when the success of two or more theories commits us to accepting the mutually inconsistent ontologies those theories embody. The appeals in the later philosophy to the various mythological and magical cosmologies are intended as rhetorical radicalisations of the problem of incommensurability. But even if one confines the phenomenon of incommensurability to recognisably scientific theories, the problem stands because the plurality of successful scientific theories provides a sufficient diversity of mutually incompatible ontologies. Incommensurability is therefore a response to the problem of the metaphysics of epistemic pluralism: how can a plurality of theories (or epistemic activities) all meaningfully refer to a single reality when the ontologies those theories embody are mutually incompatible?

The solution to this is to recognise the interactive nature of human knowledge about the world. Feyerabend emphasised that our inquiries into the world are conditioned in a wide variety of ways. *Conquest of Abundance* details the perceptual and cognitive capacities of human beings, the contingencies of our language and concepts, the particularities of the social and material conditions which constitute our epistemic activities, the array of cognitive and practical values informing the direction of research, and the wider cultural and historical factors affecting the interpretation of our knowledge of the world. This emphasis upon the multiple contingencies affecting human epistemic activities corresponds to the wealth of literature in historical, philosophical, sociological, and cognitive studies of science. Feyerabend argued that such complexity and contingency is partly constitutive of the 'abundance' of reality, since these multiple conditions create highly textured epistemic practices. However, the contingencies accompanying our epistemic activities also condition the knowledge that they generate because they introduce complex conceptual and other parameters to the inquiries we engage in and the knowledge they produce. This is a lesson that Feyerabend imported from his studies in the philosophy of quantum mechanics: the particularities of our experimental arrangements affects the knowledge thus produced and variations in those arrangements will produce different outputs. To understand Feyerabend's remarks upon the contingencies of human epistemic activities one can compare it with Giere's recent defence of 'perspectival realism'. I will give a brief account of Giere's perspectival realism and then argue that it provides an excellent model for understanding Feyerabend's own commitment to epistemic pluralism.

There are three reasons for using Giere's perspectival realism to understand Feyerabend's metaphysics of epistemic pluralism. The first is that both defend a pluralistic realism which both permits and encourages a proliferation of epistemic activities. The second is that both are keen to avoid the twin extremes of objectivist realism and social constructionism; this is particularly important for the defence of Feyerabend against Preston's charge. The third is that there is an existing literature upon Giere and Feyerabend, namely Matthew Brown's (2009) comparison of the two. I give an account of Giere's perspectivism and then consider whether the later Feyerabend can be understood as a form of perspectivist.

In recent years Ron Giere (2006a, 2006b) has developed a thesis of 'perspectival realism'. The aim of Giere's perspectival realism is to develop a pluralistic understanding of scientific knowledge that can mediate between objective realism, on the one hand, and social constructivism, on the other. Its affinity to the later Feyerabend is therefore obvious. Giere's aim is to affirm both the role of human agency within scientific observation and theorising and the possibilities for a realistic interpretation of the theories thus generated. The resulting 'perspectival realism' is, he argues, 'as much realism as science can provide. Objectivist realism cannot be even an ideal goal' (Giere, 2006a: 16).[127] The reason is that scientific observation and theorising are perspectival insofar as they apply to only certain aspects of the world and only ever imprecisely (for the reason, of course, that they apply to *some* aspects at the expense of others).

Giere illustrates his perspectivism with the example of colour vision. Contrary to common sense, objects and lights are not 'objectively' coloured in the way we imagine. Grass, for instance, is not actually green 'in itself' since its perceived colour is the result of a fairly complex interaction between its physical properties and the evolved human visual system, and the wider cultural and linguistic factors which inform our perceptions. Colour is the result of an interaction between features of the world and our perceptual and cognitive systems. Giere argues that his 'interactionist' account of colour complicates the question of whether colours are objective properties of the world. They are if human beings are counted as parts of the objective world, in conformity with a commitment to naturalism, but they are not if, as Giere puts it, 'one imagines a world in which humans never appeared with their contingently evolved visual system', for then 'there is no basis for assigning colours to any object'. Without human beings with their evolved visual system there would simply be 'a hodgepodge of physical characteristics' (Giere, 2006a: 27).

The example of colour vision illustrates the principles of perspectival pluralism. The representations of the world that are generated by our various practices of scientific observation and theorising are the results of interactions between the world on the one hand and our contingent epistemic activities. Our instruments, as specific and material forms of epistemic activity, respond to only certain aspects of the world and then only with a limited responsiveness.[128] Such instruments do 'greatly enlarge and enrich' our perspectives upon the world but they are, still, inescapably perspectival. Therefore the knowledge they produce is therefore constituted by the particular interactions between our epistemic activities and the world itself. Giere puts it nicely when he explains that 'claims about what is observed cannot be *detached* from the means of observation' and that such observations 'remain *internal* to the relevant perspective' (Giere, 2006a: 48, 49). There is therefore no perspective which is 'outside' of any perspective and from

[127] Feyerabend similarly rejects objectivist realism and constructionism as extreme positions (Feyerabend, 1993: 271; 2001: 241).

[128] Feyerabend had earlier suggested that one consequence of the partial character of our epistemic activities is that '[*f*]*eatures* lacking in the description tend to *recede* into the background, outlines emphasised by the description become more distinct (Feyerabend, 1987: 106, original emphasis).

which one could therefore survey and assess all other perspectives: '[t]he knowledge we get comes from one perspective or another, not from no perspective at all. Multiplying perspectives does not eliminate perspectives' (Giere, 2006a: 92).[129]

The plurality of perspectives available to us is a consequence of two points. The first is the empirical fact that the world can sustain perspectival pluralism. Both historical and contemporary scientific practice makes it clear that there are a variety of perspectives at work, often many within even a narrowly defined domain of inquiry. And Giere is careful to stress that his perspectival pluralism need entail no strong metaphysical commitments about 'what the world is like' (see Giere, 2006a: 67f). The second is a result of the fact that perspectives are both 'partial' and what Giere calls '*interest-relative*' (Giere, 2006a: 73), that is, constituted by certain specific human values and explanatory interests. All perspectives have their own capacities and deficiencies relative to the aims informing them and the parameters introduced by the instruments and theories which generate them. Since there is neither certainty nor justified expectation that these explanatory aims will be shared across diverse research communities there is no good reason why any single perspective could legitimately be judged to be superior or more 'objective' than any other. The successfulness of each perspective is dependent upon its successful representation of the aspects of the world in relation to the explanatory interests informing it.

This preserves both a commitment to realism and an acknowledgement of the constitutive role of values in scientific inquiries. Nor is there any reason to suppose that a plurality of perspectives should be compatible with one another; one can accept differences between scientific theories if one recognises that they reflect different explanatory interests. Problems only arise when one insists upon the exclusivity or primacy of some one theory, a point discussed in Chapter four. Giere offers a metaphor: many cartographical projections are different from one another, even though they are all perspectives upon the Earth's surface, for the reason that they cannot simultaneously preserve shapes and areas everywhere. The differences between these projections therefore arise from a trade off in these variables—certain shapes are 'smoothed', for instance, whilst certain areas may be obscured or perhaps absented altogether. 'This feature of the example', writes Giere, 'conflicts with what I presume to be the widespread methodological presumption among scientists that different perspectives on a single universe should, in principle, be compatible' (Giere, 2006a: 80). This makes sense: often in mapmaking, for instance, accuracy is sacrificed in favour of interpretability—and so with perspectives more generally, one must balance a range of explanatory and pragmatic values against representational and other considerations.

The partial character of perspectives of course offers an argument in favour of pluralism. Since each perspective focuses on only certain aspects of the world and only then to a certain degree, the majority of the world's aspects are left out. And as Giere (2006a: 47f) notes, even those aspects which are included are then subjected to

[129] Giere (2006a: 93) concludes that an 'absolute conception of the world' in the sense made famous by Bernard Williams (1978) is therefore 'unattainable', even if one does still enjoy 'a viable notion of scientific realism [which] is perspectival and contingent'.

distortion by the computational and other processes that instrumental data must go through in order to become cognitively usable. An obvious strategy to address the partial character of perspectives is to invoke a principle of proliferation. The 'gaps' in one perspective can be identified by the occupation of another, alternative perspective; to borrow a term from van Fraassen, each perspective 'occludes' certain features of the world (van Fraassen 2010: 34-39 *passim*) and so by occupying a plurality of standpoints one can attain a more complete image of the object or phenomena under inquiry. I say 'more complete' because one cannot, of course, enjoy a complete perspective upon the world for the obvious reason that a perspective is generated by a cluster of instrumental and theoretical commitments which necessarily delimit the aspects of the world represented and the degree of accuracy to which that represent can attain.[130] A 'view from nowhere' would be no view at all. Perspectival pluralism therefore will not provide us with a 'complete' view of the world in all its aspects, but it will maximise the number of aspects available within the perspectives available to us.

Giere suggests a further role for perspectival pluralism. Often the contingencies inherent in certain perspectives will remain invisible and undetectable without the resources offered by alternative perspectives. This is, Giere stresses, only a '*possibility*' since there is no assurance than the mere occupation of one perspective provides us with an advantageous critical stance upon another. However, 'in the major historical examples of changes in theoretical perspective, the specific contingencies that sustained the earlier perspective became evident only from the vantage point of the later perspective. Often it is only from a new perspective that one can see, relative to that new perspective, where the earlier perspective was lacking' (Giere, 2006a: 94). A due sense of epistemic humility and a commitment to methodological fallibilism therefore requires us to generate new perspectives to fulfil critical as well as the more obvious explanatory functions; and, of course, each perspective can in potential fulfil both critical and explanatory aims.

How does Giere's perspectival realism compare to Feyerabend's pluralistic realism? Brown (2009: 219) compares Giere's perspectivism with the later Feyerabend and summarises their shared picture of perspectivism in three related claims:

1. That observation and theory are both limited and partial perspectives on the world.
2. That inquiry doesn't disclose a single, coherent description of the world, but a plurality of overlapping perspectives, which are compatible in one sense, which

[130] A similar point is made by Maurice Merleau-Ponty in *Phenomenology of Perception*, where he writes that: 'I see the next-door house from a certain angle, but it would be seen differently from the right bank of the Seine, or from the inside, or again fro an aeroplane: the house *itself* is none of these appearances … Is not to see always to see from somewhere? To say that the house itself is seen from nowhere is surely to say that it is invisible!' (Merleau-Ponty, 1996: 67). I thank Simon James for bringing this passage to my attention.

are all perspectives on the same world, but don't add up to an absolute view of the world.

3. These perspectives are inherently bound to our purposes, interests, practices, and abilities.[131]

Following Brown, I agree that Feyerabend can be interpreted as defending a form of perspectivism. Our diverse epistemic activities reflect our purposes and interests and their interaction with reality generates what Giere calls 'perspectives' and what Feyerabend calls 'manifest realities'. These are complex and dynamic and include a complex array of values, practices, epistemic activities, material and social contingencies, and reality itself. As Feyerabend puts it, 'the world as described by scientists is the result of a complex exchange between Nature [or, Being] … and inquisitive research teams including, possibly, the whole subculture that supports them' (Feyerabend, 2001: 239). Since these perspectives or manifest realities are 'interest-relative' they are, to borrow one of Feyerabend's terms, 'incommensurable' with one another, even though they all pertain to the same world. Therefore, our diverse epistemic activities generate a plurality of perspectives upon reality; this is epistemic realism, since the knowledge thus generated does reflect genuine features of the world, but is preserves what Brown calls the 'human contribution', the fact that our epistemic activities necessarily include our biological, cognitive, and social capacities, as well as our values and interests. As Brown puts it, 'the human contribution … must be understood as making as much of a contribution to the activity of comparison as the things being compared' (Brown, 2009: 219).

Giere and Feyerabend also share a common commitment to pluralism. Both affirm that our epistemic activities are 'perspectival' in the sense that each one can fulfil only certain of our values and concerns. For Giere, each perspective locks onto only certain aspects of the world and then only with a limited accuracy; similarly for Feyerabend, our manifest realities reflect only certain of our purposes and aims and are similarly structured by conceptual, methodological, and other commitments. The 'partial' character of our perspectives (or manifest realities) should therefore encourage us to proliferate and embrace pluralism. For both Giere and Feyerabend, proliferation enables us to expand the range of perspectives available to us. This will maximise both the range of aspects of the world accessible to us and our capacity to generate critical comparisons between our perspectives. Indeed, Giere suggests that it is '[o]ften only from a new perspective that one can see, relative to that new perspective, where the earlier perspective was lacking'—and he credits this point to Feyerabend's remarks on proliferation in 'Explanation, Reductionism, and Empiricism' (Feyerabend, 1962) (Giere, 2006a: 94, n49).

Perspectivism therefore entails pluralism and proliferation. Since no one perspective can fulfil all of our diverse explanatory, representational, and other interests,

[131] Brown in fact adds a fourth claim, that '[r]epresentation is a four-way affair between theory, world, audience, and guiding purposes', but this is less relevant for my purposes here.

proliferation and pluralism is our best strategy. Indeed, both Giere and Feyerabend reject monism as a goal of scientific inquiries on the grounds that it reduces our epistemic engagement with reality, the number of explanatory interests represented, and the potential for critical improvement. The virtue of perspectives (or manifest realities) is that they are partial, but this is also their vice; however, this vice is easily corrected by proliferation and pluralism. Giere (2006b) emphasises the fact that his perspectivism is necessarily pluralistic, and Feyerabend concurs; in a passage from *Conquest of Abundance* which is especially amenable to a perspectivist interpretation, Feyerabend argues that:

> '[A]llowing abundance to take over would be the end of life and existence as we know it—abundance and chaos are different aspects of one and the same world. We need simplifications (e.g., we need bodies with restricted motions and brains with restricted modes of perception). But there are many such simplifications, not just one, and they can be changed to remove the elitism which so far has dominated Western civilization.' (Feyerabend, 2001: 241)

The language in this passage is looser, but Feyerabend is clearly thinking along the same lines as Giere. Our epistemic engagement with reality is mediated by biological, perceptual, cognitive, instrumental, and social factors and each of these introduces limitations upon the knowledge thus produced. Therefore one should proliferate and maximise the number of perspectives so that the partial character of each perspective can be best accounted for. Using Giere's perspectivism, Feyerabend's position can be clarified: there is a single world, Being, but our knowledge of it is always conditioned by biological, cognitive, and other commitments. These commitments occlude certain features of the world, emphasising some at the expense of others, introducing a partial quality to the knowledge thus generated. Therefore, proliferation and pluralism should be recognised as our best means of avoiding a situation in which we are epistemologically and critically impoverished.

Can the later Feyerabend be understood as defending a form of perspectival realism? I suggest that he can, for three reasons. Firstly, Feyerabend is keen to develop a thesis of epistemic realism which incorporates both human agency and metaphysical realism. Like Giere, he steers a course between objectivist realism and social constructionism. Therefore the later Feyerabend shares the aims of perspectivism. Secondly, Feyerabend maintains that the inclusion of contingency of human epistemic agency—instrumentation, explanatory values, and so on—introduces a 'partial' character to the perspectives we generate. Our perspectives disclose certain aspects of the world to a certain degree of accuracy. Giere calls this the 'perspectival character' of our knowledge, whereas Feyerabend more negatively refers to the 'simplifying' nature of the 'abstractions' we employ. The point in both cases is that our knowledge of the world is partial and perspectival and reflects features of the world as interpreted according to the particularities of the epistemic activities we engage in. Thirdly, the partial or perspectival character of our knowledge of the world introduces a normative argument for proliferation. Giere and Feyerabend both argue that any single perspective

is limited in two ways: epistemically, it can only engage with certain features of the world and explanatorily, it can only fulfil certain of our explanatory aims. Therefore in order to maximise our epistemic engagement with reality and to fulfil multiple explanatory aims one must actively proliferate the number and kind of perspectives available.

The perspectival interpretation of the later Feyerabend has other advantages in that it is consonant with the arguments for epistemic pluralism offered by Chang and Harding. Feyerabend's perspectivism runs as follows: human epistemic activities are conditioned by various material, social, and intellectual contingencies, up to and including large-scale cultural values and interests. These are necessary to the constitution of the particular epistemic activities we engage in, but they also delimit the aspects of the world that we have epistemic access to. Therefore one should proliferate and increase the number and kind of perspectives available and this includes encouraging critical interaction between those perspectives. The resulting plurality of perspectives will still be highly conditioned and therefore there is no promise, and perhaps no possibility, that they can be unified; however this is not a problem, because any such unity is precluded by the basic incompatibilities of (for instance) the explanatory aims informing those perspectives. The unity of science must therefore be rejected as a viable aim of scientific inquiry. An effective strategy for pluralising the sciences is, following Feyerabend and Harding, to incorporate the epistemic resources of non-Western cultures and use these to both rehabilitate the disenfranchised epistemic projects of those cultures and, following Chang, to revitalise Western scientific projects.

The foregoing interpretation of the later Feyerabend provides the best interpretation of his later metaphysics. It aligns him with contemporary pluralists such as Chang and Giere and it connects them, in turn, with postcolonial philosophers of science such as Harding. In so doing, it identifies an important connection between cultural and epistemic diversity and so fulfils that important aim of Feyerabend's later philosophy. Interpreting the later Feyerabend using perspectivism also helps to make sense of his remarks upon 'abstractions' and locates these relative to his longstanding concern with pluralism and proliferation. Perhaps most importantly, the perspectivist interpretation of the later Feyerabend enables us to give a coherent account of the idea of 'abundance' which is so central to the later philosophy. The abundance that Feyerabend praises arises from the interaction of diverse human epistemic activities on the one hand and reality on the other. Our inquiries into the world are conditioned by a diversity of factors, cognitive, environmental, social, epistemic, and historical. Such diversities enable a radical epistemic pluralism, encompassing multiple systems of knowledge, modes of inquiry, and forms of knowledge and these collectively maximise the 'approaches' that we make to Being. As our approaches become more numerous and diverse they enable us to disclose a greater number of aspects of Being to greater degrees of articulation. The plurality of 'manifest realities' generated therefore maximises our epistemic engagement with reality, it allows us to satisfy multiple explanatory goals and it ensures that the values and interests of diverse human cultures are represented within out epistemic activities. The 'doctrine of abundance' so conceived also promises to 'help us to think more creatively about the possibilities and

the value for everyone of living in a world of multiple knowledge systems' (Harding, 2006; 51).

8.5 Conclusions.

This Chapter offered a study of the metaphysics and epistemology developed in Feyerabend's later philosophy. I identified the aims of this metaphysics as being to provide foundations for a radical epistemic pluralism. The metaphysics was then reconstructed from the various scattered accounts of it throughout the later writings. The core idea is that reality is sufficiently metaphysically complex to sustain multiple epistemic activities, which identify certain aspects of it to a certain degree of complexity. The interaction of our epistemic activities and reality can be stabilised so that they successfully fulfil the explanatory aims which inform them. I then suggested that Feyerabend's later metaphysics can be understood as a form of perspectival realism which is consonant with his wider emphasis upon the value of cultural and epistemic diversity.

Chapter Nine

Ch9 Pluralism and the Ineffability of Reality

9.1 Metaphysics and pluralism.
9.2 Epistemic pluralism and the ineffability of reality.
9.3 Can ineffability really secure epistemic pluralism?
9.4 The doctrine of ineffability as a 'first-order-norm'.
9.5 Ineffability and intellectual virtues.
9.6 Conclusions.

The later Feyerabend defended a thoroughgoing epistemic pluralism. Reality is receptive to many different modes of inquiry and forms of knowledge, including, but certainly not limited to, those of the Western sciences. Feyerabend defended this pluralism in two ways. First, he provided a series of epistemological arguments, which emphasised maximising criticism and empirical content, and affirming the diversity of values informing human epistemic activities. I connect this with contemporary debates over scientific pluralism, and values in science. Second, and more intriguingly, Feyerabend argued that the only way to safeguard epistemological pluralism was to assert the 'ineffability' of Reality. This 'doctrine of ineffability' precludes any one 'theory', 'worldview', or, more broadly, one set of epistemic activities, from 'Platonising' themselves, and asserting their 'hard realist' credentials. I then outline this 'doctrine of ineffability' and consider whether it can really safeguard epistemic pluralism in the way that Feyerabend suggests, using the recent work of Hasok Chang along the way.

9.1 Metaphysics and pluralism.

In his later philosophy, Feyerabend began to provide metaphysics to support his epistemic pluralism—or so I argued in Chapter eight. The metaphysics runs into many problems, some of which, like the constructionism charge, can be refuted; however, there are others which cannot be so easily discharged. I avoided critical discussion of these problems because in this Chapter I argue that, in fact, the 'metaphysics' that the later Feyerabend offers was not intended as a metaphysical system at all. Instead, it is a methodological and epistemological device whose aim is to support epistemic pluralism. The 'doctrine of ineffability' that the later Feyerabend offers is therefore not a metaphysical thesis but, rather, a methodological device.

On my interpretation, the later Feyerabend does not need to provide any substantial metaphysics at all to support epistemic pluralism. There has been a marked tendency amongst scientific pluralists to embrace a form of 'metaphysical quietism'. I offer two examples. Chang argues that: '[my] epistemic pluralism does not rest primarily on any specific beliefs about the fundamental ontology of nature. Without denying the inevitable linkage between epistemology and metaphysics, I want to show that there are

strong arguments for pluralism that do not depend on strong and assured views about what the world is really like' (Chang, 2010, n.p.).[132] Similarly, Stephen Kellert, Helen Longino, and Ken Waters remark that the pluralism they defend in their paper 'The Pluralist Stance' is 'not based on any metaphysical assumptions', and they remark that they 'have no a priori basis for assessing the monist assumption that the nature of the world is such that its parts can be completely described or explained by a comprehensive account grounded on a consistent set of fundamental principles' (Kellert, Longino, and Waters, 2006: xiii). In both cases, leading pluralists maintain that epistemic pluralism neither relies upon, nor need invoke, any particular metaphysical claims. One can rely simply upon historical, epistemological, or empirical arguments, without needing to 'go metaphysical'.[133] Indeed, some pluralists maintain that making metaphysical claims is not only unnecessary, but may threaten to prematurely foreclose certain possibilities for epistemic pluralism, and so should be resisted on those grounds.[134]

Feyerabend concurs that there are good epistemological arguments for pluralism. However, into his later work, he began to argue that pluralists do need something further, and so, it seems, began to abandon the metaphysical quietism of later pluralists like Chang, Kellert, Longino, and Waters. In *Conquest of Abundance*, this further thesis was what I dubbed the 'doctrine of ineffability'. That book includes a bold historical thesis—which I will not explore here—the guiding point of which is that the history of thought indicates that Being is rich, responsive, and 'abundant', responsive to a radical diversity of epistemic activities. This is the point that Feyerabend was making in his remark that '[a]bundance occurs in history. It does not occur in the world' (2001, 139). The marvellous epistemic pluralism that *Conquest of Abundance* appeals to is not an ontological feature of reality – although of course it may be, for all we know – but, rather, a reflection of the diversity of values and interests informing our epistemic activities, of the complex material and social conditions within which they occur, and, perhaps most importantly, of the ingenuity, imagination, and tenacity of human beings. These reasons alone are sufficient grounds for affirming that Being is more responsive and manifold than many philosophers and scientists have supposed: history teaches and affirms pluralism. What remains now is to consider this pluralism in relation to the doctrine of ineffability, because in the foregoing discussion the arguments given were

[132] I quote from the text of Chang's written paper, and thank him for allowing me to see a copy of the paper. See also Chang (forthcoming: Ch6).

[133] Dupré's 'promiscuous realism' (1993, Ch1; 2002, 53-55) is a good example of an epistemic pluralism that does rest on strong metaphysical claims.

[134] One might object that no danger to pluralism need arise, as long as one entertains a sufficiently 'rich' metaphysics. I agree that there are 'richer' and 'poorer' metaphysical systems; however, my worry is that even a very rich metaphysics will still foreclose certain epistemic activities—by mere fact of having certain ontological commitments of its own—and so constitute a danger, even if only in principle, to the sort of radical pluralism I have in mind. My thanks to Alex Carruth for raising this point.

historical and epistemological. Is there still a need for a quasi-metaphysical 'doctrine of ineffability'?

9.3 Can ineffability really secure epistemic pluralism?

Feyerabend claimed that insistence on the ineffability of Being is an essential precondition for defending radical epistemic pluralism. Although the various historical, epistemological, and empirical arguments are persuasive, there is still a need for some further 'metaphysical' claim: in this case, that Being is ineffable, meaning that one cannot have positive knowledge about it (and this includes both the nature of Being itself and the conditions or factors underlying the 'resistance' it offers').[135] In Feyerabend's words, Being, 'if such an entity can be postulated, is ineffable. What we do know are the various forms of *manifest reality*.' He continues that that '[m]any scientists identify the particular manifest reality they have developed with Ultimate Reality'—that is, Being—but cautions that '[t]his is simply a mistake' (2001, 214). This is a bald statement of the doctrine of ineffability, and it immediately invites several objections.

There are a range of possible objections to the doctrine of ineffability, but I will consider just three. First, the *nihilistic* objection: if we cannot know reality, then why bother? Many of our inquiries are directed towards the end of describing reality as it is, at establishing some sort of 'correspondence' between our best theories and reality. A doctrine of ineffability would forever preclude such ambitions, and, for that reason, could be seen to encourage a sort of epistemological nihilism. To this, I think, Feyerabend could make two responses: first, knowledge of Being itself is not anyway within our epistemic reach—our cognitive capacities do not allow it, so it is not and never was a viable goal. And second, there is no need, in any case, for us to entertain such 'realist' ambitions. The diversity of explanatory values and interests informing our epistemic activities provide us with more than enough to go on, without needing to press the 'objectivist realist' line (see Giere, 2006). Second, there is the *superfluity* objection: that, interesting as a doctrine of ineffability may be, there is simply no need for it. Certainly critics like Richard Rorty and Hilary Putnam have objected that such doctrines 'do not get us anywhere', are 'quite empty', and argue that there is 'nothing in the history of science' which suggests that they are anything to 'aim at'.[136] The implication for the pluralist is that the epistemological and other arguments for pluralism are enough, and so any further arguments, especially those which violate metaphysical quietism, are just superfluous. Indeed, introducing further, exotic claims like the doctrine of ineffability may even be dangerous and open pluralism up to a

[135] See the correspondence in Ben-Israel (2001), where Feyerabend candidly discusses his developing doctrine of ineffability (although, of course, he does not use that term).

[136] Rorty and Putnam's criticisms are documented and discussed in Cooper (2002), 281-282. Cooper himself defends a 'doctrine of mystery'—and, incidentally, invokes Feyerabend's ideas in *Conquest of Abundance*. See further Cooper (2000).

whole range of criticisms that it could easily avoid without any loss to its persuasiveness.

Third, and related to this, there is the *baroque* objection: that the doctrine of ineffability is just far too unnecessarily complicated. It opens up a metaphysical can of worms which simply complicates the pluralism debate without any obvious advantage to the pluralist, such that it is better simply to let it be. On these terms, Chang, Kellert, Longino, and Waters were correct to insist on metaphysical quietism—and I agree. There are many problems with Feyerabend's 'metaphysics of Being', not all of which can be accounted for by pointing to the fact that *Conquest of Abundance* was left uncompleted at the time of Feyerabend's death; and although he promised, in a letter to a correspondent, that though his ideas seemed 'rather mystical', he could make sense of them and provide hard arguments, the absence of them means, alas, that the superfluity and baroque objections do stand—at least, in the face of the plausible claim that the epistemological, historical, and empirical arguments are enough, and that metaphysical quietism is, if nothing else, the pragmatic or tactical response.

The superfluity and baroque objections seem to me reasonable enough. However, one would like to do justice to Feyerabend, so perhaps it is worth spending a little longer considering the possible nature and merits of the doctrine of ineffability. Clearly Feyerabend was aware of these objections, and the fact that he pressed on with the doctrine of ineffability, affirming it throughout many of his later essays and papers, indicates that it must, to his mind at the least, have been doing some important work. So, exercising the principle of charity, what functions might the doctrine of ineffability be fulfilling, given Feyerabend's guiding concern to defend a radical epistemic pluralism?

9.4 The doctrine of ineffability as a 'first-order-norm'.

To answer this question, I propose that the doctrine of ineffability be considered as a 'first-order norm' that can guide human inquiries into reality. A first-order norm is 'an expression of disapproval or approval toward a combination of attitudes' (Marturano, 2005: §4a). In this case, the (objectionable) attitudes in question are epistemic, and include dogmatism, intolerance, and other symptoms of a 'monistic' stance towards reality, and to our epistemic engagements with it. It is a pragmatic device that ought to be accepted by a given community of inquirers that lends shape and structure to their epistemic activities. The term and idea of a 'first-order norm' is borrowed from Simon Blackburn's *Ruling Passions* (1998), where he writes that 'our first-order ethical practice is based on the presupposition that there are objective, independent, binding ethical facts, facts that exert pressure on all rational beings, whereas in truth there are no such facts'. The idea here is that some form of 'moral realism' should be accepted by a given moral community to provide essential structure and depth to our moral beliefs and practices. Blackburn continues that '[t]he view that there is an authoritative source for ethics is purely a fiction', which 'may be a useful fiction', but cautions that it would 'be a mistake to take it for the truth' (1998: 301).

Blackburn thus proposes that some form of ostensible moral realism should be accepted as a 'first-order norm' to provide much-needed security for our moral beliefs and practices. For instance, this norm would guard against the ever-present danger that one might lapse into some form of corrosive moral anti-realism, or relativism, or other such slippery positions, which would cast our moral activities into disorder. On these terms, 'moral realism' does not function as any sort of metaphysical claim, but, rather, as a guiding norm that can provide stability, structure, and foundation for moral beliefs and activities which might otherwise lapse into disorder. It is a sort of 'regulative ideal', assented to by a given moral community, as a pragmatic device to help order and structure moral life. As Blackburn reiterates, 'what seems like a thought that embodies a particular second-order metaphysic of morals is seen instead as a kind of thought that expresses a first-order attitude or need'. The reason is that obligation—in this case, moral obligation—needs to seem 'peremptory and absolute' (as George Eliot put it), and so in turn 'often needs to be perceived as something sufficiently external to us to act as a *constraint* or bound on our other sentiments and desires' (1993: 153).

I propose that the doctrine of ineffability functions as just such a first-order norm. It is, ostensibly, a strong metaphysical claim, but, in fact, is a communally-acceptable norm. Like any first-order norm, its function is to 'promote our goals', for instance, by providing a means for 'co-ordinating human actions, avoiding conflict, generating conventions, promoting the possibility of flourishing existence' (Blackburn, 1998: 39). In Feyerabend's case, the goals in mind are epistemic, and the 'flourishing' which these goals contribute to is a sort of epistemic flourishing, which he equates with pluralism. After all, our diverse practical and cognitive interests, and the values and interests informing them, are best served by recourse to epistemic pluralism (as the epistemological arguments for pluralism make clear.) However, to undercut the monistic tendencies apparent amongst many philosophers and scientists, there is a need to provide deep foundations for this epistemic pluralism, and the doctrine of ineffability, as a 'first-order norm', is intended to do just that. It affirms that there are many ways of 'approaching' and engaging with Being, but denies that any one of our sets of epistemic activities are privileged, such that their asserting their absolute status would be unjustified.

This interpretation also protects Feyerabend against the three criticisms raised earlier: the *nihilism*, *superfluity*, and *baroque* objections. The last two are dealt with most easily: there is nothing superfluous or baroque about the doctrine of ineffability, because it is not a metaphysical claim. The doctrine of ineffability does not imply that we cannot know anything about Being, so it is not guilty of promoting epistemological nihilism. On the contrary, the 'abundance' that Feyerabend praises arises from the interaction of diverse human explanatory interests, values, and practices, on the one hand, and ineffable Being on the other. On these terms, the only limits to such 'abundance' are the various monistic imperatives evident amongst certain groups of scientists and philosophers. Rather gnomically, the only limits to abundance are those epistemic attitudes which maintain that there is a true or final theory—a 'theory of everything', say—towards which our current epistemic diversity is aiming or 'converging' upon. Feyerabend suggests that the main threats to epistemic pluralism are

these monistic attitudes, and proposes, instead, that scientists—and, indeed, all inquirers—should be humble, but optimistic.

The doctrine of ineffability has a strategic role to play. It is intended to secure epistemic pluralism against the ambitions of 'monists', by forever precluding any one community of inquirers from 'Platonising' their own particular 'manifest reality'. Feyerabend insists that each set of successful epistemic activities can affirm its own practical and cognitive merits; however, no one set can take the further step of 'Platonising' or 'absolutising' itself, and identify the manifest reality it generates with Being itself. As long as Being is unknown, and the doctrine of ineffability affirmed, we must keep our epistemic options open; however, this isn't a metaphysical claim but a 'first-order' norm to guide and regulate human inquiries.

How, then, does the doctrine of ineffability function as a 'first-order norm'? First, it prevents any community of inquirers from identifying its own manifest reality with Being itself, and so preserves epistemic pluralism. As long as Being remains ineffable, it is wise to keep our epistemic options open, and preserve and exercise a vigorous pluralism. And this does not lapse into epistemological nihilism—quite the contrary—because it maximises the number of active epistemic activities and assures that one gains the multiple 'benefits of tolerance' and 'benefits of interaction' that Chang describes. Second, and more importantly, the doctrine of ineffability encourages inquirers to cultivate a set of 'intellectual virtues': humility, tolerance, open-mindedness, intellectual sympathy, and so on. It ensures that we adopt a proper attitude towards our own cognitive capacities, to entertain realistic estimations of our explanatory scope, tolerance of other modes of inquiry and forms of knowledge, and encourages a sense of wonder and possibility in the face of the 'richness of Being'.

9.5 Ineffability and intellectual virtues.

A further claim can be made about the contribution that a doctrine of ineffability can make to sustain a vigorous epistemic pluralism. An acceptance of the ineffability of reality should promote the cultivation of certain intellectual virtues, especially in inquirers who accept it as a first-order norm. The intellectually-virtuous characters that result would, I think, be particularly receptive to epistemic pluralism. Indeed, my strong claim is that an intellectually-virtuous character is necessarily also a pluralist, although my arguments here do not rely upon this stronger claim.

The connections between history and philosophy of science and virtue epistemology are fairly sparse at the moment, doubtless due to the still fairly-new status of virtue epistemology as a distinct area of epistemology. Despite this, a vocabulary of virtues is common amongst philosophers of science: terms (or, virtues) like 'humility', 'tolerance', 'open-mindedness' are all used as terms of praise, and scientists themselves may be celebrated for their 'discipline', 'perseverance', and 'generosity'. One great advantage and attraction of virtue epistemology is that it transforms these honorific terms into strong virtues, providing us with a new and deeper set of terms of praise—

and, of course, criticism.[137] There is, sadly, neither need nor space here to go into the possibilities for a 'virtue-centric history and philosophy of science'. My aim is simply to suggest how Feyerabend's doctrine of ineffability may sustain pluralism by encouraging the cultivation of certain intellectual virtues.

To do this, it is instructive to note that Feyerabend's doctrine of ineffability was largely inspired by the fifth-century Christian mystic Pseudo-Dionysius (1987), commonly known to theologians as Denys. Indeed, Feyerabend reports that, when developing his views on the 'ineffability of Being', that he 'started from what Pseudo Dionysius Areopagita said about the names of God'.[138] Feyerabend here refers to Denys' *On the Divine Names*.[139] For Denys, reality is ultimately identified with God. Human beings cannot have direct or complete knowledge of God, because of our limited perceptual, cognitive, and linguistic resources. What we can and do have is a whole series of 'divine names', each expressing an aspect of God—like 'fire', 'light', 'father', 'creator', 'wisdom', and so on. Some of these divine names (like 'fire' and 'light') are mutually coherent, but others ('wisdom' and 'son', say) certainly are not. Pseudo-Dionysius therefore concluded that our knowledge of God is partial and pluralistic, and that, therefore, the true nature of God does and will remain forever unknown and ineffable. The proper comportment that human beings should therefore assume when contemplating God is, therefore, best expressed by the intellectual and theological virtue of humility.[140] Although the nature and significance of the virtue of humility is much contested, the guiding idea, in the theological context at least, is that human beings must acknowledge the proper limits concomitant to their inquiries into, and knowledge of, God. [141]

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[137] For instance, Chang (2010: 9) mentions a 'reasonable humility' which should arise from an appreciation of epistemic pluralism, 'concerning human ingenuity, or a recognition of the complexity of life, or both'. Lorraine Daston and Peter Galison (2007: 39-40) similarly note that a virtue-centric historiography has the 'unexpected payoff' of rendering the 'oddly moralising tone' of early modern scientific writing intelligible: their 'admonitions, reproaches, and confessions' referred not only to epistemic errors, like the intrusion of aesthetic judgements, but also reflected tangible moral failures—of patience, diligence, and so on. I say more about this in my (2009a).

[138] See Feyerabend (2001: 195, 214, 233). See Gersh (1978) and Rorem (1993) for excellent introductions to Pseudo-Dionysius. For a fuller account of Feyerabend's use of Pseudo-Dionysius, see Kidd (forthcoming c).

[139] For a useful discussion of the 'divine names', see Janowitz (1991)

[140] David E. Cooper (2002) similarly defends a 'doctrine of mystery', and offers a sustained argument for support the claim that the virtue of 'humility' is an essential feature of it.

[141] There is a growing literature on the virtue of humility. For epistemic humility in science, see Kidd (2011b). The classic discussion is arguably the section 'On Humility' in Thomas Aquinas' *Summa Theologica* (§161). See also Richards (1992). Often humility is interested as reflecting some sense of self-abasement—this is what Nietzsche disliked about Christianity. The interpretation of humility as a form of self-

How do these remarks relate to Feyerabend? If one accepts that ultimate reality—whether God or 'Being'—is ineffable, then one must reassess one's epistemic capacities accordingly. Most obviously, any ambitions to achieve a final, complete, or absolute knowledge or understanding must be abandoned. Correspondingly, one should accept that any such knowledge that one might claim will be partial, and pluralistic: Being responds to all of our epistemic activities and, as history indicates, can generate a vast diversity of 'manifest realities', each reflecting a complex interplay of our values, practices, and interests with ineffable and 'abundant' Being. These various manifest realities have, as it were, ragged edges and, owing to the diverse values and so forth which constitute them, cannot be harmonised or unified (nor, indeed, is there any need for them to be). Any such claims to unity, actual or inevitable, are, argues Feyerabend, 'a pedagogical fake', or 'an attempt to show, by a judicious up- and down-grading of disciplines, that a synthesis has already been achieved' (2001: 154). Therefore, once one accepts the doctrine of ineffability one should perpetually resistant to attempts to seek any 'final' theoretical account, thereby rejecting all forms of monistic realism. And the cultivation of humility and other intellectual virtues will be central to this, for two reasons.

First, Feyerabend can use a virtue-epistemological critique to counter the monistic tendencies that worry him. Any one community of inquirers which 'Platonised' their manifest reality would be guilty of a lack of humility, since they must make the claim that had achieved a privileged cognitive capacity—an Archimedean point—from which they could assert the identify of their manifest reality with reality itself. Since our knowledge is constituted and confined by our manifest realities, one cannot 'step outside' them to directly compare them against Being itself. Therefore, we have no means by which to assert the 'absolute' status of our own, preferred manifest reality.[142]

Second, there is a tentative language reflective of virtue epistemology throughout Feyerabend's writings. Throughout his career, during his 'early' and 'later' periods, one finds him repeatedly emphasising the moral and epistemic value of a host of recognisably intellectual virtues, including: humility, imagination, curiosity, open-mindedness, and intellectual sympathy. Correspondingly, Feyerabend also constantly

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abasement seems unnecessary, however, since being humble, at least in my view, consists in the appreciation and assessment of one's own limits and capabilities in relation to a wider context. The fact that certain features of the 'order of being' exceed 'all our competence' (Havel, 1992: 267) should not inspire pessimistic renderings, such as Nancy E. Snow's suggestion that '[c]entral to the role of humility is the acknowledgement of error or personal deficiency and its negative impact on others' (1995: 205). Such negative conceptions of humility – as some kind of perverse praise of one's own limitations and faults – seems to owe much to Aquinas's treatment of humility. Judith Andre is, therefore, surely correct in her remark that '[i]f humility is a virtue it will be a richer object of study than the current philosophical discussion suggests' (Andre, 2002: 279).

[142] Feyerabend's worries about 'Platonisation' are best stated in the form of Cooper's 'hubris' charges against 'scientific absolutism'. See Cooper (2002: Ch8).

criticises both individuals and groups who exhibit the related intellectual vices, such as dogmatism, closed-mindedness, and unimaginativeness.[143] Such virtue-epistemological critique is very visible in Feyerabend's criticisms of Kuhn in 'Consolations for the Specialist', for instance in his complaint that Kuhn 'steadfastly emphasises the dogmatic, authoritarian, and narrow-minded features of normal science', with the explicit end of achieving a temporary "'closing of the mind"' (Feyerabend, 1970d/1981b: 139).

This interpretation of Feyerabend has been presaged by Godfrey-Smith (2001) and Meynell (1978). They both emphasise the importance to Feyerabend of what a virtue epistemologist would call 'good intellectual character' (see Roberts and Wood 2007). Godfrey-Smith (2001, 111-112), for instance, notes that Feyerabend's paper 'Consolations for the Specialist' 'shows him to be one of the most perceptive critics of Kuhn', for the reason that Kuhn offered 'an incitement for scientists to become orderly and mechanical' by 'encouraging the worst trends in twentieth-century science toward professionalization, narrow-mindedness, and exclusion of unorthodox ideas' (Godfrey-Smith, 2001: 111-112). Often, such complaints are passed off as typical Feyerabendian polemics—perhaps reflective of his idiosyncratic temperament—rather than being perceived as philosophically-significant criticisms. I suggest that, on the contrary, the charge that Kuhn's model of science encourages the formation of 'dogmatic', 'narrow-minded' scientists is at the heart of Feyerabend's criticisms in 'Consolations'. Indeed, Feyerabend himself argued that 'the final and most important argument against a 'mature' science as described by Kuhn' is the 'humanitarian' one (Feyerabend, 1970d/1981b: 144). Hugo Meynell (1978: 252) similarly suggests that, on Feyerabend's view, 'it is the thorough application of the three mental dispositions of attentiveness, intelligence, and reasonableness, which are operative to some extent in all human affairs whatever, which is … constitutive of science as such.' Feyerabend values the sciences '*because*, and *in so far as*, [they] cultivate mental dispositions in a very thorough way, far beyond the immediate requirements of survival'. However Meynell identifies these 'mental dispositions' as consequences of the application of scientific method and so thinks that Feyerabend's 'anarchism' militates against them. This is false, for the reason that there is, as Feyerabend argued, no singular 'scientific method'; indeed, 'epistemological anarchism' allows for a plurality of intellectual virtues to be manifested across the diverse range of epistemically excellent activities that one can justly describe as 'science'. Godfrey-Smith and Meynell between them lay the

[143] I will shy off from giving a long list, but for some examples, see Feyerabend (1981a), 21, 34, 82n4, 85-86, 139, 150-151. This point might also shed light on the *ad hominem* nature of many of Feyerabend's criticisms: one cannot help but criticise a *person* for having and exhibiting intellectual vices, since it is persons which are the 'bearers' of virtues. However, see further Fricker's (2010) proposal that institutions, juries and other collectives may also possess virtues; an engaging future project would be to see how virtues operate within scientific communities—a project which my case study of Feyerabend and Kuhn is intended to foreshadow.

foundations for future studies of the connections that Feyerabend may have seen between intellectual virtues and scientific methodology.

Finally, a focus on intellectual virtues also helps to make sense of Feyerabend's polemics against 'intellectuals', who, he alleges, invariably exhibit 'conceit' and 'intolerance' (Feyerabend, 1993: 266-267; 1994).[144] (Whether such criticisms are fair or not is, of course, another matter).

I propose that the doctrine of ineffability functions as a 'first-order norm' by providing a foundation for the cultivation of intellectual virtues which are constitutional to being a good epistemic pluralist. These virtues include humility, tolerance, and open-mindedness, and these are pre-conditional to epistemic pluralism because they militated against the monistic or dogmatic tendency to restrict the range of theories and traditions that one entertains, consults, and considers. The role of the doctrine of ineffability here is to emphasise that the 'richness of Being' cannot be exhausted by any one theory, or set of theories; that one needs many different and often-divergent 'approaches'; that each 'approach' can claim explanatory successes and cognitive and practical efficacy of its own; and, finally, that the only real limit to the 'abundance' of reality is our own intellectual-viciousness. Of course, there may well be metaphysical limits to our investigations into reality, but, even if these exist, we will encounter the limits imposed by our own intellectual viciousness long before any limit that reality itself may impose. The doctrine of ineffability 'points beyond itself to other types of knowledge and, together with them, to an unknown and forever unknowable [Being]' (Feyerabend, 2001: 196).[145]

9.6 Conclusions.

I have argued that the later Feyerabend sought to defend a radical epistemic pluralism by introducing the 'doctrine of ineffability' as a first-order norm. The doctrine of ineffability was intended to preserve pluralism by precluding any one community of inquirers from affirming the 'hard realist' credentials of their own 'manifest reality'. However, ineffability of this sort is not a metaphysical position, even if the ambiguities in Feyerabend's presentation suggest that it may be. It is, rather, a 'first-order norm' whose function is to preserve a space for epistemic pluralism, in two ways. First, it perpetually prevents any one manifest reality from identifying itself with reality itself, which therefore remains 'forever unknown' and open to further, pluralistic investigation. Second, ineffability, properly conceived, should encourage the cultivation of certain intellectual virtues, like humility, which pluralism is receptive to but which are incompatible with monism. I conclude that the doctrine of ineffability, so

[144] See, especially, his remarks on Husserl (Feyerabend, 1987: 274). See further Feyerabend (1998).

[145] In *Conquest of Abundance*, writes Grazia Borrini-Feyerabend (2001: xii), Feyerabend 'just points at the abundance of Being' and at 'the human openness and tolerance' which appreciate of it requires. Note, too, that 'openness' and 'tolerance' are ethical and intellectual virtues.

conceived, successfully functions to provide firm foundations for epistemic pluralism, and that Feyerabend contributes a useful component to contemporary defences of pluralism.

Ch10 Conclusions

10.1 A recap.
10.2 The claims of this thesis.
10.3 Feyerabend into the future.
10.4 Conclusions.

This thesis offered a study of the later philosophy of Paul Feyerabend. I argued that his later works can be understood as a defence of cultural and epistemic pluralism. 'On the Critique of Scientific Reason' includes the important remark that '[t]he *excellence* of *science* is *assumed*, it is not argued for' (Feyerabend, 1976b: 112) and this brief sentence really sits at the heart of the complex array of political and philosophical concerns that animated Feyerabend's later philosophy. In section one, I provide a recap of my thesis and section two then outlines my major claims. In section three I end with some remarks upon possibilities for future studies of Feyerabend.

10.1 A recap.

Chapter One outlined some of the usual criticisms of Feyerabend's later work, including the charges that it consists mainly of 'anti-science' polemics, cultural relativism, or else that it lacks sufficient coherence to be considered as anything more than essays on incidental topics. I rebutted these objections and asserted the unity and value of the later Feyerabend. Chapter Two developed the defence of the later Feyerabend by providing a re-reading of the period from 1975 to 1978, between the publication of *Against Method* and *Science in a Free Society*, which is often seen to mark the 'turn' between the early and later Feyerabend. I suggested that during this period Feyerabend first began to explore the philosophical and political implications of the pluralistic view of the sciences be had been developing. However, owing to the harsh criticisms of *Against Method*, his first attempt to lay out these ideas was *Science in a Free Society*, whose exaggerated rhetoric obscured the legitimate points it had to make. At this point, Feyerabend's status within the philosophy of science began to wane, even if his core project—a 'critique' of the nature and limits of science—was a legitimate one.

Chapters Three and Four presented Feyerabend's epistemological arguments for epistemic pluralism and, in Chapters Five and Six, these were connected with Feyerabend's commitment to the value of cultural diversity. I suggested that, following John Stuart Mill, Feyerabend recognised that cultural and epistemic diversity are mutually enriching. Therefore, a plurality of 'modes of living' and 'modes of thought' is advantageous both for the growth of knowledge and human wellbeing. This helps to make sense of Feyerabend's political concerns about the 'hegemony' of the sciences, which reflect the moral and political concern, inherited from Mill, about threats to diversity. Chapter Seven developed this with an examination of Feyerabend's political philosophy of science, which, on my interpretation, is an attempt to encourage

philosophers to take seriously the question 'what's so great about science'. This question resonates throughout the later work and is not a statement of 'anti-science' prejudice, but is simply a call for us to be able to provide a clear account of how and why the sciences enjoy the cognitive and cultural prestige that they do.

Feyerabend clearly wanted to defend cultural and epistemic pluralism on both philosophical and political grounds. Such pluralism maximises the conditions in which human beings can flourish; the sciences can play an important part in this, but not to the exclusion of other disciplines and subjects, such as philosophy and the arts. Chapters eight and nine explore one of Feyerabend's final arguments for pluralism, the 'metaphysics' that he began to develop during the last five years of his life. Chapter eight provided a reconstruction of the later Feyerabend's metaphysics and epistemology, which I suggested could be interpreted as a form of 'perspectivism'. The idea of 'abundance' outlined in *Conquest of Abundance* arises from the interaction of diverse human cognitive and creative faculties, on the one hand, with reality, on the other. There are problems with the later metaphysics, of course. Some of these, such as the charge of social constructionism, can be rebutted, but other remain more persistent; however, I suspended discussion of these and argued, in Chapter nine, that the 'doctrine of ineffability' that the later Feyerabend offers is in fact a methodological and epistemological strategy, not a metaphysical thesis. The 'ineffability of reality' functions as a 'first order norm', in Blackburn's sense, and its aim is to preclude any one community of inquirers from asserting the exclusivity and priority of their own epistemic activities and conceptions of reality. Feyerabend's talk of the 'abundance' and 'ineffability' of Being should be understood as efforts to secure a commitment to epistemic pluralism.

The theme of pluralism therefore resonates throughout the later Feyerabend and it brings a new unity to essays and books that might otherwise seem admirably but hopelessly eclectic. In his explorations of pluralism, Feyerabend appeals to the history and philosophy of science, anthropology, Christian mysticism, and anything and anyone else that might offer him useful arguments or ideas. This is wholly consonant with his pluralistic methodology. Understanding the later Feyerabend as defending cultural and epistemic pluralism also shows his views are far less absurd or untenable than is often supposed. At the end of the day, Feyerabend does not claim that 'Western science' is useless, or that it is on a par with witchcraft and voodoo, nor does he claim that 'anything goes' across cultures and sciences. Sometimes his rhetoric and ambiguities obscure his points, but there is, I suggest, a very persuasive position underlying his accounts of pluralism: Feyerabend's position is that one should be able to account for the value of the sciences and that this requires us to have a proper understanding of the nature and limits of scientific inquiry.

The sciences have much to offer, but their cognitive and cultural value is contingent upon our enjoying a proper critical perspective upon them. Feyerabend worried that 'myths' about the sciences (such as the 'myth of method' and the presumption of the omnicompetence of science) were obscuring our capacity to critically assess their value and efficacy. Feyerabend is not in any sense 'anti-science', but is, rather, 'anti-scientistic' in the sense outlined by Midgley (2001) and Dupré (1993): their hostility is

not to the sciences but only to inflated and misleading accounts of the structure, value, and efficacy of the sciences. His later philosophy was a sustained invitation to us to develop this critical perspective on science; the result of this perspective may well be a reassessment of the distribution of epistemic excellence, but it would not result in anything like the abandonment of science. Of course, Feyerabend felt that there were good empirical reasons to take seriously certain practices and systems currently judged to be 'non-scientific', and he was sensitive to the social, environmental and political destruction that have resulted from the presumption that cognitive and practical efficacy is confined to Western scientific and technological practices alone. However, such reassessments are made, not in an 'anti-science' or 'anti-Western' stance, but in a humanitarian spirit which sought to identify the practical and cognitive resources available to humankind. Far from being the 'worst enemy of science', the later Feyerabend proposes that the sciences may well deserve their privileged authority within our culture, but only on the condition that such authority was the result of sustained critical reflection, rather than prejudice or presumption.

Feyerabend considered the question of the value of the sciences to be unanswered. Smolin (2007: 292) once remarked that Feyerabend's 'anti-science' reputation had 'undoubtedly arisen because he considered the question of why science worked as unanswered'. This can be understood in two ways. First, Feyerabend thought that many familiar reasons given for the value and efficacy of the sciences were false or untenable. The two main reasons that he often referred to were the 'argument from method' and the 'argument from results', the claims that the sciences are uniquely efficacious because they enjoy a distinct 'method' which ensures their special cognitive status. Feyerabend's argument against methodological monism and his epistemic and empirical defences of 'non-scientific' practices and knowledge were both intended to undercut these two arguments. Second, Feyerabend thought that judgements about the value of science were too often badly performed, presumptive, or just not taken seriously. Many of his later appeals to what I described as the efficacy of indigenous cultures reflected a concern to challenge the 'presumption of the omnicompetence of science'. Feyerabend did consider that many 'non-scientific' environmental, medical, and classificatory practices were in fact successful and there is ample empirical and philosophical material in support of this; however, his primary aim was, I think, to prompt us to take seriously the question 'what's so great about science'.

The later philosophy is therefore a sustained attempt to enable us to properly frame and address the question of the value and efficacy of the Western sciences in relation to the diversity of epistemic practices evidenced by global cultural diversity. Many of these attempts are, of course, polemical; but they are motivated by an earnest desire to provoke critical discussion and a sincere concern to preserve cultural and epistemic pluralism.[146] Feyerabend thought that both philosophy and polemic were necessary to make us realise the presence and power of the myth of the omnicompetence of science; this is why he challenges us to imagine a 'post-scientific society' within which

[146] As one reviewer of *Conquest of Abundance* remarks, 'Feyerabend's views become more challenging with the quality of the questions put to him' ('A.N.', 2001: 198).

scientific knowledge and practices play no part, and why he calls for the separation of science and the state, or when he curtly states that the philosophy of science should be abandoned and 'left to die'.[147] The purpose of such provocations is to help us to realise the presence of the entrenched prejudices which Feyerabend thinks preserve the privileged authority of the Western sciences. As Feyerabend once put it:

> 'It is very difficult nowadays to approach such questions in the right spirit. What is worthwhile and what is not are to such a large extent determined by the existing institutions and forms of life that we hardly ever arrive at a proper evaluation of these institutions themselves. The sciences especially are surrounded by an aura of excellence which checks any inquiry into their beneficial effect.' (Feyerabend, 1981b: 142)

This passage makes the aims of the later Feyerabend clear. A 'proper evaluation of the sciences' which proceeds in the 'right spirit', free from prejudice and presumption, will allow us to assess the 'aura of excellence' which surrounds the sciences. This will almost certainly result in a reconceptualisation of the structure and efficacy of the sciences, but this is a good thing, since it provides us with a clear and truthful understanding of them. It should also encourage pluralism, as we realise that possibilities exist for diversity in science which is currently checked by our false ideas about what science is, and isn't. As Dan Hutto recognises, in a review of *Conquest of Abundance*, our capacity for conceptual innovation and epistemic growth 'rests on the existence of unnoticed or, as yet, unemphasised aspects of reality' which account for 'the possibilities in our ways of understanding that have been under-explored, unexamined and/or simply unseen' (Hutto, 2002: 366). 'What is important to stress', adds Hutto, is that 'such ambiguities and possibilities for change are always present in our language and practices, since they draw on the abundance that ultimate reality, or Being, avails us' (Hutto, 2002: 367). The fact of the abundance of reality ensures the possibility of epistemic plurality and cultural diversity and therefore preserves an optimistic and attractive vision of a world of irreducible and inexhaustible richness, beauty, and complexity. The abandonment of false images of the science, and the reassessment of epistemic excellence, should begin to disclose something of the 'richness of Being' that Feyerabend clearly delighted in.

Feyerabend does not think that his later philosophy actually captures the abundance of reality. To do so would mean that he was as guilty as the 'monists' he criticises of trying to 'cut down' or dissolve the 'richness of Being' that he so praises. Feyerabend suggests simply that the world is richer than we may be liable to suppose. The policy is not 'anything goes' but rather 'many things go'[148]—and the task of philosophers of

[147] In *Science in a Free Society*, Feyerabend suggested 'that fields such as the philosophy of science, or elementary particle physics, or ordinary language philosophy, or Kantianism should not be reformed, but should be allowed to die a natural death' (Feyerabend, 1978a: 122).

[148] I borrow this neat quip from Chang (2010).

science is to help to identify just which things 'go' and which do not, and to expose those prejudices which interfere with this project. As Hacking puts it:

> 'What Feyerabend disliked was any form of intellectual or ideological hegemony … Single-mindedness in the pursuit of any goal, including truth and understanding, yields great rewards; but single vision is folly if it makes you think that you see (or even glimpse) *the* truth, the one and only truth.' (Hacking, 2000: 28)

What Feyerabend is trying to challenge is our susceptibility to 'single vision', to the reductionist and monistic tendencies which, he alleged, exist in certain areas of our intellectual culture, and which have come to enjoy considerable cognitive and cultural authority and, with that, striking political power.

10.2 The claims of this thesis.

There is much to say about the later Feyerabend. In this thesis I have focused upon one theme, the value of cultural and epistemic pluralism. Much more could be said about the later Feyerabend, but it will be worthwhile to state, briefly, my major claims and their significance for Feyerabend scholarship and the philosophy of science:

(1) The later philosophy of Paul Feyerabend is unified and worthy of philosophical attention. The rebuttal of the 'four charges' against his later work should open the way for future studies, and hopefully this thesis will have offered some avenues for profitable enquiry.
(2) The significance of Feyerabend's work is not exhausted by his contributions to the philosophy of quantum theory, rationality and theory change, and methodology. These are all important, but the later work broaches new issues and questions which deserve to be taken seriously; for instance, questions about the value of the sciences. Indeed, many of the topics he raises have gone on to become important debates in the philosophy of science.
(3) Feyerabend should assume a more central place within contemporary debates about pluralism in the sciences. Only a very few contemporary pluralists, namely Chang and Dupré, cite Feyerabend as a precursor. A notable area in which Feyerabend can contribute to contemporary pluralism is his emphasis upon the contributions that other cultures' scientific traditions can make.
(4) Feyerabend anticipated many of the themes of subsequent postcolonial and political philosophers of science, such as Harding and Kitcher. However, these subjects have not recognised this fact and would, arguably, benefit from doing so—especially since Feyerabend indicates how political and postcolonial themes are continuous with more familiar issues in 'mainstream' philosophy of science.
(5) The influence of John Stuart Mill upon Feyerabend has been clarified. What Feyerabend took from Mill was not simply arguments for theoretical pluralism, but a commitment to the 'ethical' value of cultural diversity. Mill's claim that a

diversity of 'modes of living' is a precondition to human flourishing became a central feature of Feyerabend's work.

(6) Feyerabend had a deep and abiding concern with human wellbeing. I called this the 'primacy of ethics'. This is both an ethical and a political concern and it arguably animated his other concerns with, for instance, pluralism in the sciences. I would go as far as to say that all of Feyerabend's pluralism was, following point three, motivated by a concern to provide conditions maximally suited for human flourishing. As Oberheim beautifully puts it, *Conquest of Abundance* is 'an invitation to participate in the richness of being and a more tolerant and compassionate view of how the sciences, arts, and religions could jointly contribute to improving the human condition' (Oberheim, 2001: 598).

(7) The later Feyerabend was not a cultural relativist. Instead, he maintained that cultural diversity provides the range of 'forms of life' within which human beings can live and flourish. One can engage in intercultural moral criticism, provided one has sustained contacts with the populations in question. Feyerabend certainly was a cultural relativist for a period, but that pejorative label does not apply to his later work.

(8) Feyerabend's political philosophy of science is more coherent than is often supposed. The remarks on the separation of science and the state and the proposals for the public control of science are not, in themselves, the purpose of Feyerabend's political remarks. Instead, they are intended to identify some of the issues which he thinks have been neglected by philosophers of science—even if recent work, for instance by Philip Kitcher, has been engaging with them. The core of Feyerabend's political philosophy is the insistence that human beings must be properly informed about the institutions that affect them. The sciences were, he worried, too often exempted from this.

(9) Feyerabend's later work connects with range of disciplines and subjects that extends far beyond the history and philosophy of science. Obvious points of contact include medical and cultural anthropology, ethics, environmental and development studies, indigenous rights movements, feminist and postcolonial studies, and the history of philosophy. These wider connections indicate how Feyerabend can perhaps contribute to debates in these disciplines, and, reciprocally, how they might strengthen his later work. Even ostensibly eccentric inclusions, like Pseudo-Dionysius and the Dadaists, are in fact important to understanding the later Feyerabend—and they also indicate something of his scholarly ingenuity.

(10) Throughout his later philosophy Feyerabend developed a history of Western intellectual culture, from the ancient to the modern period. This included a sustained study of Ancient Greek philosophy. This history deserves sustained study, since it forms part of the wider 'conquest of abundance' narrative.

(11) The later Feyerabend is best understood as an attempt to provoke us to critically reflect on a series of interrelated questions about science, culture, and reality. Feyerabend is trying to provoke us to critically reflect; not to make (too many) positive claims. The later philosophy, is intended above all to serve a heuristic

> function; to offer us a new perspective upon global cultural and epistemic diversity. As Grazia Borrini-Feyerabend puts it, the later Feyerabend is 'not arguing nor striving to explain', but instead offers 'some questions and some stories [and] points at the abundance of Being' (Borrini-Feyerabend, 2000: xii).

Each of these claims could sustain further studies. Hopefully this thesis has succeeded in demonstrating that there is ample material and motivation for future studies of the later Feyerabend.

10.3 Feyerabend into the future.

It is worth briefly surveying the prospects for future studies of the later Feyerabend. Gratifyingly, the signs are encouraging. Interest in his work has been fairly constant since his death, although much of it suffers from the influence of the four charges rebutted in chapter one. Feyerabend remains a presence within the philosophy of science and his work is also still cited by anthropologists, development studies scholars, and others—including computer scientists. The last decade has also seen growing interest in Feyerabend amongst Italian, Spanish, and Eastern European philosophers; indeed, much of the recent literature on Feyerabend comes from philosophers based in those nations.[149]

The next five years will see the publication of a host of new 'Feyerabendiana'. These include volume four of his philosophical papers, entitled *Physics and Philosophy* (Feyerabend forthcoming a), currently being edited by Stefano Gattei and Joseph Agassi, collecting together Feyerabend's early work in history and philosophy of quantum theory. The early 1990s lecture series *Conflict and Harmony* (Feyerabend 2011) was published in English, having been unfortunately re-titled *The Tyranny of Science* (see Kidd forthcoming a). The *Introduction to the Philosophy of Nature* (Feyerabend 2009) has appeared in German to positive reviews in both the academic and popular press and is currently awaiting an English translation. Finally, Feyerabend's correspondence with Kuhn, Popper, and John Watkins is currently being edited and prepared and should provide new personal and philosophical insights into his life and work—and theirs. There is also scholarly potential for a sustained study of *Conquest of Abundance* and the later philosophy at large, including developed accounts of Feyerabend's discussions of epistemic pluralism, cultural diversity, the history of Western intellectual culture, ancient Greek thought and culture, the relationship between the arts and sciences, and the influence upon his work of Pseudo-Dionysius, David Bohm (1957), and the Dadaists, amongst others. These topics have been almost entirely neglected by the scholarship, much to the detriment of our understanding of the breadth and depth of Feyerabend's thought. This thesis has hopefully helped to provide the basis for future studies of these various topics and in encouraging interest in them.

There are also good philosophical reasons for an engagement with the later Feyerabend. Many of the topics and themes of his later work resonate with

[149] See, for instance, Adam (2001), Casamonti (2002), Civit (2008), Dauksa (2008), Dos Santos Terra (2008) and Tambolo (2007).

contemporary debates within the history and philosophy of science. Feyerabend was, I argued, a vigorous epistemic pluralist and this would locate him within the 'pluralistic turn' within the philosophy of science, as represented by figures such as Chang, Dupré, and Giere.

Feyerabend engaged with issues in political and postcolonial philosophies of science, such as the work of Kitcher and Harding respectively, and he should enjoy a special significance because he is arguably the philosopher of science who has take the question of the value of science in the modern world seriously more than any other. (Indeed, Kitcher's next book is called *Science in a Democratic Society*, the title of which is a nod to Feyerabend's *Science in a Free Society*). Feyerabend's 'relativism' is still of relevance to contemporary relativists, such as Boghossian, and it will be discussed by philosophers of science who retain an interest in relativism, such as Martin Kusch (who is currently writing a history of relativism in nineteenth- and twentieth-century German thought within which Feyerabend will, Kusch tells me, feature).

There is also scope for a revised account of Feyerabend's place within the history of philosophy of science, both to correct the neglect of his later philosophy and to locate him within these wider antecedent developments. Finally, there are good opportunities for developing the connections that Feyerabend drew between history and philosophy of science, on the one hand, and anthropology, environmental and development studies, and other disciplines, on the other. This includes potential for the application of his later work to contemporary indigenous rights activist groups, postcolonial development theorists, and others involved in more overtly political activities. The prospects for future studies of Feyerabend are therefore very bright indeed.

10.4 Conclusions.

This thesis presented a study of the later philosophy of Paul Feyerabend. I argued that it consisted of a defence of cultural and epistemic pluralism which is continuous with his earlier work in scientific methodology. Despite rhetorical excess and occasional ambiguity, the later philosophy offers a coherent case for the claim that the continuing value of science depends upon our understanding of it. Previous failures to attain such understanding have resulted in political as well as philosophical problems and so there are urgent practical and moral as well as scholarly imperatives for us to pursue a 'critique of scientific reason'. A key outcome of such a 'critique' will be an appreciation of cultural and epistemic pluralism and their capacity to facilitate both the growth of knowledge and human wellbeing. The later Feyerabend therefore succeeded in presenting an optimistic and humane vision of cultural and epistemic pluralism, one which celebrates both the cross-cultural diversity of human interests and values and the 'richness of Being' it discloses.

Appendix I Recollections of Paul Feyerabend

These recollections are drawn from personal correspondence with former students and colleagues of Feyerabend and from various philosophical texts and autobiographies. All sources are cited and I offer my thanks to Alison and Donald for sharing their recollections.

Alison Assiter 'I am a former student of Paul Feyerabend. Following the B. Phil in Oxford I moved to Sussex to do my D. Phil there and he was around. He was a supreme actor. He would sit at the front of very large lecture theatres performing, for example, flat earth theory ... He would 'jump' (given his physical state that was difficult) from his desk and say, "look the earth can't be moving because I would not have landed vertically below the place I jumped from if it were". He was also frustrating in seminars because he would say something and you would make a point against it (as you were supposed to!) and he would say: "oh well, I said that a few minutes ago, I no longer think it".' (per comm 8th March 2010)

Donald Gillies 'I met Paul Feyerabend not long after I had started (in the autumn of 1966) as a PhD student, and was working with Imre Lakatos as my supervisor in the LSE department of philosophy, of which Sir Karl Popper was then the head. At the time Paul Feyerabend was very famous and fashionable. He had at least 3 different academic posts, including one at University College London. When in London, he would come frequently to LSE since he was very friendly towards Imre Lakatos with whom he enjoyed discussing philosophy. In fact he gave his principal London lectures in LSE rather than UCL. These were perhaps the most brilliant lectures which I ever attended. Feyerabend had originally wanted a career as a performer either in the theatre or in Opera, and he gave his lectures with all the skill of a consummate actor. The theme of the lectures was that during the period of the Copernican revolution (Copernicus to Newton), witchcraft was much more rational than science. Feyerabend quoted the theory of witchcraft from a 17th [sic: 15th] century book on the subject: *Malleus Maleficarum*, which then was only available in Latin though it has subsequently I believe been translated into English. He would translate a passage from this book, and then compare it with a passage from e.g. Galileo. He would try to show that the authors of *Malleus Maleficarum* argue in a much more rational fashion with more attention to the empirical evidence than does Galileo. Imre Lakatos would sit at the back of these lectures, but, every so often, he could no longer control himself. He would then exclaim: "Oh Paul! How can you say such a thing!" and then proceed to criticize Feyerabend's thesis forcefully. Feyerabend was very skilled at argument, however, and could usually get the better of Imre Lakatos, or at least hold his own. At a personal level, Feyerabend always struck me as a very kind man. He was always helpful to students and was an accessible person who would be prepared to make himself available to students for discussion and answering questions, even though he

was a world star at the time. His behaviour in this respect was very different from that of other academic stars I have known subsequently. I remember that on one occasion I gave a student party in a (not very salubrious) flat I was sharing with several other students. I invited Imre Lakatos who was my supervisor, and he and Paul Feyerabend both came. I remember sitting on the sofa with Paul Feyerabend who was very interested in Marshall McLuhan at the time and told me what he thought were the philosophical implications of McLuhan's work.' (per comm 26th June 2008)

Geoff Jordan 'Feyerabend was enormously charismatic and persuasive … I was at LSE when Feyerabend gave a series of lectures ostensibly for "freshers"—first year undergraduates like myself—as an introduction to scientific method. People travelled from far and wide to attend these lectures and there were often scuffles to get into the Old Theatre, which was packed an hour before the lectures were scheduled to begin. Feyerabend began his first lecture by using the enormously long blackboard in the Old Theatre to wonderful theatrical effect. He took a piece of chalk and starting at the left-hand side of the blackboard, dragged the chalk along the blackboard making a line. (He had quite a bad limp which made it even more dramatic.) When he got half way across, he stopped and lifted the chalk. Half a centimetre later, he continued the line until he got to the end of the blackboard. Then he strode back to the tiny gap in the line, thumped it and bellowed "THAT is Popper's contribution to the philosophy of science!" He was equally enthralling when he sat in LSE's Three Tuns Bar, good-naturedly and passionately arguing about science and politics with anyone else who could get a seat at the crowded table.' (Jordan, 2004: 49n13)

John Krige 'Sussex University: the start of Autumn Term, 1974. There was not a seat to be had in the biggest Arts lecture theatre on campus. Taut with anticipation, we waited expectantly and impatiently for the advertised event to begin. He was not on time—as usual. In fact rumour had it that he would not be appearing at all, that illness (or was it just *ennui*? or perhaps a mistress?) had confined him to bed. But just as we began sadly to reconcile ourselves to the idea that there would be no performance that day, Paul Feyerabend burst through the door at the front of the packed hall. Rather pale, and supporting himself on a small metal crutch, he walked with a limp across to the blackboard. Removing his sweater he picked up the chalk and wrote down three questions one beneath the other. What's so great about knowledge? What's so great about science? what's so great about truth? We were not going to be disappointed after all! … [He] brought the house down by writing "Aristotle" in three-foot high letters on the blackboard and then writing "Popper" in tiny, virtually illegible letters beneath it!' (Krige: 1980: 106-107))

Karin Knorr-Cetina 'I went to his lectures [at Berkeley]. He was supportive. But Feyerabend at that time was a curious fellow. I had already met him in Vienna before. It was very difficult to have an intellectual discussion with him. He didn't seem interested. He put his own philosophy into practice and he seemed interested only in pleasure. He was no longer interested in intellectual discussions with newcomers or

with anybody, it seemed (Lakatos had already died). Still Feyerabend was a very interesting experience for me because he was very committed to his historical materials and he gave fascinating lectures on it. But you could not get into a discussion with him; he refused to do that.' (quoted in Bechtel and Callebaut, 1993:109)

Appendix II Further Reading on Indigenous Cultures

Feyerabend often discussed indigenous cultures. *Farewell to Reason* and the third edition of *Against Method* are the best sources for his remarks on indigenous cultures and international development. Feyerabend's discussions generally fall into two kinds. Firstly, there is documentation of the efficacy of indigenous medical, environmental, agricultural and classificatory systems. These are pertinent to the discussion in Chapter four about the presumption of the omnicompetence of science. That Chapter dealt with the philosophical arguments against that presumption, but it is worth adding some literature which provides empirical support for Feyerabend's claims about the efficacy of indigenous cultures. Secondly, Feyerabend often discusses the 'disenfranchisement' of indigenous practices, systems, and cultures. This relates to his ethical and political concerns about the dissolution of global cultural diversity.

The following is a condensed bibliography of further sources, which readers interested in the empirical support for such claims might turn. For convenience, I divide them into 'Efficacy' and 'Disenfranchisement'. For both of these themes, the work of Sandra Harding (1998; 2006; 2008; forthcoming) is indispensable as a source both of further reading and philosophical discussion.

II.1 Efficacy

Anthropologists and other scholars have provided enormous documentation on the beliefs, practices, and systems of knowledge generated by world cultures. The general scholarly issues are discussed by Brouwer (1998).

The relationships between 'traditional' and 'Western' medicine is disussed by Bodeker (2007), Cant and Sharma (1999), Lock and Nichter (2002) and Strathern and Stewart (1999). The historical context is provided by Bynum *et al* (2006), Digby (2006). Much of the best literature is being provided by historians of colonial medicine, such as Crozier (2007), De Barros (2007), Harrison (1999), Lyons (2007), MacLeod (1988), Palit and Dutta (2005) and Sutphen and Andrews (2003). The philosophical issues concerning medical pluralism are discussed by Kidd (forthcoming f) and Parusnikova (2002), and there is useful material in Singh and Ernst (2008).

Feyerabend's credentials as an environmental philosopher are defended by the later Arne Naess (1991)—himself an eminent environmental philosopher—and Devall (1999). The efficacy of traditional environmental knowledge is discussed and defended by Brunbacher and McGregor (1998), Dudgeon and Berkes (2003), Ellen and Harris (2004), the Gwich'in Elders (1997), Johnson (1992), McGregor (2004), Milton (1998), Roberts (1996), Sanga and Ortalli (2004), Selin (2003), Stevenson (1999). The historical perspective is detailed by Schibeinger and Swan (2007).

II.2 Disenfranchisement

There is an enormous literature on the historical, moral, political, and legal aspects of the often-detrimental relationships between 'Western' and 'non-Western' cultures. These range from specific anthropological case studies of particular tribes, to more

expansive historical narratives, with much else besides. An invaluable resource is Blaser, Feit, and McRae (2004). Fricker's (2007) idea of 'epistemic injustice' could be usefully applied to the disenfranchisement of indigenous knowledge and cultures. See also Giuilio (2004). The history is treated in the essays in Delbourgo and Dew (2008), Jacob (2008) and Pratt (2008). The political and legal issues regarding indigenous peoples are discussed in Gray (2002), Keal (2003), and Shiva (1989). Shiva (1993) also discusses the general philosophical and practical issues regarding cultural and epistemic pluralism, and Spivak (1999) offers an engaging 'postcolonial critique'.

These suggestions for further reading do not reflect the enormous diversity of literature on this topic. The items included are, notably, primarily academic works, and do not include the testimonial literature provided by indigenous peoples themselves. This is something that Feyerabend would certainly disapprove of, but hopefully this omission may be addressed in future studies.

Bibliography

'A.N.' (2001) 'Review of Preston, Munévar, and Lamb [2000]'. *Ethics* 112/1: 197-198.

'R.H.S' (1981) 'Review of Feyerabend [1978a]', *The Review of Metaphysics* 35/2: 383-385.

Achinstein, Peter (2000) 'Proliferation: Is It A Good Thing?', in Preston, Munévar, and Lamb (eds.), 37-46.

Adam, Andrej (2001) 'Feyerabend and Critical Rationalism', in Slovenian, *Analiza: casopis za kriticno misel* 5/1-2: 140-160.

Agassi, Joseph (1995) 'Contemporary Philosophy of Science as a Thinly Masked Antidemocratic Apologetics', in Kostas Gavroglou, John J. Stachel, and Marx W. Wartofsky (eds.), *Science, Mind, and Art: Essays on Science and the Humanistic Understanding in Art, Epistemology, Religion and Ethics in Honour of Robert S. Cohen*, *Boston Studies in the Philosophy of Science* vol. 165. Dordrecht: Kluwer, 153-170.

Agassi, Joseph (2002) 'A Touch of Malice', review of Feyerabend and Lakatos [1999], *Philosophy of the Social Sciences* 32/1: 107-119.

Alford, C. Fred (1985) 'Epistemological Relativism & Political Theory: The Case of Paul K. Feyerabend', *Polity* 18/2: 204-223.

Andre, Judith (2002) 'Humility', in Hugh LaFollette (ed.), *Ethics in Practice: An Anthology* , 2nd ed. (Oxford: Wiley-Blackwell), 276-284.

Anscombe, G.E.M. (1958) 'Modern Moral Philosophy', *Philosophy* 33: 1-19.

Ashman, Keith and Philip Shively Baringer 2000) *After the Science Wars*. London: Routledge.

Atran, Scott and Douglas Medin (2008) *The Native Mind and the Cultural Construction of Nature*. Massachusetts: MIT Press.

Ayer, A.J. (1936) *Language, Truth, and Logic*. London: Gollancz.

Bechtel, William and Werner Callebaut (1993) *Taking the Naturalistic Turn: Or, How Real Philosophy of Science is Done*. Chicago: University of Chicago Press.

Ben-Israel, Isaac (2001) 'Philosophy and Methodology of Military Intelligence: Correspondence with Paul Feyerabend', *Philosophia* 28/1-4: 71-101.

Berlin, Isaiah (1958) *Two Concepts of Liberty*. Oxford: Clarendon.

Berlin, Isaiah (1999) *The Roots of Romanticism: The A.W. Mellon Lectures in Fine Art, 1965*, Henry Harding (ed.) London: Chatto and Windus.

Bird, Alexander (2008) 'The Historical Turn in the Philosophy of Science', in Stathis Psillos and Martin Curd (eds.), *Routledge Companion to the Philosophy of Science*. Abingdon: Routledge (2008), 67-77.

Blackburn, Simon (1993) *Essays in Quasi-Realism*. Oxford: Oxford University Press.

Blackburn, Simon (1998) *Ruling Passions: A Theory of Practical Reasoning*. Oxford: Oxford University Press.

Blaser, Mario, Harvey A. Feit, and Glenn McRae, Glenn (eds.) (2004) *In the Way of Development: Indigenous Peoples, Life Projects and Globalisation*. London: Zed Books.

Bodeker, Gerard (2007) 'Traditional Medical Knowledge and Twenty-first Century Healthcare: The Interface between Indigenous and Modern Science', in Paul Sillitoe (ed.), *Local Science vs. Global Science: Approaches to Indigenous Knowledge in International Development*. New York: Berghahn Books, 23-39.

Boghossian, Paul (2006) *Fear of Knowledge: Against Relativism and Constructivism*. Oxford: Oxford University Press.

Bohm, David (1957) *Causality and Chance in Modern Physics*. London: Routledge and Kegan Paul.

Bok, Bart J., Lawrence E. Jerome, and Paul Kurtz (1975) 'Objections to Astrology: A Statement by 185 Leading Scientists', *The Humanist* 35/5 (September-October), 4-6, reprinted in P. Grim (1990) *Philosophy of Science and the Occult*, 2nd ed. New York: State University of New York Press, 8-22.

Borgmann, Albert (2007) 'Technology', in Dreyfus and Wrathall (eds.), 420-432.

Borrini-Feyerabend, Grazia (2001) 'Preface and Acknowledgements', in Feyerabend, ix-xiii.

Bradley, Francis Herbert (1893/2000) '*Appearance and Reality*, Chapters 13 and 14', excerpted in David E. Cooper (ed.), *Metaphysics: The Classic Readings*. Oxford: Wiley-Blackwell, 223-230.

Broad, William J. (1979) 'Paul Feyerabend: Science and the Anarchist', *Science* 206/4418: 534-537.

Broedel, Hans Peter (2003) *The* Malleus Malleficarum *and the Construction of Witchcraft: Theology and Popular Belief*. Manchester: Manchester University Press.

Brouwer, Jan (1998) 'On Indigenous Knowledge and Development', *Current Anthropology* 39/3: 351.

Brown, Theodore L. (2009) *Imperfect Oracle: The Epistemic and Moral Authority of Science*. Pennsylvania: Pennsylvania State University Press.

Brubacher, Doug and McGregor, Deborah (1998) 'Aboriginal Forest-Related Traditional Ecological Knowledge in Canada', contribution to the 19th Session of the North American Forest Commission, Villahermosa, Mexico, 16-20 November 1998, Ottawa, ON: National Aboriginal Forestry Association for the Canadian Forest Service.

Bynum, W.F., Anne Hardy, Stephen Jacyna, Christopher Lawrence, and E.M. (Tilli) Tansey (2006) *The Western Medical Tradition, 1800 to 2000*. Cambridge: Cambridge University Press.

Cant, Sarah and Ursula Sharma (1999) *A New Medical Pluralism? Alternative Medicine, Doctors, Patients, and the State*. London: Taylor and Francis.

Carrier, Martin, Gerald J. Massey and Laura Reutsche (eds.) (2000) *Science at Century's End: Philosophical Questions on the Progress and Limits of Science*. Pittsburgh: University of Pittsburgh Press.

Cartwright, Nancy (1999) *The Dappled World: A Study of the Boundaries of Science*. Cambridge: Cambridge University Press.

Cartwright, Nancy, Jordi Cat, Lola Fleck and Thomas E. Uebel (1996) *Otto Neurath: Philosophy between Science and Politics*. Cambridge: Cambridge University Press.

Casamonti, Michele (2002) 'Mach e Feyerabend', *Rivista di Estetica* 42:3: 86-117.

Chang, Hasok (2004) *Inventing Temperature: Measurement and Scientific Progress*. Oxford: Oxford University Press.

Chang, Hasok (2009) 'Ontological Principles and the Intelligibility of Epistemic Activities', in Henk W. de Regt, Sabina Leonelli, and Kai Eigner (eds.), *Scientific Understanding: Philosophical Perspectives*. Pittsburgh: University of Pittsburgh Press, 64-82.

Chang, Hasok (2010) 'A Case for Pluralism in Science', paper delivered at a meeting of the British Society for the Philosophy of Science, 1 March 2010.

Chang, Hasok (forthcoming) *Is Water H_20? Evidence, Realism, and Pluralism*, *Boston Studies in the Philosophy of Science*.

Civit, Jesus (2008) 'El anarquismo de Feyerabend Disquisiciones en torno a una mascara', *Logoi: Revista de Filosofia* 14: 47-79.

Clark, Stephen R.L. (1980) 'Review of Feyerabend [1978a]', *The Philosophical Quarterly* 30/119: 172-174.

Clark, Stephen R.L. (2002) 'Feyerabend's *Conquest of Abundance*', *Inquiry* 45/2: 249-267.

Collins, Harry and Trevor Pinch (1998) *The Golem: What You Should Know About Science*, 2nd ed. Cambridge: Cambridge University Press.

Cooper David E. (2009) 'Visions of Philosophy', in Anthony O'Hear (ed.), *Conceptions of Philosophy*, *Royal Institute of Philosophy Supplement* 65 2009: 1-13.

Cooper, David E. (1992) 'The Idea of Environment', in David E. Cooper and Joy A. Palmer (eds.), *The Environment in Question: Ethics and Global Issues*. London: Routledge, 165-180.

Cooper, David E. (1998) *Ethics: The Classic Readings*. Oxford: Wiley-Blackwell.

Cooper, David E. (2000) 'Voodoo and the Monster of Science', review of Feyerabend [1999b], *Times Higher Education Supplement* (17 March), n.p.

Cooper, David E. (2002) *The Measure of Things: Humanism, Humility, and Mystery*. Oxford: Clarendon Press.

Cooper, David E. (2003) *World Philosophies: An Historical Introduction*. Oxford: Blackwell.

Cooper, David E. (2006) 'Truthfulness and 'Inclusion' in Archaeology', in Scarre and Scarre (eds.), 131-145.

Corrigan, Kevin and L. Michael Harrington (2004) 'Pseudo-Dionysius the Areopagite', *Stanford Encyclopaedia of Philosophy*, Edward N Zalta (ed.), http://plato.stanford.edu/entries/pseudo-dionysius-areopagite/

Cottingham, John (2009) 'What is Humane Philosophy and Why is it At Risk?', in Anthony O'Hear (ed.), *Conceptions of Philosophy*, *Royal Institute of Philosophy Supplement* 65, 233-255.

Crozier, Anne (2007) *Practising Colonial Medicine: The Colonial Medical Service in British East Africa*. London: I.B. Tauris.

Crystal, David (2002) *Language Death*. Cambridge: Cambridge University Press.

Cushing, James T. (1994) *Quantum Mechanics: Historical Contingency and the Copenhagen Interpretation*. Chicago: University of Chicago Press.

Daston, Lorraine (2000b) 'The Coming into Being of Scientific Objects', in Daston (ed.), 1-14.

Daston, Lorraine (ed.) (2000a) *Biographies of Scientific Objects*. London: University of Chicago Press.

Daston, Lorraine and Peter Galison (2007) *Objectivity*. New York: Zone Books.

Dauksa, Tomas (2008) 'How the New Is Born in Science? (Attitude of Feyerabend's Philosophy of Science)', in Lithuanian, *Logos: Religijos, filosofijos, komparatyvistikos ir meno urnalas* 57: 190-195.

Davidson, Donald (1974) 'On the Very Idea of a Conceptual Scheme', *Proceedings and Addresses of the American Philosophical Association* 47: 5-20.

De Barros, Juanita (2007) 'Deba Dispensers, *Obeah* and Quackery: Medical Rivalries in Post-Slavery British Guiana', *Social History of Medicine* 20: 243-261.

Denby, David (2005) 'Herder: Culture, Anthropology, and the Enlightenment', *History of the Human Sciences* 18/1:55-76.

Devall, Bill (1999) 'Comment: Naess and Feyerabend on Science', in N. Witoszek and A. Brennan (eds.), *Philosophical Dialogues: Arne Naess and the Progress of Philosophy*. Oxford: Rowman and Littlefield, 69-71.

Devitt, Michael (2008) 'Realism/Antirealism', in Stathis Psillos and Martin Curd (eds.), *The Routledge Companion to Philosophy of Science*, London: Routledge, 224-247.

Digby, Anne (2006) *Diversity and Division in Medicine: Health Care in South Africa from the 1800s*. Oxford: Peter Lang.

Dixon, Thomas (2008) *Science and Religion: A Very Short Introduction*. Oxford: Oxford University Press.

Dos Santos Terra, Paulo (2008) 'A proposito da condenacao de Feyerabend em Roma por causa de suas ideias sobre o conflito entre a Igreja e Galileu', *Scientiae Studia: Revista Latino-Americana de Filosofia e Historia da Ciencia* 6(4): 665-679

Douglas, Heather E. (2009) *Science, Policy, and the Value-Free Ideal*. Pittsburgh: Pittsburgh University Press.

Downes, Stephen. (2002) 'Review of Feyerabend [1999b] and Preston, Munévar, and Lamb [2000]', *Science, Technology, and Human Values* 27: 160-164.

Dudgeon, Roy C. and Fikret Berkes (2003) 'Local Understandings of the Land: Traditional Ecological Knowledge and Indigenous Knowledge', in Selin (ed.), 75-96.

Dupré, John (1993) *The Disorder of Things: Metaphysical Foundations of the Disunity of Science*. Cambridge, Mass.: Harvard University Press.

Dupré, John (1999) 'Are Whales Fish?', in Medin and Atran (eds.), 461-476.

Dupré, John (2002) 'The Lure of the Simplistic', *Philosophy of Science* 69/3, Supplement. Proceedings of the 2000 Biennial Meeting of the Philosophy of Science Association. Part II: Symposia Papers, S284-S293.

Dupré, John (2003) *Human Nature and the Limits of Science*. Oxford: Oxford University Press.

Dupré, John (2006) *Humans and Other Animals*. Oxford: Oxford University Press.

Dupré, John (2007) 'Fact and Value', in Kincaid, Dupré, and Wylie (eds.), 27-43.

Ellen, Roy and Holly Harris (2004) 'Indigenous Environmental Knowledge, the History of Science and the Discourse of Development', in Sanga and Ortalli, 297-300.

Ellis, Brian (1990) *Truth and Objectivity*. Oxford: Basil Blackwell.

Fanon, Franz (1968) *The Wretched of the Earth*, (trans.) C. Farrington. New York: Grove.

Farrell, Robert (2003) *Feyerabend and Scientific Values: Tightrope-Walking Rationality*. Dordrecht: Kluwer.

Farrell, Robert P. (2001) 'Feyerabend's Metaphysics: Process-Realism, or Voluntarist-Idealism?', *Journal for General Philosophy of Science* 32/2: 351-369.

Feyerabend, Paul (1955) 'Wittgenstein's *Philosophical Investigations*', *Philosophical Review* 64/3: 449-483.

Feyerabend, Paul (1960) 'Professor Bohm's Philosophy of Nature', review of Bohm [1957], *British Journal for the Philosophy of Science* 10: 321-338.

Feyerabend, Paul (1961) 'Knowledge without Foundations', two lectures delivered on the Nellie Heldt Lecture Fund, Oberlin College, Ohio, reprinted in Feyerabend (1999a: Ch2).

Feyerabend, Paul (1967) 'On the Improvement of the Sciences and the Arts, and the Possible Identity of the Two', in Robert S. Cohen and Marx W. Wartofsky (eds.), *Proceedings of the Boston Colloquium for the Philosophy of Science, 1964-66: In Memory of Norwood Russell Hanson*, *Boston Studies in the Philosophy of Science* vol. 3. Dordrecht: D. Reidel, 387-415.

Feyerabend, Paul (1968) 'Science, Freedom, and the Good Life', *Philosophical Forum* 1: 127-135.

Feyerabend, Paul (1970a) 'Against Method: Outline of an Anarchistic Theory of Knowledge', M. Radner and S. Winokur, eds., *Analysis of Theories and Methods of Physics and Psychology*, *Minnesota Studies in the Philosophy of Science*, vol. 4. Minneapolis: University of Minnesota Press, 17-130.

Feyerabend, Paul (1970b) 'Philosophy of Science—A Subject with a Great Past', in R.H. Steuwer (ed.), *Historical and Philosophical Perspectives on Science*, *Minnesota Studies in the Philosophy of Science*, vol. 5. Minneapolis: University of Minnesota Press, 172-183.

Feyerabend, Paul (1970c) 'Experts in a Free Society', *The Critic* 29: 58-69).

Feyerabend, Paul (1970d) 'Consolations for the Specialist', in Imre Lakatos and Alan Musgrave (eds.), *Criticism and the Growth of Knowledge*. Cambridge: Cambridge University Press, 197–230.

Feyerabend, Paul (1973) 'Die Wissenschaftstheorie—eine bisher unbekannte Form des Irrsins', in W. Akten des X Deutschen Kongress für Philosophie. Hamburg.

Feyerabend, Paul (1975a) *Against Method: Outline of an Anarchistic Theory of Knowledge*, 1st ed. (London: New Left Books).

Feyerabend, Paul (1975b) 'Imré Lakatos', *British Journal for the Philosophy of Science* 26/1: 1-18.

Feyerabend, Paul (1975c) 'How to Defend Society Against Science', *Radical Philosophy* 11: 3-8.

Feyerabend, Paul (1976a) 'Logic, Literacy, and Professor Gellner', *British Journal of the Philosophy of Science* 27/4: 381-391.

Feyerabend, Paul (1976b) 'On the Critique of Scientific Reason', in Robert Cohen, Paul Feyerabend, and Marx Wartofsky (eds.), *Essays in Memory of Imré Lakatos*, *Boston Studies in the Philosophy of Science* 39. Dordrecht: Springer, 109-143.

Feyerabend, Paul (1977) 'Marxist Fairytales From Australia', *Inquiry* 20/2-3: 372-397.

Feyerabend, Paul (1978a) *Science in a Free Society*. London: New Left.

Feyerabend, Paul (1978b) 'Life at the LSE?', *Erkenntis* 13/2: 297-304. (Author listed as 'Fantomas').

Feyerabend, Paul (1978c) 'From Incompetent Professionalism to Professionalised Incompetence—The Rise of a New Breed of Intellectuals', *Philosophy of the Social Sciences* 8/1: 37-53.

Feyerabend, Paul (1981a) *Realism, Rationalism, and Scientific Method*, *Philosophical Papers* vol. 1 (Cambridge: University of Cambridge Press).

Feyerabend, Paul (1981b) *Problems of Empiricism*, *Philosophical Papers* vol. 2 (Cambridge: University of Cambridge Press).

Feyerabend, Paul (1982) 'Academic Ratiofascism: Comments on Tibor Machan's Review', *Philosophy of the Social Sciences* 12: 191-195.

Feyerabend, Paul (1987) *Farewell to Reason*. London: Verso.

Feyerabend, Paul (1988) *Against Method*, 2nd ed. London: Verso.

Feyerabend, Paul (1991a) *Three Dialogues on Knowledge.* Oxford: Basil Blackwell.

Feyerabend, Paul (1991b) 'Concluding Unphilosophical Conversation', in Munévar (ed.), 433-448.

Feyerabend, Paul (1993) *Against Method: Outline of an Anarchistic Theory of Knowledge*, 3rd ed. London: Verso.

Feyerabend, Paul (1994a) 'Concerning an Appeal for Philosophy', *Common Knowledge* 3: 10-13.

Feyerabend, Paul (1994b) 'The End of Epistemology', in Robert S. Cohen and Larry Laudan (eds.), *Physics, Philosophy, and Psychoanalysis: Essays in Honour of Adolf Grunbaum*, *Boston Studies in the Philosophy of Science* vol. 76. Dordrecht: D. Reidel, 187-204.

Feyerabend, Paul (1994c) 'Not a Philosopher', in David D. Karnos and Robert G. Shoemaker, eds., *Falling in Love with Wisdom: American Philosophers Talk about Their Calling*, Oxford: Oxford University Press, 16-17.

Feyerabend, Paul (1995) *Killing Time: The Autobiography of Paul Feyerabend*. Chicago: Universdity of Chicago Press.

Feyerabend, Paul (1998) *Widerstreit und Harmonie: Trentiner Vorlesungen*, Peter Engelmann (ed.) Vienna: Passagen.

Feyerabend, Paul (1999a) *Knowledge, Science, and Relativism*, *Philosophical Papers* vol. 3, John Preston (ed.) Cambridge: Cambridge University Press.

Feyerabend, Paul (1999b) *Conquest of Abundance: A Tale of Abstraction versus the Richness of Being*, Bert Terpstra (ed.) Chicago: University of Chicago Press, hb.

Feyerabend, Paul (2000a) 'Paul K. Feyerabend: Last Interview', conducted by Joachim Jung, in Preston, Munévar, and Lamb (eds.), 159-168.

Feyerabend, Paul (2000b) 'Letter to the Reader', in Hacking [2000], 28, reprinted in Feyerabend [2010], xv-xvi.

Feyerabend, Paul (2001) *Conquest of Abundance: A Tale of Abstraction versus the Richness of Being*, Bert Terpstra (ed.) Chicago: University of Chicago Press, pb.

Feyerabend, Paul (2009) *Einführung in die Naturphilosophie*, Helmut Heit and Eric Oberheim (eds.) Frankfurt am Main: Suhrkamp Verlag.

Feyerabend, Paul (2010) *Against Method*, 4th ed., introduced by Ian Hacking. London: Verso.

Feyerabend, Paul (2011) *The Tyranny of Science*, trans. Eric Oberheim. Cambridge: Polity Press.

Feyerabend, Paul (forthcoming a) *Philosophy and Physics*, *Philosophical Papers* vol. 4, Stefano Gattei and Joseph Agassi (eds.) Cambridge: Cambridge University Press.

Feyerabend, Paul and Imre Lakatos (1999) *For and Against Method: Including Lakatos' Lectures on Scientific Method and the Lakatos-Feyerabend Correspondence*, Matteo Motterlini (ed.) Chicago: University of Chicago Press.

Flint, Karen (2001) 'Competition, Race, and Professionalization: African Healers and White Medical Practitioners in Natal', *Social History of Medicine* 14: 199-221.

Foucault, Michel (1966) *Les mots et les choses: une archeologie des sciences humaines*. Paris: Gallimard.

Foucault, Michel (2003) *Society Must Be Defended: Lectures at the Collège de France, 1975-1976.* London: Penguin.

Freese, Lee (1980) 'Review of Feyerabend [1978a]', *Contemporary Sociology* 9/3: 412-413.

Fricker, Miranda (2007) *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford: Oxford University Press.

Fricker, Miranda (2010) 'Can There Be Institutional Virtues?', in Tamar Szabo Gendler and John Hawthorne (eds.), *Oxford Studies in Epistemology*, vol. 3. Oxford: Oxford University Press, 235-252.

Fuller, Steve (2000) *Thomas Kuhn: A Philosophical History for our Times*. Chicago: University of Chicago Press.

Galison, Peter and David J. Stump (1996) *The Disunity of Science: Boundaries, Contexts, and Power*. Stanford: Stanford University Press.

Gaukroger, Stephen (2006) *The Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210-1685*. Oxford: Oxford University Press.

Gaus, Gerald (2010) 'Liberalism', in *The Stanford Encyclopedia of Philosophy Fall 2010 Edition,* Edward N. Zalta (ed.), <http://plato.stanford.edu/archives/fall2010/entries/liberalism/>.

Geertz, Clifford (2001) *Available Light: Anthropological Reflections on Philosophical Topics.* Princeton: Princeton University Press.

Gellner, Ernest (1975) 'Review of Feyerabend [1975]', *British Journal for the Philosophy of Science* 26/4: 331-342.

Gergen, Kenneth J. (1986) 'Freedom Without Foundations', review of Feyerabend [1978a], *New Ideas in Psychology* 4/1: 119-214.

Gersh, Stephen (1978) *From Iamblichus to Eriugena: An Investigation of the Prehistory and Evolution of the Pseudo-Dionysian Tradition*. Leiden: Brill.

Giere, Ronald N. (2006a) *Scientific Perspectivism*. Chicago: University of Chicago Press.

Giere, Ronald N. (2006b) 'Perspectival Pluralism', in Kellert, Longino, and Waters (eds.), *Scientific Pluralism*, *Minnesota Studies in Philosophy of Science* vol. 29 Minneapolis: University of Minnesota Press, 26-41.

Giulio, Angioni, (2004) 'Indigenous Knowledge: Subordination and Localism', in Sanga and Ortalli, 287-296.

Godfrey-Smith, Peter (2001) *Theory and Reality: An Introduction to the Philosophy of Science*. Chicago: University of Chicago Press.

Gower, Barry (1997) *Scientific Method: An Historical and Philosophical Introduction*. London: Routledge.

Gray, Andrew (2002) *Indigenous Rights and Development: Self-Determination in an Amazonian Community*. Oxford: Berghahn Books.

Gray, John (1996) *Mill on Liberty: A Defence*, 2nd ed. London: Routledge.

Guignon, Charles (2007) 'The History of Being', in Dreyfus and Wrathall (eds.), 392-406

Gutting, Gary (ed.) 2005. *Continental Philosophy of Science*. Oxford: Blackwell.

Gwich'in Elders (1997) *Nanh'Kak Geenjit Gwich'in Ginjik: Gwich'in Words about the Land*, Inuvik, NT: Gwich'in Renewable Resource Board.

Hacking, Ian (1994) 'Paul Feyerabend, Humanist', *Common Knowledge* 3:23-38.

Hacking, Ian (1999) *The Social Construction of What?* Cambridge, Mass.: Harvard University Press.

Hacking, Ian (2000) 'Screw You, I'm Going Home', review of Feyerabend [1999b], *London Review of Books* (22 June), 28-29.

Hadot, Pierre (1995) *Philosophy as a Way of Life: Spiritual Exercises from Socrates to Foucault*, trans. Michael Chase. Oxford: Blackwell.

Hansen, Chad (2000) *A Daoist Theory of Chinese Thought: A Philosophical Interpretation*. Oxford: Oxford University Press.

Harding, Sandra (1986) *The Science Question in Feminism*. Ithaca: Cornell University Press.

Harding, Sandra (1991) *Whose Science? Whose Knowledge? Thinking from Women's Lives*. Ithaca: Cornell University Press.

Harding, Sandra (1998) *Is Science Multicultural?:Postcolonialisms, Feminisms, and Epistemologies*. Bloomington: Indiana University Press.

Harding, Sandra (2006) *Science and Social Inequality: Feminist and Postcolonial Issues*. Champaign: University of Illinois Press.

Harding, Sandra (2008). *Sciences From Below: Feminisms, Postcolonialities, Modernities*. Duke University Press.

Harré, Rom (1977) 'Review of Feyerabend [1975a]', *Mind* 86: 294-298.

Harrison, Mark (1999) *Climates and Constitutions: Health, Race, Environment, and British Imperialism in India*. Oxford: Oxford University Press.

Hattiangadi, Jagdish N. (2000) 'Two Concepts of Political Tolerance', in Preston, Munévar, and Lamb (eds.), 125-147.

Havel, Václav (1992) *Open Letters: Selected Writings 1964–1990*, Paul Wilson (ed.) New York: Knopf.

Heidegger, Martin (1962) *Being and Time*, trans. John Macquarrie and Edward Robinson. Oxford: Basil Blackwell.

Heidegger, Martin (1977) *The Question Concerning Technology, and Other Essays*, trans. William Lovitt. London: Harper.

Heisenberg, Werner (2007) *Physics and Philosophy: The Revolution in Modern Physics*. New York: Harper Perennial.

Heit, Helmut and Eric Oberheim (2009) 'Paul Feyerabend als historischer Naturphilosoph', in Feyerabend (2009), 3-15.

Hentschel, Klaus (1985) 'On Feyerabend's Version of 'Mach's Theory of Research and its Relation to Einstein'', *Studies in History and Philosophy of Science* 16/4: 387-394.

Horgan, John (1993) 'Profile: Paul Karl Feyerabend', *Science* 268/5: 36-37.

Horgan, John (1997) *The End of Science: Facing the Limits of Knowledge in the Twilight of the Scientific Age*. Reading, Mass.: Addison-Wesley.

Hoyningen-Huene, Paul (2000) 'Paul K. Feyerabend: An Obituary', in Preston, Munévar, and Lamb, 3-15.

Hoyningen-Huene, Paul (2006) 'More Letter by Paul Feyerabend to Thomas S. Kuhn on *Proto-Structure*', *Studies in History and Philosophy of Science*, 37/4: 610-632.

Husserl, Edmund (1970) *The Crisis of the European Sciences and Transcendental Phenomenology*, trans. D. Carr. Evanston: Northwestern University Press.

Hutto, Daniel D. (2002) 'Review of Feyerabend [1999b]', *Philosophical Investigations* 25/4: 365-370.

Ivanova, Milena (2010) 'Pierre Duhem's Good Sense as a Guide to Theory Choice', *Studies in History and Philosophy of Science* 41: 58-64.

Jacob, François (1982) *The Possible and the Actual*. Seattle and London: University of Washington Press.

Jacob, François (1982) *The Possible and the Actual*. Seattle: University of Washington Press.

Jacob, Margaret C. (2008) 'Afterword: Science, Global Capitalism, and the State', in Delbourgo and Dew (eds.), 333-244.

Jacobs, Struan (2003) 'Misunderstanding John Stuart Mill on Science: Paul Feyerabend's Bad Influence', *Social Science Journal* 40/2: 201-212.

James Delbourgo and Nicholas Dew (eds.) 2008. *Science and Empire in the Atlantic World*. London: Routledge.

Janowitz, Naomi (1991) 'Theories of Divine Names in Origen and Pseudo-Dionysius', *History of Religions* 30/4: 359-372.

Johnson, Martha (ed.) (1992) *Lore: Capturing Traditional Environmental Knowledge*, Ottawa, ON: Dene Cultural Institute and the International Development Research Centre.

Jones, Sir William (1784) *Discourse on the Institution of a Society for Inquiring into the History, Civil and Natural, the Antiquities, Arts, Sciences, and Literature of Asia*.

Kagan, Jerome (2009) *The Three Cultures: Natural Sciences, Social Sciences, and the Humanities in the 21st Century.* Cambridge: University of Cambridge Press.

Keal, Paul (2003) *European Conquest and the Rights of Indigenous Peoples: The Moral Backwardness of International Society*. Cambridge: Cambridge University Press.

Kekes, John (2000) *Pluralism in Philosophy: Changing the Subject*. Cornell: Cornell University Press.

Keller, Evelyn Fox (1985) *Reflections on Gender and Science*. New Haven: Yale University Press.

Keller, Evelyn Fox and Helen E. Longino (eds.) (1996) *Feminism and Science*. Oxford: Oxford University Press.

Kellert, Stephen, Helen Longino, and Ken Waters (eds.) (2006) *Scientific Pluralism*, Minnesota Studies in the Philosophy of Science 27. Minneapolis: University of Minnesota Press.

Kelly, Paul (2006) 'Liberalism and Epistemic Diversity: Mill's Sceptical Legacy', *Episteme: A Journal of Social Epistemology* 3/3: 248-265.

Kidd, Ian James (2008) 'Method in the Madness: Feyerabend's Philosophical Pluralism', *Metascience* vol. 17, pp.469-473.

Kidd, Ian James (2009a) 'Review of Daston and Galison [2007]', *Philosophy in Review* 29/3: 20-22.

Kidd, Ian James (2009b) Virtue Epistemology, Metametaphysics, and Philosophical Naturalism. *Proceedings of the Thirteenth Annual Conference of the British Postgraduate Philosophy Conference*, Michael Gabbay (ed.) (London: Kings College Press), pp.81-89.

Kidd, Ian James (2011a 'Objectivity, Abstraction, and the Individual: The Influence of Søren Kierkegaard on Paul Feyerabend', *Studies in History and Philosophy of Science* **42**: 125-134.

Kidd, Ian James (2011b) 'Pierre Duhem's Epistemic Aims and the Intellectual Virtue of Humility', *Studies in History and Philosophy of Science* **42**: 185-189.

Kidd, Ian James (forthcoming a) 'Feyerabend on the Tyranny of Science' *PLos Biology*.

Kidd, Ian James (forthcoming b) 'Review of Feyerabend [2010]', *British Journal for the History of Science*.

Kidd, Ian James (forthcoming c) 'Feyerabend, Pseudo-Dionysius, and the Ineffability of Reality', *Philosophia*.

Kidd, Ian James (forthcoming d) 'The True, the Good, and the Value of Science', *Philosophical Writings*.

Kidd, Ian James (forthcoming e) 'Feyerabend on the Ineffability of Reality', in Asa Kasher and Jeanne Diller (eds.), *Models of God and Other Ultimate Realities*. Dordrecht: Springer.

Kidd, Ian James (forthcoming f) 'A Pluralist Challenge to 'Integrative Medicine': Feyerabend and Popper on the Cognitive Value of Alternative Medicine', *Studies in History and Philosophy of Biological and Biomedical Sciences*, forthcoming.

Kidd, Ian James (forthcoming g) 'The contingency of science and the future of philosophy', in Eric Dietrich and Zach Weber (eds.), *Philosophy's Future*, special issue of *Essays in Philosophy*, vol. 12, no. 1.

Kincaid, Harold, John Dupré, and Alison Wylie (eds.) (2007) *Value-Free Science? Ideals and Illusions*. Oxford: Oxford University Press.

Kitcher, Philip (2001) *Science, Truth, and Democracy*. Oxford: Oxford University Press.

Kitcher, Philip (2008) 'Science, Religion, and Democracy', *Episteme: A Journal of Social Epistemology* 5/1: 5-18.

Koertge, Noretta (1980) 'Review of Feyerabend [1978a]', *British Journal for the Philosophy of Science* 31/4: 384-390.

Kosso, Peter (1992) *Reading the Book of Nature: An Introduction to the Philosophy of Science*. Cambridge: Cambridge University Press.

Kramer, Heinrich and Jacob Spenger (1484/1971) *The Malleus Malleficarum of Heinrich Kramer and Jacob Sprenger*, (trans.) Montague Summers. New York: Courier Dover.

Kuhn, Thomas (1962) *Structure of Scientific Revolutions*, 1st ed. Chicago: University of Chicago Press.

Kuhn, Thomas (1977) 'Objectivity, Value Judgment, and Theory Choice', in his *The Essential Tension*. Chicago: University of Chicago Press, 320-339.

Kuhn, Thomas (2000) *The Road Since Structure: Philosophical Essays, 1970-93*, James Conant and John Haugeland (ed.) Chicago: University of Chicago Press.

Kupperman, Joel (2006) *Six Myths About the Good Life: Thinking About What Has Value*. Cambridge: Hackett.

Latour, Bruno (1993) *We Have Never Been Modern*, trans. Catherine Porter. Cambridge, Mass.: Harvard University Press.

Lieberson, Jonathan (1977) 'Review of Feyerabend [1975]', *The Journal of Philosophy* 74/8: 482-492.

Lipton, Peter (2001) 'Kant on Wheels', essay review of Kuhn [2000] and Fuller [2000], *London Review of Books* 23/14: 30-31.

Lloyd, Elizabeth A. (1997) 'Feyerabend, Mill, and Pluralism', *Philosophy of Science* 64/4, Supplement. Proceedings of the 1996 Biennial Meetings of the Philosophy of Science Association. Part II: Symposia Papers, S396-S407.

Lock, Margaret and Mark Nichter (2002) 'From Documenting Medical Pluralism to Critical Interpretations of Globalised Health Knowledge, Policies, and Practices', in their (ed.) *New Horizons in Medical Anthropology: Essays in Honour of Charles Leslie*. London: Routledge, 1-34.

Longino, Helen E. (1990) Science as Social Knowledge: Values and Objectivity in Scientific Inquiry. Princeton : Princeton University Press.

Lyons, Maryinez (2007) 'The Power to Heal: African Medical Auxiliaries in Colonial Belgian Congo and Uganda', Social History of Medicine 20: 243-261.

MacIntyre, Alasdair (1995) *A Short History of Ethics: A History of Moral Philosophy from the Homeric Age to the Twentieth Century*. London: Routledge.

MacLeod, Roy M. (1988) 'Introduction', to Roy M. MacLeod and Milton James Lewis (eds.), *Disease, Medicine, and Empire: Perspectives on Western Medicine and the Experience of European Expansion*. London: Routledge, 1-18.

Marcel, Gabriel (1962) *Man against Mass Society*, trans. G.S. Fraser. Chicago: Henry Regnery Company.

Marturano, Antonio (2005) 'Non-Cognitivism in Ethics', *Internet Encyclopaedia of Philosophy*, http://www.iep.utm.edu/non-cogn/,accessed 24 March 2010.

McGinn, Colin (1993) *Problems in Philosophy: The Limits of Inquiry.* Oxford: Blackwell.

McGregor, Deborah (2004) 'Traditional Ecological Knowledge and Sustainable Development: Towards Coexistence', in Blaser, Feit, and McRae, 72-.

Medin, Douglas and Scott Atran (eds.) (1999) *Folkbiology*. Massachusetts: MIT Press, 461-476.

Mehta, Uday Singh (1999) *Liberalism and Empire: A Study in Nineteenth-Century British Liberal Thought.* Chicago: University of Chicago Press.

Merleau-Ponty, Maurice (1996) *Phenomenology of Perception*, trans. C. Smith. London: Routledge.

Meynell, Hugo (1978) 'Feyerabend's Method', *The Philosophical Quarterly* 28/112: 242-252.

Midgley, Mary (1992) *Science as Salvation: A Modern Myth and its Meaning*. London: Routledge.

Midgley, Mary (2001) *Science and Poetry*. London: Routledge.

Midgley, Mary (2004) *The Myths We Live By*. London: Routledge.

Midgley, Mary (2007) *The Owl of Minerva: A Memoir*. London: Routledge.

Mill, John Stuart (1859) *On Liberty*.

Milton, Kay (1998) 'Nature and the Environment in Indigenous and Traditional Cultures', in David E. Cooper and Joy A. Palmer (eds.), *Spirit of the Environment: Religion, Value and Environmental Concern*. London: Routledge, 86-99.

Mitroff, Ian I. (1976a) 'Review of Feyerabend [1975]', *Contemporary Sociology* 5/3: 346-347.

Mitroff, Ian I. (1976b) 'The Tally: A Dialogue on Feyerabend and Ford', *Theory and Society* 3/4: 601-609.

Munévar, Gonzalo (2000a) 'Preface', to Preston, Munévar, and Lamb, v-vi.

Munévar, Gonzalo (2000b) 'A *Réhabilitation* of Paul Feyerabend', in Preston, Munévar, and Lamb, 58-79.

Munévar, Gonzalo (2002) 'Conquering Feyerabend's *Conquest of Abundance*', review of Feyerabend [1999b], *Philosophy of Science* 69/3: 519-536.

Munévar, Gonzalo (ed.) (1991) *Beyond Reason: Essays on the Philosophy of Paul Feyerabend*, *Boston Studies in the Philosophy of Science*, vol. 132. London: Kluwer.

Naess Arne (1991) 'Paul Feyerabend—a Green Hero?', in Munévar (ed.), 403-416.

Neto, Jose R. Maia (1993) 'Feyerabend on the Authority of Science', essay review of Munévar [1991], *Studies in History and Philosophy of Science* 24/4: 687-396.

Nietzsche, Friedrich (1979) *Philosophy and Truth: Selections from Nietzsche's Notebooks of the Early 1870s*, trans. D. Breazeale. Atlantic Highlands, N.J.: Humanities).

Nola, Robert (2001) 'Review of Preston, Munévar, and Lamb [2000]', *Mind* 110: 813-817.

Nola, Robert and Howard Sankey (ed.) (2001) *After Popper, Kuhn and Feyerabend: Recent Issues in Theories of Scientific Method*. Dordrecht: Springer.

Nussbaum, Martha (1990) 'Aristotelian Social Democracy', in R. Bruce Douglass (ed.), *Liberalism and the Good*. New York: Routledge, 203-252.

Oberheim, Eric (1999) 'The Works of Paul Feyerabend', in Feyerabend [1999a], 227-251.

Oberheim, Eric (2001) 'Review of Feyerabend [1999b]', *Isis* 92/3: 597-598.

Oberheim, Eric (2006) *Feyerabend's Philosophy*. Berlin: Walter de Gruyter.

Pais, Abraham (1991) *Niels Bohr's Times, in Physics, Philosophy, and Polity*. Oxford: Clarendon.

Palit, Chittabrata and Achintya Kumar Dutta (2005) 'Introduction', to their (eds.) *History of Medicine in India: The Medical Encounter*. Kolkata: Gyan Books, 11-31.

Panofsky, Erwin (1946) *Abbot Suger on the Abbey Church of St. Denis and Its Art Treasures*. Princeton: Princeton University Press.

Parekh, Bhikhu (1995) 'Liberalism and Colonialism: A Critique of Locke and Mill', in Jan Nederveen Pierterse and Bhikhu (eds.), *The Decolonisation of Imagination: Culture, Knowledge, and Power*. London: Zed, 83-98.

Parekh, Bhiku (2002) *Rethinking Multiculturalism: Cultural Diversity and Political Theory.* Harvard: Harvard University Press.

Parusnikova, Zuzana (2002) 'Integrative Medicine: Partnership Or Control?', *Studies in History and Philosophy of Biological and Biomedical Sciences*, 33, 169-186.

Pickering, Andrew (1984) *Constructing Quarks: A Sociological History of Particle Physics*. Edinburgh: Edinburgh University Press.

Pickering, Andrew (1995) *The Mangle of Practice: Time, Agency, and Science*. Chicago: University of Chicago Press.

Plotinus (1991) *The Enneads*, Stephen Mackenna (trans.), John M. Dillon (ed.) London: Penguin.

Popper, Karl (1945) *The Open Society and its Enemies*, 2 vols. London: Routledge.

Pratt, Mary Louis (2008) *Imperial Eyes: Travel Writing and Transculturation*, 2nd ed. London: Routledge.

Preston, Christopher (2003) *Grounding Knowledge: Environmental Philosophy, Epistemology, and Place*. Athens and London: University of Georgia Press.

Preston, Christopher (2005) 'Pluralism and Naturalism: Why the Proliferation of Theories is Good for the Mind', *Philosophical Psychology* 18/6: 715-735.

Preston, John (1996) *Feyerabend: Philosophy, Science, and Society* (Oxford: Polity Press).

Preston, John (1997) 'Feyerabend's Retreat From Realism', *Philosophy of Science* 64: 421-431.

Preston, John (1998) 'Science as Supermarket: 'Post-Modern' Themes in Paul Feyerabend's Later Philosophy of Science', *Studies in History and Philosophy of Science* 29: 425-447.

Preston, John (2000) 'Review of Feyerabend [1999b]', *Philosophy* 75: 618-622.

Preston, John (2009) 'Paul Feyerabend', *The Stanford Encyclopedia of Philosophy Winter 2009 Edition,* Edward N. Zalta (ed.), <http://plato.stanford.edu/archives/win2009/entries/feyerabend/>.

Preston, John and David Lamb (2000) 'Introduction', to Preston, Munévar, and Lamb, xiii-xvii.

Preston, John, Gonzalo Munévar, and David Lamb (eds.) (2000) *The Worst Enemy of Science: Essays in Memory of Paul Feyerabend*. Oxford: Oxford University Press.

Pseudo-Dionysius (1987) *The Complete Works*, Paul Rorem (ed.) New York: Paulist Press.

Raley, Yvonne (2005) 'Ontological Naturalism', *Pacific Philosophical Quarterly* 86/2: 284-294.

Reaven, Sheldon J. (2000) 'Time Well Spent: On Paul Feyerabend's Autobiography', in Preston, Munévar, and Lamb (eds.), 16-27.

Reichenbach, Hans (1951) *The Rise of Scientific Philosophy.* Berkeley and Los Angeles: University of California Press.

Reisch, George A. (1998) 'Pluralism, Logical Empiricism, and the Demarcation Problem', *Philosophy of Science* 65: 333-348.

Rescher, Nicholas (1995) *Pluralism: Against the Demand for Consensus*. Oxford: Clarendon Press.

Resnik, David B. (1998) *The Ethics of Science: An Introduction*. London: Routledge.

Richards, Norvin (1992) *Humility*. Philadelphia: Temple University Press.

Rickles, Dean (2008) *The Ashgate Companion to Contemporary Philosophy of Physics*. Aldershot: Ashgate.

Roberts, Karen Lorraine (ed.) (1996) *Circumpolar Aboriginal People and Co-Management Practice: Current Issues in Co-Management and Environmental Assessment* conference proceedings, Arctic Institute of North America and Joint Secretariat, Inuvialuit Renewable Resources Committees. Arctic Institute of North America, University of Calgary.

Roberts, Robert C. and W. Jay Wood. 2007. *Intellectual Virtues: An Essay in Regulative Epistemology*. Oxford: Clarendon Press.

Rollin, Bernard E. (1986) 'Ideology, Ethics, and History: A Reply to Feyerabend, Rachlin, and Leahey', *New Ideas in Psychology* 4/2: 165-171.

Rollin, Bernard E. (2006) *Science and Ethics*. Cambridge: Cambridge University Press.

Rorem, Paul (1993) *Pseudo-Dionysius: A Commentary on the Texts and an Introduction to their Influence*. New York: Oxford University Press.

Rowbottom, Darrell and Sarah Aiston (2006) 'The Myth of "Scientific Method" in Contemporary Educational Research', *Journal of Philosophy of Education* 40/2: 137-156.

Russell, Denise (1983) 'Anything Goes', *Social Studies of Science* 13/3: 437-464.

Sanga, Glauco and Gherado Ortalli (eds.) (2004) *Nature Knowledge: Ethnoscience, Cognition, and Utility*. New York: Berghahn Books.

Sankey, Howard (2008) 'Scientific Realism and the Inevitability of Science', *Studies in History and Philosophy of Science* 39: 259-264.

Scarre, Chris and Geoffrey Scarre (eds.) (2006) *The Ethics of Archaeology: Philosophical Perspectives on Archaeological Practice*. Cambridge: Cambridge University Press.

Schiebinger, Londa (2001) *Has Feminism Changed Science?* Harvard: Harvard University Press.

Schiebinger, Londa and Claudia Swan (2007) *Colonial Botany: Science, Commerce, and Politics in the Early Modern World*. University of Pennsylvania Press. 2007.

Schnädelbach, Herbert (1991) 'Against Feyerabend', in Munévar (ed.), 433-448.

Searle, John (2003) 'Contemporary Philosophy in the United States', in Nicholas Bunnin and E.P. Tsui-James (eds.), *The Blackwell Companion to Philosophy*, 2nd ed. Oxford: Wiley-Blackwell, 1-22.

Selin, Helaine (ed.) (2003) *Nature Across Cultures: Views of Nature and the Environment in Non-Western Cultures*. Dordrecht: Kluwer.

Shiva, Vandana (1993) *Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology*. London: Zed Books.

Shiva, Vandana (1998) *Biopiracy: The Plunder of Nature and Knowledge*. Dartington: Green Books.

Siegel, H 1989 'Farewell to Feyerabend', *Inquiry* 32: 343-369.

Singh, Simon and Edzard Ernst (2008) *Trick or Treat: Alternative Medicine on Trial*. London: Bantam.

Sir William Jones (1784) *Discourse on the Institution of a Society for Inquiring into the History, Civil and Natural, the Antiquities, Arts, Sciences, and Literature of Asia*.

Smolin, Lee (2007) *The Trouble with Physics: The Rise of String Theory, the Fall of a Science, and What Comes Next*. New York: Houghton Mifflin Harcourt.

Snow, Nancy E. (1995) 'Humility', *The Journal of Value Inquiry* 29: 203-216.

Soles, Deborah H. and Soles, David E. (1998) 'Fish Traps and Rabbit Snares: Zhuangzi on Judgement, Truth and Knowledge', *Asian Philosophy* 8/3: 149-164.

Solomon, Miriam (2006) 'Norms of Epistemic Diversity', *Episteme: A Journal of Social Epistemology* 3/1: 23-36.

Sorrell, Tom (1994) *Scientism: Philosophy and the Infatuation with Science*. London: Routledge.

Spivak, Gayatri Chakravorty (1999) *A Critique of Postcolonial Reason: Toward a History of the Vanishing Present*. Harvard: Harvard University Press.

Staley, Kent (1999) 'Logic, Liberty and Anarchy: Mill and Feyerabend on Scientific Method', *Social Science Journal* 36/4: 603-614.

Steedman, Philip (1982) 'Review of Feyerabend [1975a] and [1978a]', *Theory and Society* 11/5:724-728.

Stenmark, Mikael (2001) *Scientism: Science, Ethics, and Religion*. Aldershot: Ashgate.

Stevenson, M. (1999) 'What are we Managing? Traditional Systems of Management and Knowledge in Cooperative and Joint Management' in T. Veeman, D. Smith, B. Purdy, F. Salkie and G. Larkin (eds.), *Science and Practice: Sustaining the Boreal Forest. Proceedings of the 1999 Sustainable Forest Management Network Conference*, Edmondton, AB: Sustainable Forest Management Network, 161-169.

Strathern, Andrew and Stewart, Pamela J. (1999) *Curing and Healing: Medical Anthropology in Global Perspective*. Durham, NC: Carolina Academic Press.

Stump, David J. (2002) 'From the Values of Scientific Philosophy to the Value Neutrality of Philosophy of Science', in M. Heidelberger and F. Stadler (eds.), *History of Philosophy of Science*. Netherlands: Kluwer, 147-158.

Stump, David J. (2007) 'Pierre Duhem's Virtue Epistemology', *Studies in History and Philosophy of Science* 38/1: 149-159.

Suppes, Frederik (1977) *The Structure of Scientific Theories*, 2nd ed. Urbana: University of Illinois Press.

Sutphen, Mary P. and Bridie Andews (2003) 'Introduction' to their (eds.) *Medicine and Colonial Identity*. London: Routledge, 1-14.

Tambolo, Luca (2007) 'Il "pluralism libertario" di Feyerabend', *Rivista di Filosofia* 98/3: 385-415.

Taylor, Charles (1991) *The Ethics of Authenticity*. Cambridge, Mass.: Harvard University Press.

Taylor, Charles (2007) *A Secular Age*. Harvard: Harvard University Press.

Terpstra, Bert (2001) 'A Note on the Editing', in Feyerabend (2001), xvi-xviii.

Theocharis, T. and M. Psimopoulos (1987), 'Where Science Has Gone Wrong', *Nature* 329: 595-598.

Tibbetts, Paul (1976) 'Feyerabend on Ideology, Human Happiness, and the Good Life', *Man and World* 9/4: 362-371.

Tsou, Jonathan (2003) 'Reconsidering Feyerabend's "Anarchism"', *Perspectives on Science* 11/2: 208-235.

van Fraasen, Bas C. (2000) 'The Sham Victory of Abstraction', review of Feyerabend [1999b], *Times Literary Supplement* 5073 (June 23), 10-11.

van Fraassen, Bas C. (1985) 'Empiricism and the Philosophy of Science', in Paul M. Churchland and Alan Hooker (eds.), *Images of Science: Essays on Realism and Empiricism, with a Reply from Bas C. van Fraassen*. Chicago: University of Chicago Press, 245-308.

van Fraassen, Bas C. (2010) *Scientific Representation*. Oxford: Oxford University Press.

Varouxakis, Georgios (2005) 'Empire, Race, Euro-centrism: John Stuart Mill and his Critics', in Bart Schultz and Georgios Varouxakis (eds.), *Utilitarianism and Empire*. Lanham: Lexington Books, 137-155.

von Brentano, Margharita (1991) ' Letter to an Anti-Liberal Liberal', n Munévar (ed.), 199-212.

Wakabayashi, Bob Tadashi (1998) *Modern Japanese Thought*. Cambridge: Cambridge University Press.

Weber, Max (1917/2004) 'Science as a Vocation', in David S. Owen and Tracy B. Strong (eds.), *The Vocation Lectures*. Indianapolis: Hackett, 1-31.

Weinert, Friedel (1998) 'Review of Preston [1996]', *Philosophy* 73: 634-638.

Williams, Bernard (1978) *Descartes and the Project of Pure Inquiry*. Harmondsworth: Penguin.

Williams, Bernard (2002) *Truth and Truthfulness: An Essay in Genealogy*. Princeton: Princeton University Press.

Williams, Michael (1998) 'Feyerabend, Paul Karl', in Edward Craig (ed.), *Routledge Encyclopaedia of Philosophy*. London: Routledge, retrieved 12 April 2009, from http://www.rep.routledge.com/article/Q114.

Worrall, John (2000) 'Kuhn, Bayes and "Theory-Choice": How Revolutionary is Kuhn's Account of Theoretical Change?', in Robert Nola and Howard Sankey (eds.), 125-152.

Yates, S (1984) 'Feyerabend's Democratic Relativism', *Inquiry* 27: 137-42.

Ziman, John (1980) *Teaching and Learning about Science and Society*. Cambridge: Cambridge University Press.